'Nexial-topology'
Situation modelling:
Health ecology and other
General perspectives

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‘Nexial-topology’ situation modelling: Health ecology and other
General perspectives

by Marika Bouchon

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CENTRE FOR SOCIAL ECOLOGY RESEARCH

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To the ‘little people’
Statement of Authentication

The work presented in this thesis is, to the best of my knowledge and belief, original, and every effort has been made to ensure that ideas, images and other sources are acknowledged and referenced. This material has not been submitted, either in full or in part, for a degree at this or any other institution

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(Signature)
‘Nexial-topology’ situation modelling: Health ecology and other general perspectives

Abstract

This research generated a formal method for global ‘situation modelling’ of near-critical and critical phenomena. The new paradigms and the construction of mental reality or social spaces do not explain the damaged world we leave to our children and the degeneration of health. The ‘physical’ was explored experimentally through the reputed imperfection of the body in daily living and the ecology of its health. An ‘integral’ methodology allowed combining this with a study of general perspectives in many fields. This theoretical and empirical study was framed according to a third-order logic: (1) The variety and inconsistency of perspectives on the unclear notion of ‘health’ required a generalist (meta-)classification or organising principle applicable in particular to health. The method of ‘perspectival analysis’ is based on the field- and domain-specific vocabularies, number of categories, and image types used in formulating explanation/experience in each framework, in both scientific and human domains. This theoretical study was (2) grounded in a ‘radical empirical’ study of the effects of nutrition and healing techniques on a low-grade chronic syndrome (not life threatening but connected to stress, inflammation, swelling, tissues wasting). A ‘local-case’ experimental research design (representative of an aspect of health), and new topographic ‘gauging’ techniques were devised to observe small spatial changes (positioning, distortion, distribution). The results and concrete/practice models led to the same conclusion as the abstract study: all our perspectives on health, body and space, have some underlying systemic form, and have in common two unifying frames – duality and polarisation –, characteristic also of point-set theory derived frameworks. Using them allows ‘circumnavigating’ the essential of all possible perspectives, without becoming lost in their details. However, they leave non-local effects, anomalies (or 'bad behaviour”) and periodical instability unexplained. (3) These were investigated by studying behaviour (irrespective of whether internal or external), and ‘not well understood’ induced health manifestations, and by mapping their topologic properties of small deformation through (a) a ‘local’ cognitive consideration of experience construction, the research process itself, and the intellectual skill of model-making, (b) etymologic studies to track forward semantic developments and perspectival shifts and inversions, (c) a graphic study of the universal symbolic forms in models, traditions, and dreams, tracing them back to ‘world-origin’ models (appearance/occurrence), and shape-icons (mental, cultural), such as tree, ladder, mountain or vortex-vertex spiral.

This thesis examines health disturbance, physical distortions and cultural deformations, their usual descriptions as timed changes, and shows how two fundamental parameters of direction and motion (or movement, energy, 'Wind') define geometries of binding, or directional activation (or
active projection). These culturo-mental geometries produce generic images of locally induced phenomena, and represent boundary phenomena globally as 'natural' in the spatial-physical world, and as 'hidden' or latent in the human world. Their downside is to introduce systematic instability in our expressions, models of culture/civilisation, as well as in health manifestations. All these are found to be rooted in modelling styles derived from the 'local' geometry of observing – framing – a field in 'perspective', mostly based on vision, audition, and skin surface (touch). These geometries are used to explain and justify in particular the instability and recurrent crises of health in chronic syndromes and ageing, and the 'badly behaved' health of childhood and adult females (eg consequences of pregnancy). The conclusion imposed itself that the 'physical world of humans' is shaped through critical response and boundaries, and it appears that physical integrity, including sound health, sanity and even safety, cannot be preserved but by conscious alert attention or voluntary practice or effort (eg 'workout'). Some experiences recounted in this work (some from the literature) led to an opposite presupposition. Three possible logics rule deployments of perspective into flat, spherical, and hyperbolic geometries (a known basis of mathematics). Which is used depends on the 'local' state of criticality (sense of urgency, emergency, pressure) of the observing body-brain-'system'. It correlates with this universally assumed vertical axis, with the exclusive use [instruments too] of the senses of the head and of 'skin-encapsulated' derived systemic definitions of 'the world' and 'the observer' (self or body). These allow localising and attributing properties to one or the other or their combination.

However, they can also be considered as undifferentiated properties, 'non-local' but governing, of the 'physical world of humans' as it is apprehended in daily living, manifesting in a surface-related sense of swelling and gravity. A simple form of geometric topology 'without hole' (without discontinuity), here introduced through two cognitive experiments, animations, and images, can describe this. The method of 'nexial-topology' produces an 'animated imaging' that can be used to model (but not 'represent' in word, number, or realistic/naturalistic images) the situation reaching 'critical boundary'. It then shows auto-reinforcing self-organisation and auto-destruction in 'passing' it. Yet, it can also be used as a 'native gauging' expressed in gesture or body posture, related to intuition, instinct, and the rare 'thinking in image'. As such, it describes approaching 'critical boundary' (versus 'reaching') as auto-limiting. A crucial finding is that 'spontaneous' behaviours (non-induced, non-intended) can ensure the integrity of health under operation in most conditions, and stop extremes. Yet, they are usually deemed meaningless, random or useless, and are systematically suppressed by enculturation and prevented by civilised lifestyles. 'Nexial-topology' gives a clear meaning to them, and can model the 'ease' of health and of daily living. It gives access to more basic options, with wider effects, more immediate than all our solutions, often ignored because too obvious. For example, 'global warming' could be addressed as a non-local property and a deployment into crises to 'stop', rather than separate problems of water, resources, heated behaviour, inflammatory and 'water diseases'.
Organisation of this multi-media thesis:

The thesis concerns cross-field research and focuses on 3 main subject areas:
- Forms of representation and modes of observation in general. These are the basis used to build our ‘perspectives’ of explanation and experience, our research methods, scientific models, theoretical-philosophical systems of thought, and metaphors;
- Underlying geometry of these representations, modelled globally with topology, thus showing the deployment of symbolic and ancient forms of language, cognitive development, and meaning of some gestures;
- Low-grade chronic syndromes: applied representations of ‘the body’ and experimental basis of this study (various forms of medicine to treat them)

This complex work of integration of ways to represent, understand and practice, is of a generalist nature: it is applicable to any field. The thesis uses many cross-references to chapters, appendices, animations, and slides, in order to present several integrated aspects of a generic phenomenon.

The findings produced two methods of representation applicable to gain a global view of any situation, and to understand ‘fundamental problems’ in many fields, both scientific and human.

Short Table of Contents: This thesis comprises two books and other media:

- Main Book: Chapters of the dissertation
  1-Introduction
  2-Methods
  3-Health and illness
  4-Perspectival observation
  5-Many perspectives
  6-Validity and valuing
  7-Nexial-topologic deployment of perspectives
  8-Ancient perspectivalism, The Earth, and ‘The East’
  9-Conclusions

- Book of Readings:
  24 Appendices (A to F: text extracts for quick reference)
  References

- Other media:
  9 Animations
  7 Power Point presentations (slides)
  [Presentations PPT1, 2 and 4 can be viewed independently from the thesis.]

See also Image Summaries.

In order to follow the text and cross-references easily, please refer to the chapters and appendices by name (see below, and see why in introduction) rather than by the file numbers on the UWS website, which are multiple and do not (for technical reasons) reflect this organisation of the materials. This can be made easier by requesting from the author the zipped directories containing the files in proper order.

Contact the author at: mbouchon@dodo.com.au

Following the full Table of Contents in these pages, are summaries in image of the overall findings, Power Point presentations, and animations. The introduction details the organisation of ideas in the thesis, the contents of the various sections and the cross-referencing between sections. It also provides a crucial context to highlight why conventional forms of representation were challenged.

- The reader interested in the fundamentals of health or the role geometry in cognition would benefit from viewing the Power Point slides PPT1, PPT2 and PPT4, before reading the text.
- The reader interested in uses of topology and the ‘fundamental problems’ of science and philosophy could focus on reading the fourth to seventh chapters while viewing the animations.
- The reader interested in linguistic, cognitive or human aspects will be better guided by the text.
- The complex chapter on methods is a complex piece destined to academia.
Organisation of the thesis materials: ‘site map’

This is a multi-media thesis in 52 files. Here is a ‘site map’ of their display online at the UWS library.

The materials of this thesis are displayed online as 52 source files, on the website of the University of Western Sydney (UWS) library, at the web address (URL):

http://arrow.uws.edu.au:8080/vital/access/manager/Repository/uws:3698

This is the internet URL identifier to use for citation.

The 52 source files online at UWS library are named and numbered, for technical reasons, according to a system different from that of the thesis. Below is a table of correspondence, to help the reader restore the order in which the sections are meant to be cross-referenced in a hard-copy of the thesis. The following ‘Table of Files Online’ constitutes a ‘site map’ of the 52 source files displayed online, with correspondence between the online file names and the sections named in the thesis.

Please keep a printed copy of the following table at hand and, while reading, refer to the names of sections in the last column (right) of this table:

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Animations

<p>| SOURCE37 | Animation_01          | 287.4 kB | MPEG Video                          | 1-Trefoil                                                            |
| SOURCE38 | Animation_02          | 17.1 kB  | GIF Image                            | 2-Cube &amp; sphere                                                     |
| SOURCE39 | Animation_03          | 49.4 kB  | GIF Image                            | 3-Bubbling up-and-down pulsating                                  |
| SOURCE40 | Animation_04          | 556 kB   | GIF Image                            | 4-Linear development                                               |
| SOURCE41 | Animation_05          | 399.1 kB | GIF Image                            | 5-Rainbow fountain deployment                                      |
| SOURCE42 | Animation_06          | 32.1 kB  | GIF Image                            | 6-External homothetic centre of projection                          |
| SOURCE43 | Animation_07          | 29.6 kB  | GIF Image                            | 7-Internal homothetic centre of projection                          |
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| SOURCE23 | Appendix_12     | 33.4 kB | Adobe Acrobat PDF | Extracts F8 – ‘Establish’: forms of stability |
| SOURCE24 | Appendix_13     | 41.6 kB | Adobe Acrobat PDF | Extracts F9 – Deep Confusing Questions |
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A note on the use of Topology in this work

- A difficulty has appeared in understanding this thesis, and any possible misunderstanding needs to be cleared from the start.

Topology is unknown to human scientists, and physical scientists use mostly only its mathematical formalisms.

The physical scientist should note a fundamental difference between mathematical topology and the form used here. The ‘Nexial-Topology’ described here is, in its ‘native’ form an application of topology ‘without holes’, ‘without discontinuities’. Discontinuities are characteristic of deployed perspectives, systems of analysis, and topologies. The difference may appear obscure, so an appendix has been added. Please take the time to read it.

The human scientist should become familiar with the nature of this geometric discipline, to gain a rough idea of what is involved in this work. The geometric aspect, when ‘deployed’ into flat images, is related to symbolism, but if undeployed, it is a ‘native ability’ that is related to gesture. Please take the time to read the appendix mentioned: it gives some simple explanations of what is meant by ‘topology’.

Please take the time, before reading this thesis, to read the appendix that details this:

**Appendix C4\ Topology**

- The major findings derived from using this form of topology ‘without holes’ are given in the *image summary 1: Overall findings* (see above). This is meant to offer a practical context by referring to some common questions of daily life, and the remarkable answers that Nexial-Topology can produce to answer them.

*Before* reading this thesis,
Please take the time to peruse:

**Image Summary 1: Overall Findings**
---3 geometric rules of ‘deployment’---

‘turn-around’ - ‘turn upside-down’ - ‘turn inside-out’

**Rule of 90°**: spreading-at-surface ‘deploys’ and localises in extended naturalistic and realistic spaces

**Rule of 180°**: built-in symmetry & circularity create general-specific perspective

**Rule of 360°**: to complete-perfect deployment into ‘systems’, ‘worlds’ (some ‘hidden’, ‘dark’, or ‘lost’) is boundary making-breaking, H-inversion, Sc-reversal, Sc-H-return’, and yields repetition, periodic instability, and endless fine-tuning or fall-apart (‘cloud’)

All 3 operations hide a ‘drift’

‘Advanced’ RePresentations
(with nexial discontinuities)
are not quite equivalent to the undeployed view of the ‘Presenting’ situation (topology with no ‘hole’)
and, in practice, do not quite ‘return’ to it.
They exPress a drift, semantic and genetic.

The Anthropic Principle is known to science (also anthropomorphism);
Physicalism is known to humanities (here extended to ‘physikomorphism’ in fundamental sciences);
‘Spiromorphism’ characterises the integration of both science and human domains.
These conventions of representation are only means of ‘localisation’ and ‘extension’.

So, do we ‘create reality’? No and yes.
We ‘deploy the situation’ into detail, specific or generalised, civilisation, culture,
ignoring non-local ‘gauging’.
Our alertness produces perspectival ‘valuings’, and beginnings and ends (including discontinuity – periodic or not –, or SurVival), Leaving global ‘ease’.

This is viewing critical boundary as ubiquitous.
Is it, really? Not according to nexial-topology.

Gauging, (non-localised)
Ease, (no extensions)
Soundness – Safety – Sanity (approach, not reach Boundary)
--- Result of ‘deployment’ into perspective(s) ---

1. 90° ‘swelling becomes flat’ spreading
   - Convex/concave, dynamic and UI dynamics

2. 180°: spreading to flat flow
   - Symmetry: circularity
   - Processual-ambient mix of multi-level order
   - Global formation: stop-on and take-off of global order

3. 360°: ‘turn-around’: bubble-world making
   - Swaddled A/II-animated consciousness

4. Convex/concave topology
   - Expect quantified unfold/onto:
   - Convex bubble-world ending ↔ beginning
     Drifts: random, genetic … into generic ‘cloud’ scatter

---

**Push to Boundary:**
Directed pressures

Rise and rise again into critical states,
Periodic instability: ‘grav-waves;

Endless ‘bubble’-spaces making (worlds, objects, subjects, systems),
Drifts: semantic, genetic … into generic ‘cloud’ scatter

---

**Ignore and invalidate:**
the obvious, in any field, in both human and scientific domains,

**the most ‘basic means’:**
Gauging                  Ease                      Soundness – Safety – Sanity
(no ‘valuings’)          (no unbound-rebinding)    (mostly no-pressure daily living)
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Image-summaries
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List of abbreviations
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- Editorial notes
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- A generalist study
- Integral approach
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Validation procedures
Validity of ‘perspectival mapping’
Validity of ‘nexial-topology’

Figure 42. Flat map of methodology: ‘complete’ but limited

Health and illness (third chapter)
Supporting materials
Describing the syndromes
Confusing definitions: examples of meaning inversions and ‘turn around’ in health
From survival to ‘ease’ and ‘proto-health’
Difficulties with words
The shaping of health: using topology to image its changes
Modelling health: from conventional ‘growth’ to topologic ‘deployment’
‘Brain-central-control’, loss of sensing, and instability
  • Property 1: Entraining brain-central-control is accompanied with distortions and
    limitations, including loss of internal sensation and progressive systemic damage.
An application: feeding, effects of food, and drifting taste distortion
Another application: unfolding-enfolding of ‘immune defence’
  • Property 2: The undifferentiated ‘activation’ of ‘defence’ involves water and
    swelling, which is different from ‘water retention and immune aggressive defence’.
  • Property 3: Immune ‘defence’ is activated through vertical projection along the spine
    and entrains either nervous or hormonal system first, then the other, into ‘brain-central-
    control’, which directs ‘aggressive defence’.

Figure 43. Flat map of immunity: something missing
Perspectival observation (fourth chapter)  
Representation and the ‘likeness’ of what ‘presents’  
Animation: Trefoil  
Three ways of viewing this animation with perspective  
Objective view  
Subjective view  
Modal view: geometrical framing  
Centre of geometric projection and ‘framing’  
‘Placing’: localising, extension, ‘deployment’  
Two experiments to introduce the ‘native gauging’ or ‘nexital’ apprehension  
‘Primum Movers’ – a general notion of N3p-polarised activity  
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Explanation-up: individual cognitive process of observing and valuing  
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‘Soma-Analysis’: the Vertical Axis  
H-researcher orientation’ and Sc-‘local orienting’ in observation  
Predictable valuing and deployment  

Figure 11. Valuing
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UNIVERSITY OF WESTERN SYDNEY, AUSTRALIA
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$\leftrightarrow$ symmetry

$\leftrightarrow$ circularity or circulation

L-, R-, M- Left- and Right- (perspectival biases), and Middle (or centre)

Sc-, H-, Sc-H scientific, human, or (combined) scientific-human domains

M2, M3, M4… a model ‘by the Number’, containing 2,3,4… general categories or types, or symbolised by a geometric figure characterised by the number (eg ‘M3’ for a triangular model)

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This is a multi-media thesis with many files. For a ‘site map’ of their display online at UWS, please consult the section: ‘Organisation of the multi-media materials in this thesis’, in the “Front” pages file, after the Abstract. Please, also refer to Appendix C (Endnotes) for comments on a number of generalist concepts used in this work, such as: topology in its various forms, the terms ‘nxial’, ‘core culture’ (‘secret’ culture), integral.

Introduction

‘Why do scientists grasp the importance of visual imagery, while most humanists accept the hegemony of the word? Scholarly publication in the humanities generally degrades imagery, and in many ways. Many thick tomes have no pictures at all... Images when present, are often only “illustrative”, are often collected in separate sections, divorced from textual reference and therefore subsidiary.’ (Gould 1995 p.40)

‘If icons are central to our thought, not peripheral frills, then the issue of alternative representation becomes fundamental to the history of changing ideas in science (and even to the quite legitimate notion of scientific progress!) How shall we draw the geometry of contingency?’ (Gould 1995 p.67)

The ‘geometry of contingency’, together with that of necessity, were at the core of the findings in this research, and geometric images are the core of this work, rather than subsidiary or illustrative. They allow to model health phenomena and developments of theory and practice, of explanation and experience, of technological progress and the concurrent rise of periodic instabilities all at once, bypassing the contemporary tendency toward complex representations. Reporting these is best done with geometric animations, applied to a particular situation. Yet, for the general and practical implications in specialised areas to be apparent, complex textual explanations have been necessary. This dissertation is, therefore, a composite of animations, geometric images and text, involving excursions into vastly divergent fields. It invites the reader to take a fresh look at the notion of physical
health, first by gaining a general view of our explanations of it, and of the many ways of
experiencing ‘feeling ill’ or ‘healthy’. Then, modelling this together with the global ecology
of human soundness, sanity and safety through an imaging based on the mathematical
discipline called topology, brings to view a ‘big picture’ (this expression is not quite
adequate) that gives access to unusual options. (What topology means is summarised page 9
below; see also Appendix C, in the <Endnote C4\ Topology>\(^1\).)

This research studies the general ‘perspectives’ and biases that characterise our explaining
and experiencing, which affect perception and what we consider ‘healthy’. The study brings
out implications, by focusing first on a reduced scope of ‘physical health’ in a particular
situation: low-grade chronic illness. How ‘we’ construct this and ‘create’ this experience, is
only a starting point for the exploration of general ideas such as ‘high/low degree’, found in
all fields reviewed in this work, in various forms of theory and practice. The ‘field’ studied
in this research is discussed in <Methodology\> A global field accessed locally> (p. 55).

The explanations and experiences involved in the exploratory and mapping phase of this
research may be of the accepted and recognised kind, or controversial, current or ancient.
Those reviewed in this research concern many fields and are approached as expressions, in
these fields of general ‘perspectives’. Imaging can help to visualise how, in general, we
derive these perspectives, and model their final developments and origins, as well as some
consequences for the body’s health. The theoretical part of this work is supported by an
experimental investigation of bodily ‘signs’ and ‘signals’ too small to be called ‘symptoms’
and of internal sensations, related to the effects of various methods for ‘getting better’. These
are also linked to the progression, recurring crises, and roots of low-grade chronic illness,
and phenomena deemed ‘induced’ or ‘spontaneous’ are not excluded from observation in
this study. The words used to describe the usually unexpressed symptoms, sensations, or
little defined ‘global notions’ may appear ‘obscure’ to the reader, because modern language

\(^1\) In this referring notation, the broader chapter or appendix is followed by “\(\)\)” and a sub-
section, sometimes two. This aims to provide context while following different dimensions
of thought.
either no longer formulates them or has no collectively accepted way of doing so.\(^2\) Imaging brings to light areas that are commonly ignored, and which have implications for old issues in medicine, such as physical self-care, patient compliance to treatment, communication in the clinical encounter, what is ‘normal’, and what constitutes ‘improvement’. The findings involve the cultural attitudes and practices that surround the body and behaviour, in daily life and particularly in childhood.

Previous investigations into external aspects of human living, and a two-year Masters inquiry (Bouchon 1998) into mind, consciousness, spirituality, and the ‘New Paradigm’, had made it clear that postmodernist relativism and ‘New Age’ explanations of the creation of reality by human consciousness or mind projection have their limits. They may explain the diversity of our mentally and socially constructed ‘realities’, perceptions, and notions of ‘embodiment’, but clash with some philosophies of nature, of primitive simplicity and spontaneity, and with basic empirical ‘self-evidence’ of physical reality. They are inconsistent with the immediate sense that something does ‘exist’, which my mind cannot invent without logical circularity – for example my pre-existing body and its senses. A question was left open:

*Do we 'create reality', as 'New Age' and 'New Paradigm' proponents put it, and if so, how and to what extent do we do that for physical space, including body?*

This interest in material reality was partly motivated by the current ecological and societal crises, and partly by a mother’s concern about her son’s health, sanity, and future in this fast changing and stressful world.

The particular angle of approach – the physical body and its health – arose from a practical situation, my stress-related health breakdown and falling into chronic illness. This was diagnosed as Fibromyalgia (FM), which is also named Myalgia Encephalitis (ME, related to

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\(^2\) This is discussed in several sections: Confusion about concepts: <-Methodology\> Problems of definition> p.32.>; ‘cryptic clues’: <-Methods> p.47; ‘secret’ and arcane knowledges: <Endnote C6\> Core culture>; ‘global notions’: are introduced in <-Ancient Perspectivalism>; ‘the obscure’, and meaning difficult to understand for usual frameworks: <-Ancient perspectivalism\> ‘Obscure’ vocabularies>, <Appendix A – Nexial-topologic vocabulary\> Obscure words and ‘dark sayings’>, <Extracts F18 – Rules of localisation-extension in the literature> and <Extracts F5 – Gauging thinkers\> ‘Obscure’ wording of the ‘space’>.
brain swelling) and Chronic Fatigue Immuno-Dysfunction Syndrome (CFIDS or CFS). The brain and cognitive effects, and endemic brain infestation would make the word ‘encephalitis’ relevant, although my brain shrinks rather than swells, but in any case, the name ‘ME’ has been abandoned in official definitions. The multiplicity of symptoms, physiological systems affected, ‘accessory’ conditions and commonly connected diseases, and their variability, is shared by a number of other chronic syndromes such as Irritable Bowel Syndrome, Post Traumatic Stress Disorder, Metabolic Syndrome, etc. This makes the syndromes difficult to differentiate and diagnose. Yet, one distinction is clear and is related to the degree of gravity. ‘Chronic illness’ can cause medical high emergencies, organic injury, and threaten life (eg loosing feet and kidney failure in diabetes, organ failure in auto-immune diseases). This expression, however, also covers ‘low-grade’ conditions classified as ‘syndrome’ rather than ‘disease’. The present work focuses on the impairments and progression of low-grade chronic syndromes – that is, those that do not threaten to soon result in final physical death. In this case, the names attributed differ according to the most visible manifestations and apparent triggering factor(s), but also with the doctor’s perspective on ‘the fundamental cause’, and best treatments: No single cause has been found and widely accepted for FM-CFIDS-ME, so it is sometimes considered multi-factorial, and many illness names correspond to related conditions (a list is collected in Appendix F4). As for most of these syndromes, the specialised literature often mentions that they are ‘not well understood’, before taking a particular causal approach (eg stress, food allergy, lifestyle, “it’s in the genes”, etc.). The most formal biomedicine even denies the existence of CFIDS altogether, partly due to the limited dominant view of it as ‘mere fatigue’, and to the lack of information on the wide range of symptoms and systemic manifestations, which are also found in diabetes and auto-immune diseases, with more gravity. Controversies involve standards of normality, both physical and behavioural, and unclear risk factors related to family (apparent ‘contagion’), location (geographical clusters), and events (previous viral infection, stress, trauma, overwork, etc.).
Strategies for medical cure, for practical improvement of the patient’s many limitations, for holistic healing (‘alternative medicine’, inspired by traditions or Eastern practices, and ‘complementary’ medicine), or for general well-being, are in no better agreement. The bewildering contradictions range from controversies, in both theory and practices, to the vagueness of lifestyle and dietary advice (is bread ‘good for you’, does it ‘make you fat’ or even allergic?), the impossibility to obtain a straight answer about a question as simple as ‘what is a healthy diet?’, the plethora of alternative treatments and herbal or nutritional supplements on offer, etc. All these make it impossible to make any sort of reasonably ‘informed’ decisions without serious medical education, and without using medical helpers as an information network. Furthermore, specific treatments rarely take into account previous states of health: the personal standards of ‘feeling healthy’ are different in various individuals, and sometimes do not correspond with statistically normal standards (indexed by age). The assessment of ‘successful’ treatment results also does not take into account the frequent (but generally undocumented) progression to a later, worse, yet more clearly diagnosable disease. In such cases, the progressed disease is generally considered as unrelated to the earlier syndrome, or as righting a previously wrong diagnosis. Yet, it offers an easier way to make sense of the developing condition, and gives easier access to known treatments. All this is complicated by the great diversity of existential meaning attached to illness by patients, who sometimes even consider it spiritually positive (eg “It is the best thing that ever happened to me”). The clinical literature also attaches personal evaluation to illness, as giving ‘secondary’ social benefit, or being, in itself, an unconscious psychological benefit. All medical/health factions also make wild success claims for their treatments, which can often not be clearly assessed except by directly trying them for oneself (even medical drugs). This utter confusion is one reason that leads most patients to rely on medical expertise.

Consequently, in this research, there was a need for some kind of classification and organising principle for ‘mapping’ the various perspectives into a general scheme. To
understand this situation, I also had to test empirically some of the explanations and claims, and find out what the actual effects are, their variations and the reasons for them, and whether there was likely differences in the effects between individuals or between the possible ‘body types’ or different baseline ‘states of health’ before illness. For example a brain stimulant can correct one person’s health but cause an epileptic fit in another – this is part of what medicine calls ‘side effects’, and is a common problem in the uneducated use of herbalist treatments.

The elementary types of classifications and models I found in the literature, and those developed through the study of theories and experiential styles in many areas, are also present in the ground knowledge of medicine. For example, the descriptions of the body follow familiar elementary principles of intellectual construction and explanation of physical or material reality (eg operational: how things ‘work’, and connections we recognise) and of experimental/experiential finding (eg structure-function). Medicine thus involves four well-known styles of explanation/ description (respectively): anatomy, physiology, metabolic operations (or transformations) and nosology (disease-defining linking sets of symptoms. All four are reflected in the education of clinicians, but fail to account for low-grade chronic conditions, and yield the inevitable necessity to introduce complexities such as those of medical biochemistry and genetics, and therefore new styles of explanation. There are many ways of defining ‘elementary’ principles or categories; these are developed through most of the chapters.

Two of the most common, elementary, habitually unrecognised taxonomies are apparent in: (a) the three systems most often mentioned: nervous, endocrine, and immune systems, and (b) the dual distinctions such as parts and whole (eg cell and organ, the whole body and its sub-systems), objects [or subjects] and relation [or interaction] (eg organ-circulation, body-mind, body-brain, self-world, body-environment).

Both rely on the general notion of a ‘system’, which is understood differently under various styles of explanation (eg whole, object or thing). It takes different names as it is applied to
(or drawn from) diverse fields (eg social systems and organisations, the mind’s self, spatial bodies in physics, the body-organ-cell biological hierarchy, the objects and subjects of human sciences, etc.). Such fundamental notions, not always basic, are the source of the parameterisation developed in the first phase of this work, for an analysis of the various perspectives that is applicable across fields (‘perspectival analysis’), and across scientific and human domains. Integrating these domains into a common classification system permits a generalist approach. The combination of fundamental parameters gives a picture of ‘health’ that involves medical methods based on ideas such as activation of sub-systems (eg sexual drive, immune defence), compensating for negative effects (eg relax to reduce tension, purposefully avoid allergens), and practices that restore binding integrity (eg breathing, exercise, eating fresh foods or juices, spinal adjustment). These ideas lead to strategies that typically focus on:

(a) inducing reaction (directed response), to normalise behaviour, or optimise or improve it,

(b) stabilising the functions or circulations to prevent extremes,

(c) establishing structural integration (binding) to prevent breakdowns.

All of them rely on either the physical entrainment of brain-driven processes (eg neuro-endocrine triggers, balancing feedbacks) or mental self-control involving intent, choice, decision, will, imagination, visualisation, etc. The aim is to exert active or directive ascendancy over the body, and shape it for use by the more ‘interesting’ self-mind inhabitant of the body-machine or vehicle, or the more ‘complex’ brain-mind (more ‘evolved’ than mere mechanical or animal physicality).

The problem is that these strategies, which we learn from childhood, were exactly the crux I was finding for my ‘illness’: an apparently normal body (according to others and to most medical tests – available in Australia –) but with too sensitive reactions, a chronic stress-alert climaxing into acute extremes and collapses (although ‘small’, not threatening with physical death they involve the entire lifeworld), and a progressive breakdown – the falling apart and ‘consuming’ or ‘wasting’ of the tissues systematically, with focused localisation in nerves,
spine and brain. The body was, altogether, also driven out of physiological effectiveness by both brain and mind (rather than brought by them to a restored health). This ineffectiveness involves vital activities such as breathing, body temperature, sleep, self-care, and inability to recognise precisely signals of ‘physical need’ (eg not knowing if ‘need’ means hunger, thirst, or need to breathe or move, and having to try one after the other). The explanations of causes and effects just did not fit. The brain, over-focused mind, and constant requirement to use both to ‘cope’, control, and for purposeful work, appeared as the cause of both the internal manifestations and external effects (lifestyle becoming ‘stressful’), rather than as a solution for the condition. The accepted explanations presented a ‘turned-around’ view of the situation I was facing. Williamson & Pearse (1980) have noticed such an inversion, in another way and in a different context (see discussion of health in the next chapter), but it exists in other fields as well.

As a reasoned strategy, trying to take a holistic approach by synthesising brain central control and self-control over the physical body, its internal patterns of activity, and external behaviour (that of the human person), creates a causal circularity between the physical and the mental aspects of the head: One uses the mind to ‘balance’ the brain and external ‘personal’ behaviour, and the brain to regulate the mind and internal ‘physical’ behaviour. This translates into vicious circles and recurrent phenomena, and eventually gets out of hand.

In practice, it is this very strategy that had left me with a mind in chronic stress, an over-used brain in chronic alert, now too damaged for efficient control of even the basic physiological functions of a strained body. The vital functions of the body had become so ineffective on their own, that constant mental self-monitoring had become a daily survival necessity to permanently make conscious decisions for actions as primary as calming the mind and brain to go to sleep, remembering to eat, drink, and even breathe (having to use a timing clock as a reminder when sitting for any length of time). This also spiralled out-of-control into recurring collapses from slight effort, into what feels like a ‘brain storm’ and into increasing dehydration and chronic swelling and ‘burning’ pains. Existentially all this correlates with
socio-material difficulties as well, and represents a ‘state of stress’ that has no particular ‘cause’ or ‘triggers’ but itself and which ‘pushes’ itself to extremes. Almost everything, inside and outside, that is ‘normal life’ to others, becomes ‘stressful’ and a source of ‘allergy’ (even taking a shower). Usual explanation could not account for these matters.

Problems related to explanation can be found in many other fields, particularly the general definitions used in theories and philosophies (an example is considered in relation to methodology). Through a ‘perspectival analysis’ (primarily but not only) based on linguistics and vocabularies, these can be clarified and organised into an overall ‘perspectival map’ that can represent both a specific case of illness (low-grade chronic syndromes) and a general image of our notions of health. It is a map of a general system of explanation and construction of experience. (There are many.) Using this way of analysing, one can also track forward the development of characteristics of illness that become generalised (eg inflammations and their developments into neoplasia and other degenerations), as well as the evolution of general perspectives (eg types of thinking, experiential styles, body types, and ancient ways of observing). Yet some other phenomena still do not make sense that way – for example, the origin of ‘spiralling up’, of ‘priming’ (what initiates or pushes into a ‘shift’ or ‘jump’ event). Using a different range of methods allows one to trace back the history of ‘behaviours’ 3 (or ‘workings’) and the expression of forms (eg aetiology of a syndrome, paradigmatic reaction at the source of a new perspective), to an ‘initiating beginning’ or ‘origination’ process. The various explanations, symptoms, and sensations of illness can also be traced back, and their characteristics studied, through topographic images (eg core-surface, centre-periphery) and simple geometry (eg up-down on a vertical axis) that shift from one iconic figure to another, representing ‘orders’ of development or of generalising, or localising effects (eg fibrous concretions, worsening chronic low-grade dehydration). This kind of modelling is a dimensional animated geometry based on topology, which is here

3 The term ‘behaviour’, as employed in this work, means ‘workings of’ rather than the ‘externally’ observable actions or ‘internal’ motions of an object or subject, and describes nexual and topologic ‘properties’ rather than conventional movements and activities.
developed into a method that I call ‘nexial-topology’. (This ‘geometry’ is presented in chapter <Deployment of Perspectives>.) It is apt to model and help understand what other methods cannot. It is presented by using geometric animations that can be related to a particular kind of daily life gesturing we use in speaking of stress pressure, strained activity, or of a restored state of ease, freedom or peaceful *joie de vivre*. The term ‘nexial’ is used in the literature to develop notions of activation and deactivation. (presented in Appendix C, in the <Endnote C5\Nexus, nexial and nexialism>.

This dissertation aims to demonstrate that medical descriptions and strategies of improvement are derived *under* particular, sensory-based ‘perspectival’ views that may be perfectly self-consistent in a domain of application, while mutually inconsistent as general views. For example, a ‘strong reaction’ is a problem in nutritional medicine (eg allergy), but reactive strength is sought by athletes and in sports medicine, and strong effects (or fast, obvious) on the body or brain are prized in general medicine. Each view is logically self-consistent, valid and useful in its field (explanations, aims and values consistent with practical actions and observations), but together, as a general approach, they cause paradox and major questions concerning dosage and timing, but also high risks in the application of amino-acid ‘loading’ (leading to regulation of product sales).

Not only that, they also place health *inside* a systemic framing of ‘the body’ (or body-mind) that correlates with the appearance of limits and occurrence of ‘boundary conditions’ (for example, emergency or critical threshold). This is not taken into account in our understanding of health and of the low-grade syndromes studied here (nor in developments in fields studying other objects). Some of the characteristics of such syndromes will be shown to derive from the systems of representation themselves, and the strategies for healing and improvement practices that they prescribe, rather than from an intrinsic characteristic of the individual affected (or of environmental exposures, toxic or beneficial). For example, many ‘symptoms’ in *low-grade* chronic ‘illness’ correspond to *damaging* effects of such dosage and timing, or critical thresholds and ‘state of alert’, etc., which appear under
lifestyle pressures normally valued. Without the positive evaluation of such directive pressures, the condition is no longer devalued as an ‘illness’. So the organisation of these perspectival explanations and practices is a core issue and is related to ways of ‘valuing’ and formulating.

Another example of problems of representation relates to symptoms of ‘dying’ and ‘risk of death’ as observed and treated in hospitals. They are associated with the idea that a person’s body will or may soon be ‘dead’. A few physiotherapists have confirmed to me that low-grade conditions can display highly similar symptoms (e.g., dry mouth, difficulty swallowing, disturbance from gentle interventions). They are, however, associated with a mere ‘sense of impending doom’, which I apprehend as a sensation of ‘being in-dying’, and which is often interpreted as a ‘belief she is sick’ when ‘really, it’s all in her head’. Yet nutritional science often finds this to be an ‘imbalance in the brain’.

These are just striking examples, out of many, of fundamental problems in both explanation and findings (experimental or experiential) that involve both scientific and human domains. Moreover, these medical examples are only the tip of an iceberg: similar ‘fundamental problems’ exist in philosophy, in physics, in transpersonal psychology, in linguistics, in palaeoarchaeology, and many other fields. The implications of modelling with nexial-topology are global rather than limited to the ecology of health.

As far as my inquiries with other researchers could show, geometric topology does not appear to be used in human sciences (e.g., semiotics, ancient scripts) or even in some life sciences (e.g., salmon life cycle studies), although topography is quite common. Mathematical topology is the basis for much theoretical physics (General Relativity models, rather than quantum physics, are particularly relevant in the present work) and is used in other physical sciences (crystallography, physical palaeoanthropology – for example, learning about human physical growth and disease in prehistory through the patterns of tooth development). The complex developments of the topology of general systems (representing complex processes in point-set defined systems, using statistics, probabilities, and numerical analysis
*calculations*) produce advances in biochemistry, genetics, and computer-based technology such as medical imaging. It also supports engineering-based theorising for sciences of complex dynamic systems, whose results are popular for metaphorical interpretation in the human domain – but this causes problems for transfer of knowledge between the scientific (physical or natural sciences) and human domains (discussed in <Deployment of perspectives>.

The basic form of geometric topology that I use to formalise ‘nexial-topology’ is not ‘mathematised’ and models visually, without measuring the geometric figures, *small* distortion or deformation and the *approach* of boundary conditions, whereas conventionalised topology describes the appearance, occurrence, and repetition of boundary conditions and critical phenomena (See chapter <Deployment of Perspectives>).

This geometric ‘nexial-topology’ is similar to a kind of ‘thinking in image’ that is, it seems, used by mathematicians (see <Endnote C11\ Non-algorithmic>). It also provides an appropriate means for describing *formally* a ‘native’ capacity that some of us use in daily life, and which I associated, at first, with common notions of intuition and instinct. To me, it is a daily-life cognition style correlated with a certain ‘state of health’ (eg not accessible in states of ‘alert’). It is a very practical ‘lived’ animated geometry that ‘shows’ the same kind of properties as those described by topology.

The properties and effects modelled in this dissertation have been discovered through empirical observation, with experimentation helping to find rules, and intellectual analysis helping to find names and existing explanations. My fortuitous discovery of topology while critically examining definitions in various fields (and subsequently of its various definitions and interpretations) allowed me to find partial ways of expressing the properties and rules I found. It also provided a precise way of formulating this ‘native capacity’ as a process of ‘gauging’ an undifferentiated situation with ‘global’ properties (in the vocabulary of humanities, ‘non-local’ in the jargon of physics). This gauging neither evaluates nor measures, but rather ‘models’ by imaging how the situation is ‘shaping’ (this is not
imagination, a mental representation). The imaging is apprehended through a ‘local sensing’ of how the situation ‘presents’ in its immediacy, without separating ‘me-observing-that’, and independently of representations bound to conventions of description such as self and world, or space and time, physical and mental. This method clarified for me the sense of ‘turned around’ in understanding, the sense that the many perspectives, as a whole, somehow ‘turn upside-down’ the conditions they represent. For example the role of the brain-mind in health), and its representations are, in terms of moving geometry, a ‘turned inside-out’ view that also manifests in health sensations and reactions (eg to medical drugs) that we sometimes express by saying, ‘I feel all turned out’, or ‘I am dispersed’.

The usefulness of a geometric method to deal with general notions will become apparent if the reader remembers how much symbolic images are an intimate part of both culture and technology. For example, medicine uses pictures of the body for teaching anatomy, and computer imaging techniques increasingly supports diagnosis. In ancient traditions and modern religions, as in metaphorical discourse or company logos, symbolic and iconic images are everywhere and rule the cultural elements we use to construct both our experience and explanations. Simple images also play a major role in theoretical models (think of the evolutionary tree or ladder), and govern our thinking (eg evolution goes ‘up’, not down). Gestural imaging also accompanies our speech and expresses the usual mimicking of motion, of the shapes of naturalistic objects, of speed and direction, etc. It can also express the changes of shapes, and the ‘shaping’ of a situation (eg when we talk of stressful situations or pain, we might gesture ‘increase’, ‘spinning fast’, ‘loosing ground’ and drowning, or ‘going off track’).

The ‘native capacity’ for ‘gauging’ is a well-known feature of human nature but has, to my knowledge, never yet been the object of a formal or technical description that is not subject to perspectival conventions. For example, calling it ‘intuition’ denotes a primacy of mind, calling it ‘instinct’ denotes a primacy of the animal body of humans, and calling it ‘gut feeling’ denotes an association of physical and mental aspects. It has many other such
names. A description using ‘nexial-topology’ is independent of any such framing of experience (that of a self, an animal body, or an emotional being), and of explanatory conventions. As such, it has the potential of achieving more widespread agreement.

As a method, a crucial advantage of nexial-topology for theoretical modelling is that it offers a much simpler means of modelling ‘deployments’ (such as generation and degeneration) by using only two parameters\(^4\), whereas habitual representations and complex advances of contemporary science require many variables that are dependent on conventionalisation. This method also avoids many paradoxes and pitfalls of philosophical and scientific ‘fundamental problems’ such as those of measurement, value, infinite regression, the excluded middle, or the ‘chicken and egg problem’. Much is currently being written about the need for ’wild’ models, unitive models, a common ‘new language’, and an understanding the ‘origins’ of the universe, language, agriculture, humans, etc… The present approach, instead, highlights a common change toward ‘advanced’ frameworks in the theories of diverse fields, despite their different vocabularies, contexts and details, a change highly relevant to health. It also correlates with new questions: ‘deeper’, more subtle, specific, detailed, focused, expanded, or broad, etc.). It could reduce their multiplication, as well as the complications introduced by ‘multi-dimensionality’ or ‘many worlds’. It brings out a fundamental symmetry between human and scientific perspectives, which has important functional and structural consequences for experience, and crucial implications for knowledge transfer. It also suggests a different view of ‘wildness’ as ‘undeployed’.

In medicine, this method could make sense more easily of the systemic and metabolic syndromes in various degrees of gravity, without the confusing distinctions introduced by causality, localisation, qualitative specification, quantitative ranges of normality, and complicated naming of clusters of symptoms (or their over-simplification into ‘diseases’).

This claim, which may appear suspiciously sweeping, is expounded progressively through

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\(^4\) Parameters: orienting and activity. These are discussed in depth in chapter <Deployment of Perspectives>; the various ways of parameterisation are discussed in chapter <Many Perspectives>.
the chapters of this thesis. It can be summarised by qualifying the confusing distinctions of ‘deployments’ that do not allow an unfragmented or non-differentiated view, whereas the modelling method introduced here allows both conventionalised, ‘deployed’ perspectives (including integrated), as well as an ‘undeployed’ view that does not rely on focused or expanded discrimination. It evades having to separate or analyse (and synthesise or re-integrate) many aspects of a circumstance (eg a person’s life, mind and body), to locate a cause, or to devalue an original trigger or consequent weakness, in order to value a strength or an improvement. As a result, it supports more immediate ways of dissolving or ‘undoing’ illness and of keeping health on track. This could reduce problems of iatrogenic diseases and collective health consequences that arise from general medical advice, which is shifting (eg concerning dietary fat or sunshine), and the burden on the public health institution due to spreading obesity, chronic illness, degeneration and ageing. This applies to other kinds of circumstances as well.

In both scientific and human domains, two basic notions are at the core of many problems, both practical and in theory: water and gravity. They coalesce in medicine, for example, in weakness of vertebral discs and posture in chronic illness, as an ‘underlying cause’ of many systemic dysfunctions (eg though impairing breath and motions), and in the notion of female nature as ‘gravid’ (the source of the ‘inevitable female problems’ in physical and mental health and related to pregnancy). In the collective realm, they manifest in the ‘forces of inanimate nature’ and the rising issue of water supply and use. The proposed approach sheds light on the one aspect of water that is completely ignored – the involvement of its intrinsic physical properties in shaping the body-brain’s health, behaviour, and the mind. All three aspects are implicated in the human hazy sense of gravity or graveness (in any way the reader cares to interpret these words), and in our endless needs and wants. These drive our chronic and repetitive seeking of all the comfort props of civilisation, which are so wasteful to produce and build.
As a native capacity in daily living, nexial-topologic apprehension helps keep a human life or a world ‘on track’ (conventionally: ‘healthy’, ‘sane’, or ‘thiving’), without involving programming, reconditioning, or learning (learned ideas are necessary to explain the capacity, but not for using it). It makes it easier to care for the body, rather than wait for the sense of emergency or for something to go wrong before visiting the medical profession and require constraining, painful or costly treatment (a rising problem). This is its most important role: to help prevent critical events from occurring at all. Children are medicine’s warning ‘canaries in the mine’, doctors say, because the most or first affected by the spreading of disease (as well as suffering and death, according to ancient myths). The role of certain basic spontaneous behaviours that we normally think random, meaningless, strange, even socially rude, and that have no medical explanation, modern or ancient, could now be understood. For example, looking out the window at school, or the ‘walkabout’ of Aboriginal Australians, are habitually or systematically suppressed by cultural and technological means (eg computer and car). Yet they could alter our fundamental medical views, attitudes to the body’s health, and alleviate the struggles of childhood and teenage years especially.

The format of this dissertation

Images, animations and text, in this dissertation, need to be approached in a new way.

The range of fields examined for this study is wide, and their representations and explanations are complex. The various perspectives envisaged rationalise health and the ‘physical world’ by using various means, and explain their changes through different developmental paths. For example, a skill regarded as ‘evolved’ in one perspective may be considered ‘primitive’ in another, or just one ‘type’ in a third one. The chapters are not numbered hierarchically because any number of sequential rationales or meaningful paradigmatic ‘stories’ could be drawn from the issues addressed in this work, with different evaluations for the same thing. This thesis aims to model something that does not rely on value or on a special viewpoint. It starts from the mosaic of explanations and the patchwork of experiences, organises them into a general landscape, to introduce another way of
apprehending them, more ‘generic’. The account may seem disjointed until a global picture is built in the reader’s mind. Some sections may be difficult to follow because the reader may be taken to unfamiliar territories. On my part, also, I am bound to have failed to come across many relevant and even seminal works in specialised fields, but their general approach would be included, even if through entirely different contexts and vocabularies.

The use of images in this work is varied. Some of the images are abstract representations (models) that manipulate general ideas; others are concrete representations that describe objective facts or experiences. The geometric images and 3-dimensional animations are used in an attempt to visualise certain properties that connect them. A single developing field or space observed may warrant different geometric images to highlight different properties. This may create apparent inconsistencies in the text, which only exist because words represent separate idealisations (generalisations or specifications). Some topologic properties are difficult to explain even with geometry. A live sketching related to particular daily life conditions would make it easier to see implications and how they may overlap. This is not possible in a written account, and so the multi-modal format palliates this by (1) making multiple cross-references to the ‘Book of readings’ and other sections, and (2) by encouraging an intuitive overview of implications through a connection to the reader’s own living situation. The use of animations and Power Point visuals is designed to suggest analogies and metaphors drawn from the reader’s daily life in both its globality and its most subtle details. This may include gestures and sensations, health changes and developments, emotions and ideas, a general sense of one’s life, and even a sense of ‘where the world is going’ and what humans may appear to risk, and to be missing or have lost.

The texts provide explanations and details to link images to the store of knowledge and of experience, and this complicated unavoidably the organisation of the thesis. Each chapter relates to a distinct sphere of knowledge and experience, and ushers the usefulness of images and topology. Inversely, the chapters may also be considered to detail implications of nexial-topologic deployment into field-specific perspectives. Each chapter refers to sections
containing text extracts, Power Point presentations (‘slides’), animations, and other information (in appendices). Among the supporting materials, one particular appendix is included that has an informative role that would not be necessary for a specialised study (see below, Appendix F). These extracts are chosen to point to cross-field patterns, ‘not well understood’ phenomena, and areas neglected, unexplored and unexplained by academia, and save reader frustration in searching the literature for particular texts. The likely unfamiliarity of the reader with at least some of these topics, and the connections made, led to including a fair amount of text in appendices, as a fascicle separate from the thesis, for ease of reference.

I appreciate the attention of the reader and effort at following this unusual contribution.

**Editorial notes**

English is not my first language, and so my writing may sometimes be clumsy, or denote French habits. Some uses, however, are purposeful. Using the analogies of daily life helps to make the images meaningful, independently of explanatory words, whose specialised meanings differ in different fields. This is why a colloquial and ‘global’ meaning (little differentiated, interpretable in various contexts) should be assumed in most cases, rather than suspecting a definition ‘error’ (field bound and specific). Despite my great care, it is one such ‘misinterpretation’ (of the word ‘symmetry’) that led me to understand the topologic meaning of ‘turn-around’, to realise the difference between the discipline of topology and the geometric, non-measured imaging of ‘nexial-topology’. It also such an apparent ‘definition error’ that allows to differentiate the common ‘mathematical’ form of topology used in contemporary sciences, which interpret it in terms of point-set theory and calculations, from the original practice of topology as a geometric discipline, which is simplified in this work for the purpose of formalising non-perspectival modelling.

Small numbers (up to twelve) are, in some parts, written as digits rather than words, in order to make visually more obvious their relevance to the ‘modelling by the Number’ explained in the chapter <Many perspectives>. Some of the most significant literature is cited (author and date) in the chapters, endnotes (Appendix C), and in Appendix F. References (Harvard
system) sometimes include a copyright date of original publication, when relevant in assessing historical development of ideas or of recognised types of experience. The chapters are referred to by name, for context; for example: <Health and illness>, <Many perspectives>, and other sections in a similar way, with indication of appendix letter and number (see below).

**Contents of this dissertation**

- The chapter <Methodology> provides a description of the development of this research. Assuming a reader to some extent unfamiliar with geometric topology, or with the semiotic diversity of traditional symbols and theoretical icons, led me to weave into this description some examples that can clarify notions relevant to the geometric images of topology. Although they lengthen the exposé, they help follow the complex schema (summarised in figure 42) and the several dimensional orders of the diverse research steps taken. The details of inquiries and validation procedures are addressed in the second part of the chapter.

- The notion of validity is treated in a separate small chapter, <Validity and valuing>, which is placed after the chapter <Many perspectives> because it is the result of ‘perspectival analysis’ of the notion of ‘evidence’.

- The chapter <Health & illness> contains an orienting discussion of the works of Hans Selye and Scott Williamson, to introduce the problems of stress and strain, medical theories, and the difficulties due to linguistic expression. Two aspects are discussed in detail: experimental findings concerning the effects of food relative to different ‘health states’ and 3 properties of ‘immunity’ that I have not found described in the literature. The flat map of immunity (figure 43) presents a comparison of views on ‘immunity’, conventional and drawn from nexial-topology. The most important practical findings concerning the body are presented in images, in the Power Point presentation <PPT1\ Body>, and in a summary ‘portrait’ in phenomenological style, in both word and images, in <Conclusions>. Other health issues are only sampled through collections of text extracts in Appendix F and other collections.
• The chapter <Perspectival observation> is a commentary associated with one animation and two experiments for the reader to perform (<B1\ Lever experiment> and <B2\ The 3 Star experiment>). It aims to ‘show’ directly to the reader’s mind, by his or her personal cognitive exploration, certain features of the processes involved in ‘observing’. Performing the experiments will allow the reader to gain an active understanding of the problems I faced in reviewing the many perspectives on health. The animation (<1 Trefoil>) will suggest analogies to the reader and connections to personal experience, which will be useful in following the rest of the dissertation, as a context of application.

• The chapter <Many perspectives> is a summary account of the developments of my theoretical work, using the vocabularies found in theories, experiential descriptions, and my own ways of formulating things. The aim is not an exhaustive review, but to classify perspectives into general schemes: (a) taxonomies based on words, (b) typologies based on the ‘Numbers’ that are apparent in geometric figures and categorisations of some theoretical and philosophical models, and (c) the geometric figure underlying the perspective or model is their general ‘image’, and these general perspectives are not dependent on the context or field of application, world location, or cultural history. Finally, the notion of cultural ‘icon’ is introduced to deal with the diversity of these ‘general images’: the various icons can be represented as a developing series, a progressive geometric deformation, which correlates with shifts in vocabulary and definitions, and semantic drift.

• The chapter <Nexial-topologic deployment of perspectives> is the core of my explanation of ‘nexial-topology’, whose understanding requires the animated visuals, as a modelling method. This presentation is the result of experimenting with various forms of ‘language’ for expression (words, numbers, images). The chapter organises all the perspectives in a global schema of ‘deployment’ that can be understood as combining ‘unfoldment’ and ‘enfoldment’5 into various ‘realities’, with progressive distortion. The

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5 Unfold-enfold: to bring out, spread, develop or grow – and also wrap up, envelop into a folded state (Macquarie dictionary 1981). The typical naturalistic image in Chinese culture is
geometric images and words used here relate to those used in topology (in mathematics and physics) and to the realities they represent. Certain ‘rules of thumb’ governing this ‘deployment’ are presented, and have been noticed in the literature (sample in <F18\ Rules of localisation-extension in the literature>), but not put together. Two forms of nexial-topology are compared graphically, one being a method for describing ‘deployment’, the other being the ‘native gauging’ mentioned above. The differences create totally different images of ‘health’ – one of critical response to external or internal phenomena, in various degrees, the other of ‘ease’ or being ‘unaffected’ (here dubbed ‘proto-health’). One global consequence is expressed through an animation, <Grav-Wave>.

• In the chapter <Ancient perspectivalism, The Earth, & The East>, evidence is gathered for an ancient way of thinking that is generic, multi-perspectivalist. It has habitually been interpreted as an idiosyncratic kind of historical account, or as a ‘syncretism’ with little logic, because it produces a modal rather than linear kind of exposé. Assuming, then, the validity of these texts as sources of organised knowledge, one archaic general model they often review is studied: the ‘4 directions of The Earth’, whose origin can be traced to a less differentiating world model named ‘the East’. The words used in such texts are considered ‘obscure’ (and were already so in archaic times), but have a striking similarity to topologic notions, and have imaged equivalents in several cultures I investigated. A physical and practical interpretation is proposed for some remnants, in archaic texts, of the (probably Neolithic) oral tradition associated with ‘The East’. It is linked to health sensations and body ‘signs’ or ‘signals’ that I observed. Two examples are detailed through text extracts in <F10\ Left-Right> and <F11\ Red>. Such observations do not make sense to modern explanation and even modern common experience has obliterated awareness of them.

• The introductory section <Obscure words and ‘dark saying’> in <Appendix A\ Table 9\ Nexial-topologic vocabulary> is an integral part of the discussion of words and language in this thesis. It is an important element governing the choices made regarding the

that of an acorn growing into a tree, which produces acorns. (Detailed in <Nexial-topologic
communication of the findings of this research. It also summarises a specific study made over two years, directly related to little known work done by Isaac Newton. It led to gathering the examples listed in the long Table 9, crucial to the argument that specific-general languages hide certain notions I call ‘global notions’ that Piaget studied in children. They relate to a topologic understanding, which is habitually ignored because there has been no commonly accepted formal way of explaining it.

A number of ‘hidden’ aspects of culture are mentioned, in these two chapters and one appendix, that are ignored in medicine and are addressed only by highly specialised fields of academic research, only in a fragmented way (see <F13\ San Jiao and Inversion>, <F14\ Mysterious Female>, and <F19\ Published EEs>). One of them has a major impact on definitions of illness: the ‘primary-secondary’ distinction (addressed in <F12\ Mysterious Pass or Place>).

- The <Conclusions> express a set of general implications for various fields, to emphasise that our views of ‘the world’, of what is ‘natural’, ‘life’, ‘human’, and of ‘the body’, have practical, sometimes major, consequences for health and for our daily living. They point out that our reformulations of these views throughout history correspond with widespread recurring fundamental problems that remain unresolved. One aspect is presented in the form of an essential or summary ‘portrait’ in phenomenological style, through both words and an image. It was observed in archaic times already, albeit with less sophisticated vocabulary than today, described as a ‘wasteland’ phenomenon. Its manifestations, both external and internal, are now passed for idiosyncratic or senseless expressions of individual ‘body type’ or personality resulting in seemingly unavoidable chronic or acute ‘illness’ (or both, as studied here), as well as for ‘global warming’ and the apparently uncontrollable, globalised, periodic, breakdowns connected to the ‘dark side’ of ‘human nature’, its ‘body politik’ and ‘systems’ on which rest encultured economies, civilised ecologies, and still ‘fundamental’ problems related to survival, food, and water (and dehydration, whether obvious to hidden).
Supporting materials

- Appendix A contains an introduction and a long table of vocabulary gathered from the literature and is denoted as <Table 9\ Nexial-topologic vocabulary>. Examples are given with quotations from the literature, for context.
- Appendix B contains two experiments for the reader to perform: <B1\ Lever experiment> and <B2 \ The 3 stars experiment>.
- Appendix C discusses a few side issues and definitions in endnotes, with relevant references. For example, <Endnotes C4 \ Topology>, <Endnote C6 \ Core culture>.
- Appendix D gives some examples of my research organisation and techniques (eg <D1\ ‘Ring temperature’ technique>), and some records are provided in <PPT7\ Research notes>.
- Appendix E is denoted in the text as <EEs>, and is a collection of some special experiences and experimental observations: for example, <EE2 \ Looking in the vague>, <EE15 \ Red spot>, <EE17 \ Burning Fire>, <EE18 \ Episode of heart congestion>.
- Appendix F contains a selection of text extracts that is primarily informative but plays several roles. The extracts are reproduced verbatim, and their importance lies in the most general ideas (valid in various fields) and the most specific details (vocabulary, metaphors, and particular experiences). The intent for each section is presented in the introductions, except for three myths (<F1> to <F3>) and the four published ‘EE’ experiences (<F20>), simply reproduced. Some sections also contain a discussion that makes unusual connections between various fields. The sections <F16 \ Variable body> and <F17 \ Anatomy notes> combine text extracts and some of my basic notes, which may be useful for deepening the body topic. Some sections are meant to highlight vocabularies (particularly <F7 \ Landscape vocabulary>), and so certain extracts are incomplete, limited to listing words and parts of sentences, in some degree of context. A number of sections are meant to support a quick scanning of little known areas of knowledge and experience, rather than leave for later a possible investigation of the literature. Summarising them in small endnotes would not show their importance in motivating the use of topology. Commenting on them would be less
effective than letting the reader detect the patterns directly. The sampling in these sections is
necessarily fragmentary, but the extracts are chosen to present several of the major ideas
concerning each topic. Certain subtle, but important, details may also recall unusual aspects
of the reader’s life (they may be recognised).

**Image presentations**

Nine animations, and seven Power Point presentations are provided (on a CD) to enable a
more direct sense of what is described in words. They are summarised visually in <Image-
summaries> at the front of this dissertation, after the table of contents and the beginning lists.
The chapters refer to them by their number and name. For example, animations <1 Trefoil>,
<9 Grav-Wave>, and slides presentations <PPT1 Body>, <PPT2 Models collected>.

- <PPT1 Body> contains some theoretical models, various developments drawn from
physiology and tradition, images of anatomical features of the body, and representations that
track certain crucial health sensations observed. These slides point out some ‘hidden’ aspects
neglected in most forms of medicine. This set makes **global** sense if viewed last, but since
concrete images represent the ‘ground’ of this research, it is useful to consult it earlier. These
slides are supported by two sets of notes <F16\Variable body> and <F17 Anatomy notes>.

- <PPT2 Models collected> comprises a selection, from the literature in various fields, of
general models that use pictures. They are organised by types based on numbers or named
geometrical shapes apparent in the images used (for example, ‘3’ is for a triangle, and ‘cone’
is for a mountain), to highlight the role of iconic imagery in culture and civilisation.

- <PPT3 Geometry of perspectives> uses fundamental notions of geometry to demonstrate
the role of flat, spherical and hyperbolic geometries in our explanations and experiences, and
other expressions such as icons. The geometry represents the fundamental ways we use to
‘put in perspective’ or ‘view’ of what we observe, to ‘frame’ our mental constructions, and
to ‘interpret’ in the brain–mind according to sensory parameters (sensory perception and
‘sensate’ psychological interpretation). These images also relate geometry to general
philosophies and science. One comparative slide hints at a global ‘drift’ or progressive loss often described as ‘residual’ (modern) or ‘remnant’ (archaic).

- <PPT4 Einstein>: contains images strikingly similar but produced by different people, in different places, times, and contexts. The presentation aims to suggest that this way of ‘thinking in images’ (‘thinking’ is not quite an appropriate description) is topologic in nature, and appears ‘non-locally’ in the human mind. It seemingly always produces the same basic range of simple geometric shapes, involved in developments of culture and civilisation.

- <PPT5 Nexial-topologic imaging>: this series gathers, from my records, various images I made to help me understand the fields I surveyed, and my own expression. Drawing to translate the words, descriptions, analogies, and metaphors into graphic properties helped me find underlying similarities in apparently very different approaches.

- <PPT6 Research notes> is a collection of some of my research records.

- <PPT7 Three nexial-topologic rules > is an imaged summary of the three geometric rules of thumb I found in the ‘deployment’ of the perspectives.

- The animations describe certain properties of topologic ‘deployment’ without particular context. Hence, their geometric nature can be interpreted as abstract or concrete, depending on preferential framing. These properties are valid in any applied field (topology is used in many different scientific specialties). They express both ‘directed motion’ and ‘return’, in space, and ‘directive activation/ de-activation’ in a timed framework. These ‘orienting’ properties can be apprehended intuitively, related to a context particular to the viewer (eg ‘my impression of ‘speed of life’) that can be generalised (eg the medical field in this work). They are also felt instinctively in daily life, expressed in gestures that a particular civilised culture immediately ‘translates’ into more conventional formulations. One missing property of ‘boundary’ – the core object of this work –, is a deployment through various stages, into a ‘bubble’, up to a ‘scattering’ (such as mist or dust). Its imaging can only be found in partial representations (eg a drop of water onto a surface, or a jet scattering ‘to all four winds’).

I hope that the images and animations will also make the reading more enjoyable.
Methodology and research process

Research setting and context

In my Masters, I explored social, psycho-spiritual and mental ‘realities’ (both experientially and the theories or philosophies about them, Bouchon 1998). My interest in the ‘creation of reality’ then shifted to a more concrete aspect ‘created’, to what we consider material in daily life, or a ‘physical’ space, and how we represent that. I set out to find out:

Do we 'create reality', as 'New Age' and 'New Paradigm' proponents put it, and if so, how and to what extent do we do that for physical space, including body?

This research aimed to challenge the classic tandem that supports the New Age/Paradigm view, of constructivist explanation and phenomena of developmental experience, both rooted in philosophical traditions about the core role of humans (and their ‘self’) in ‘reality’ (cosmologies/gonies, ‘world models’ – see Endnotes <C6\ Core culture, ‘secret’ traditions>). ¹ ‘Reality’ can be interpreted in several different ways. The ‘physical space’ of physical sciences includes a local or core part, the body (the preferred realm of medicine), and a generalised part, variously called ‘nature’, ‘the environment’, ‘space’, etc. Ecology, studies the ‘natural environment’ (but not the human ‘animal body’), which is often understood as a wilderness sadly seen as little relevant to most people’s daily life, although the study increasingly includes the effects of collective human behaviours on animals and ecosystems. Originally a physical science, it spawned social ecology (Hill 1996), which studies this limited interaction between the environment and people from the human

¹ This is an ‘internal’ view. The correlate ‘external’ tandem of social-construction and ‘shared’ experience is not investigated here because it relates to ‘biosocial’ aspects of the ‘embodied self’ or ‘emotional self’, and cannot illuminate the nature of physical body or reality independently of the human self and its externally visible behaviour.
viewpoint, sometimes also extending to spirituality, ‘sense of place’, and man-made material spaces. Ecology also gave rise to the discipline of environmental medicine, which studies and manipulates the interactions between the human body and the environment (in part man-made: chemical exposure), especially in chronic and stress-related conditions, them. It is related to complementary medicine, which includes ‘natural’, ‘alternative’, and herbal treatments for low-grade conditions and the management of diet and lifestyle. The related ‘nutritional science’ is a technical form of metabolism manipulation involving medical biochemistry, and which derives much of its knowledge from studying physiological strain and deploying effort in athletes (sports medicine). This provided a particularly well suited angle to begin an exploratory study of experience and explanation by focusing my research question on a narrower domain that was becoming relevant to my daily life at the time:

*Do we ‘create’ the physical reality of bodies feeling ill or healthy, to what extent, and how?*

It turned out that considering that ‘we’ cause, trigger, or initiate this in many ways, individually and collectively, is a limited view that makes us central to a generalised ‘the world’ in which we ‘have to survive’. This also involves an expanded view of our representations of an ‘emergent’ reality in which we both ‘create’ wonders of culture and civilisation (or mind and material reality), and need ‘saving’. The narrower research question could not be completely separated from the broader question.

Consequently, a further phase of research widened the question again, using the results of the exploration and mapping phase, to generalise from the conventional notions of physical space/ body and human spaces (eg material, embodied, emotional, etc.) in order to generate a modelling of this process of ‘creation’ of ‘emergent’ realities, as a topologic ‘deployment’ (see Appendix C, <Endnote C4: Topology>). This relates to representations not just of the body and human health, but of all sorts of circumstances that may influence humans physically and mentally, and not just humans.
Naturalistic setting

The involvement of my research adviser, Professor Stuart Hill, with the developments of the 1930’s Peckham Experiment in health ecology (Hill 2004, Stallibrass 1989, Williamson & Pearse 1980) (see chapter <Health and illness>), inspired the choice of a naturalistic setting to support a practical rather than an idealised analysis.

The Peckham Experiment was conducted between 1926 and 1951, at the Pioneer Health Centre, which was specially built in London, to discover non-intrusively the ‘nature of health’. The observation of people in their daily activities focused on biological health and psycho-sociology, and was conducted with as little interference as possible. The researchers found that only 10% of the initial population studied had no diagnosable disease, and that 60% (over the age of five) were diseased but ‘acted like healthy people’, unaware of their condition. ‘They differed conspicuously from the sick [the remaining 30%] in being able to sustain their positions in their work and in society without any professional assistance.’ They believed themselves healthy and, ‘in spite of the disorders found to be present, felt they were fit or in their usual health.’ They ‘remained oblivious of their actual physical state of disorder’ thanks to the clinically well-known process of drawing on the body’s reserves to compensate, but were limited despite being apparently ‘well’. Only 30% were sick and aware of being sick (to no worse degree of severity than the 60%) (Williamson & Pearse p.14-15). This early twentieth century finding is relevant today in Australia, where many are not aware of their condition of diabetes, metabolic syndrome, or of warning signs of other diseases, particularly degenerative conditions.

Following Laughlin, who considers that ‘any theory that fails to ground itself in the empirical reality… of [one's] common experience… is doomed to failure' (Laughlin & Brady 1978 p ix & 1), it seemed that my personal health situation (see <Introduction>) would provide a sound grounding for the study of the issues affecting stress-related, low-grade chronic syndromes. In these syndromes, the Peckham situation is often inverted: patients are aware of being unwell (not necessarily ‘diseased’), but diagnosis is not forthcoming, and others, seeing them objectively, regard them as in apparent good health. The grounding in actual
experience of daily life had also become the best direction to follow for research, after an inquiry into a particular aspect of health – dental health – that I conducted twelve years ago (summary booklet with illustrations, Bouchon 1994, unpublished). After one year of reading and summarising literature concerning periodontitis, and talking to dental surgeons, I had been stopped by the unwillingness of specialists to guide my deeper exploration of nutrition effects and of causal explanations. This unwillingness led me to investigating paradigms and theoretical assumptions, which I studied in my Masters. The physical aspect remained to be explored, together with the fit between accepted explanations and descriptions of health, and my actual experience of illness and of ‘being well’.

**Small changes in illness**

Hill’s (2001) emphasis on ‘small meaningful initiatives’, as well as the low-grade nature and variability of the illnesses studied, oriented the inquiry toward daily life health adaptability and ordinary daily experience. Organic injury, medical emergencies, cures and targeted treatments are the normal object of medicine. Spontaneous remission in grave diseases is now fairly well known (Chopra 1989, Weil 1995), as are special capacities of the brain and mind to trigger healing, and even some extraordinary capacities of the body (Murphy 1992). Although these are accepted as objects of research, their investigation has tended to reinforce the main paradigm challenged by my research question (see *Endnote C1\ New paradigm*). The on-going, small changes in health and degeneration are much less understood or studied, and more likely to produce new understanding than catastrophes and miracles of health. An example in *Extracts F20 – Published ‘Exceptional Experiences’\ Saint Teresa of Avila)* points to the neglected low-grade wasting that can be felt and could be prevented if such strange dreams of looking directly into internal bodily degradation were not interpreted or invalidated (chapter *Validity and Valuing* discusses what is deemed ‘evidence’).
Research frame

The development of the complex methodological plan for this project is summarised in figure 42 (at the end of this chapter, p.69), and is reassessed in <Deployment of perspectives>, in a simpler way. The situation studied in this project involves both a practical problem of health that is not well understood, according to medical literature (see <Extract F4\ Syndromes of instability>), and its basis in the unexplained immediacy of the ‘physical world’ of humans, especially that of the body. This requires a complex methodology to understand different ‘orders’ of expression or organisation within this world, as apprehended both scientifically as the ‘physical’ and humanly as the ‘material’ (including matter, but also the material conditions of daily living). The design and techniques were selected in relation to three basic aspects: (1) theorising, and practical exploration, divided into (2) experiential observation and (3) physical experimentation. The combination of methods includes existing methods and techniques, some extended, with the addition of new ones. The design is emergent to cater for new types of information, and the observation of induced phenomena. The ‘native capacity’ for gauging mentioned in the introduction, at first undefined, is used as a benchmark.

A generalist study

This project is ‘generalist’ (Korzybski 1933, Von Bertalanffy 1968) in its aim of producing a theoretically and empirically based analysis of general notions covering both the domains of human and physical sciences. Yet, the modelling method developed in this project (‘nexial-topology’, expressed through visual maps and animations) is not limited to the general-systemic view. In fact, it is the development of this view, which is now spreading among sciences, and its origin, which are being modelled here.

Integral approach

In keeping with the inclusion of the two domains (physical/ scientific and human), an ‘integral’ methodology (see <Endnote C2\ The term ‘integral’>), which combines quantitative and qualitative methods, also ensures continuity with my previous studies.
Developed in transpersonal psychology, this methodology (Braud 1998 chapt.3) allows the researcher to make observations from both objective and subjective viewpoints, and encourages a wide-ranging, relevant cross-field literature review (see <Extract F19\ Integral Inquiry (summary)>). The understanding sought, however, does not concern the mind, consciousness, and the ‘highest’ human potential (ibid. p.37), but rather the prosaic material world of everyday life and the health of the physical body.

**Radical empirical observation**

The research tradition that developed the integral paradigm claims its roots in the ‘radical empirical’ stance of William James (1912 pp.39-91). This provides an added ‘depth’ by opening a wider range to observation, not only mental: the word ‘empirical’ does not exclude the body. Special experiences can be included, such as spiritual experience (Hart, Nelson & Puhakka 1997, Krippner 2000a), ‘Exceptional Experiences’ (White 1995 & 1998), parapsychology (Tart 1972) and ‘anomalous’ experience (PEAR 2002), spontaneous healing (Weil 1997), but also anything unusual. This ‘unusual’ takes here the form of ‘induced phenomena’ (see below), aspects of health no longer described in medical literature, and unexplained lifeworld events (see <Endnote C3\ Special experiences and the unexplained>).

The open range of observation can also be understood as a non-focused way of looking at ‘reality’, an ‘aperspectival’ view, or ‘natural awareness’ (Tulku 1976 & 1977), or a ‘seeing’ what is ‘actually’ there. This can counter the habit of giving observations almost immediately a form according to conventions of experience such as space and time, or objective and subjective self-world boundaries. Thus, perceptual or cognitive constructions can be studied in themselves, as well as the very process of scientific observation (Rubinstein, Laughlin & McManus 1984).

Techniques for ‘direct’ observation include ‘mature meditation’ (Laughlin 1990) and other meditation and intuitive techniques. However, I mostly used Husserl’s ‘bracketing’ (Husserl 1931), a method of philosophical inquiry, consisting in suspending judgment and subjectivity. I extended it to suspending also ‘objectivation’ (or reification) of the observed.
This radical stance aims to obtain a 'fresh eye' view on the question and health situation studied, and to challenge notions of 'evidence' (discussed in chapter <Validity & valuing>).

**Problems of definition**

The notions of ‘cross-field’, and ‘integration’, are somewhat confusing. ‘Cross-field’ studies are mostly interpreted as multi-disciplinary research performed by collaborative teams, and producing ‘integrative’ results that are relevant to all members and their specialised fields. I did not perceive the term in the same way at the outset of this project. In the same vein, my understanding of the words ‘general’, ‘generalist’, and ‘general system’ was different from others’ understanding. The word ‘general’ is often used interchangeably with the word ‘generic’, and does have a common root in *genus, genera*, but I understood them as ‘not specific’, valid ‘in general’. The problem is not just mine, and is far from new. It is echoed in the distinction of applied versus fundamental research (underlying all specialised fields), which aim respectively to produce ‘innovations’ (eg techniques, technological applications), as opposed to fundamental ‘innovation’ in knowledge, method, or experimental discovery. As it turned out, this singular-plural difference is characteristic of very different perspectives that also are symmetric. It is of particular importance for the current academic development of general-systemic and multi-disciplinary research and, in particular, for defining the methodological approach chosen here.

To me, ‘general’ and ‘integral’ qualified two aspects of the same body of understanding, one scientific or physical, the other human or mental. Adding the blinkers-views of the many specialised disciplines of both domains would only produce an additive picture of great detail, which we already have, and would only refine, without taking a new viewpoint. It yields the professed lack of understanding of chronic illness syndromes. Questions about the ‘physical reality’ (and the body, and senses) perceived by humans have been debated throughout history, and answers remain controversial. The formative influences of Wilber (1977, 1985, 1996), Stace (1960, 2001) Feuerstein (1992, Feuerstein et al. 1995), combined with my previous studies, had convinced me that the ways of philosophical, scientific and mystic inquiries into the ‘physical’, *used separately*, are based on sets of ontologically
biased, and too specific, methods. They only result in disagreements concerning what the
‘physical’ world and body are and where they come from. This is how I approached my
methodology.

(1) I had to exclude nothing from the field of study:

To be radical, an empiricism must neither admit into its constructions any element that is
not directly experienced, nor exclude from them any element that is directly experienced.’
(James 1912 p.42).

(2) to approach the field wholistically (both physical world and body)

(3) find a less disjointed, fragmentary or differentiating way of looking at it

(4) and produce something more grounded in daily life and practically applicable to physical

health.

**Choice of research design: experimentation and experience**

‘Direct’ observation is a term relative to experience, and it comes from the human sciences.
Empiricism is a scientific term relative to experimentation, to the notions of being objective
and dealing with ‘facts’. To exclude neither, an exploration of depth can combine observing
experience as it arises (or disappears) and experimenting with its physical basis.

**Experience: self-as-subject**

Observing (for instance the mental model of the ‘embodied’ self and the cognitive
construction of the perceptual body schema) is difficult to study vicariously through other
people as subjects, and through self-reports that risk possible misinterpretation. A six-months
search for other subjects, observers who would be subtle enough, and be willing to challenge
their ontology, failed, partly due to this researcher’s incapacitation and constraints. The
obvious option was then a self-as-subject design (Varela & Shear 1999, Hut 1999, Ellis &
Bochner 2000).

**Pitfalls of self-as-subject design**

Positivist science considers subjectivity as an unreliable ‘surface’, objectivity being more
accurate, fundamental, or real. In some human sciences, on the other hand, the ‘self’ or
spiritual ‘subject’ tends to be considered ‘deeper’ than reified objectivity, the self being ‘the
user of one’s own cognitions, of intentions and doings… of one’s own mind… of muscle…” (Varela & Shear 1999). This style of observation is used in ‘first-person’ methodology (ibid.), which includes some forms of phenomenology, and it can help understand the role of language in apprehending the body and the interaction between mind and body. The role of ‘discourse’ in the biosocial interaction is outside the range of this study, which does not review literature concerning ‘external’ aspects (see pages 33 and 57 below.) The role of language and words, instead, is discussed. Using oneself as a subject of experience, as the self that is at the centre of a life-story and a medical case has, however, several pitfalls: subjectivity, linguistic interpretations, and biased view:

‘Often, cases are… accounts of important factors as self-perceived and self-interpreted… There are possibilities of subjective distortions… resulting from biased recall, observation, or reporting.’ (Braud 1998 p.280)

This can be offset by studying cognitive processes in the researcher’s mind and brain, approaching ‘science as a cognitive process’ (Rubinstein, Laughlin & McManus 1984)

‘to integrate our understanding of consciousness, culture and brain in a single perspective… simultaneously neurobiological, phenomenological and sociocultural, […] First and foremost, we require that any phenomenon be treated with reference to the structures of the body, especially the neural structures producing it, as well as the sociocultural conditioning, the phenomenon and the experiential dimensions that inform the phenomenon. […] One point to be drawn from all this is that the human brain is inherently mystical; that is, the human brain is driven by its own inherent structure to know the hidden.’ (Miller 2002 – This notion of ‘hidden’ turned out to be a major element in the present work, relevant to topology).

Even if they are considered as sources of functional consciousness, the brain and ‘structures’ of body are a drastic reduction of physical existence. I was interested in the ‘workings’ of the body-brain system, in relation to mind, experience, and other aspects of ‘existence’. I also wanted to explore the origin of the object ‘body’ as an element of material space, not just of the mental space (eg perceptual body schema) creating the ‘body’ or representing it.
Experimentation: single-subject

The converse approach, the scientific way of experimenting with the physical and matter, is external, usually separating researcher from subjects that are objects of research. I could find no suitable subjects interested in internal variations that are physical rather than psycho-emotional or cognitive, and so the single-subject seemed an option. The ‘approach… is useful when few participants are available’ (Braud 1998 p.273). My early realisation that drugs for the body could create violent reactions, unwilled but with unwanted effects on the mind, and could, on the other hand, compensate for stress as a whole in a way that precludes its study, had me turn to ‘alternative’ treatments and nutrition. The plethora of sweeping claims made for them suggested that effects were probably different for different individuals and for different states of health. This required that I test them for myself to find out the actual effects for chronic conditions in a case like mine, and compare with medical reports.

The single-subject design allows repetitive experimentation, separately for different inputs, to detect short-term effects, and to study the reactions and extremes of both body and mind—a crucial aspect of a stress-related condition.

Pitfalls of single-subject design

This design is mostly used in the behavioural tradition, and can be superficial, if an experiential ‘depth’ is not included: both are needed in this study. Braud mentions another weakness of this design:

‘There may be difficulties with shifting baselines; non-reversible baselines; and residual after-effects of applying, withdrawing, or reversing variables.’ (Braud 1998 p.273)

This is, in fact, what made the single-case design attractive, because it could bring to light these very characteristics, which are normally considered an impediment, are not clearly visible, and also are not studied purposefully. For example, the side-effects of treatments, sometimes unclear for a long time, as well as the general baseline that we call ‘health’, in both medical and social terms, and which relies on standards of normality, are both of interest for chronic conditions. This very baseline is unstable in low-grade chronic syndromes (eg recurring periods with allergic reactions to normally innocuous substances
and conditions, with periods in which they cause no reaction). This behavioural approach highlighted, for example, an inversion between conventional medicine, which considers certain conditions irreversible, and nutritional and alternative medicines that find them reversible (as did I). Another advantage is to include directly behaviours such as ‘induced’ phenomena that cannot be construed as voluntary or intentional (even ‘subconscious’), without the difficulty that a subjective viewpoint needs to name some psychologically external source of intent or will, if none is found internally. The simplest kind is an ‘induced’ behaviour that does not appear to be a ‘reaction’ caused by something in particular nor to result from any special ‘drive’: Allergies are often part of multi-factorial syndromes, but the term sometimes becomes rather inadequate (for example, a ‘water allergy’).

The combination of self-as-subject and a pointed single-subject experimentation produces a breadth of data and is not a rare choice in medical fields. There is a long tradition of such self-experimentation among health professionals, doctors (eg Chopra 1989, Grof 1987, Khalsa 1999) and physiotherapists (see list in section ‘Experimental tests’ below).

I would add one more pitfall to the single-subject design, especially in its behavioural form. Mental phenomena can be interpreted in the reduced form of a ‘behaviour of the brain’ (mind as ‘epiphenomenon’ of the brain or of physical matter), to which much psychology reacts with opposite perspectives. ‘Behaviour’ however, is a good medium to reach operational understanding of ‘how things work’, and cognition a good medium to reach connective understanding of perspectives, general or specific. A deeper problem is that body can also be interpreted as an underlying core of reality, the source or the resulting ‘manifestation’ of mental realities, and physical reality as a concretion or aggregation of ‘Mind’. It is struggling with this that led me to choosing the research design described next, and to the nexial-topology of a ‘place’ that is not reified as either physical or mental, body or self, nor an integration of the two. (See further discussion in <A global field accessed locally>, p. 49.)
An experimental-experiential ‘local-case’ design

A combined experimental-experiential design, with ‘radical’ observation, enabled me to deconstruct the subject-self as well as the object ‘body-brain’, and their behaviour (normal or not). Observations could include the body, brain, and mind, in conjunction with both present and absent treatments (including nutrition, exercise, sleep, etc.). The term ‘behaviour’ may be understood in the mental and social terms of a self (eg externally visible ‘personal’ behaviour and internal functions such as cognitive activity and subjective psychology). It may also be understood in the physical terms of the body (eg externally visible behaviour such as symptoms or vital activity such as breathing or ‘self-care’ activity, and internal operations related to physiology, and metabolism). Yet another meaning involves subtle sensations related to the anatomy of both body and brain, even if they are not objectively measurable or are difficult to describe in words (and therefore difficult to report). All these behaviours can be viewed as characteristics that belong to the individual. Nevertheless, ‘behaviour’ is apprehended here in a broader way, as a ‘state’ of health-sanity, including all these ‘workings’ which are not necessarily individual (eg ethnic-related genetic tendencies). A state can be individual (eg a ‘stress state’ or an ‘altered state of consciousness’ [Tart 1990]), but also collectively ‘human’ (eg civilised characteristics of ‘normal’ health). Such a global state has general characteristics that affect health states in individuals, and their ‘lifeworld’ (a term introduced by Husserl). Such is the case for the general definition of ‘normal health’, the definition of which is a major difficulty in the medical treatment of chronic illness.

Over a long period of research engagement (eight years for this study), several such states came under observation and were studied. For example, certain long-term side effects of general ways of treating the body (eg sedentary living, using pain killers, purified medical drugs, processed foods, constant mental and sensory focus), and patterns in the shifts of baseline, appeared to affect health (eg effect of intense sedentary ‘work-style’ on eyesight and on proneness to systemic inflammation). As used here, the term ‘local’, therefore, covers generically complex aspects that involve locally a certain case and subject (the health of the
person-self-body and the experiential lifeworld of this researcher). It also involves global properties that are broader than their mere expression in the particular local-case. They need not be unilaterally attributed to the ‘local expression’ in this case and subject, which was chosen because it was the most convenient and appropriate to study this process of expression. With this approach, I aimed to deconstruct the entire notion of ‘health’ and that of ‘body’, and to understand how the health of a local body (human or not) is influenced by the global properties of the ‘physical-material world of humans’ (including bodies), whatever this might turn out to mean. This approach helped me understand what those who prescribe or give treatments mean by a ‘healthy body’, as opposed to ‘disease’ and a ‘sickness behaviour’, to find out what it was that I sensed as ‘off track’ yet not quite ‘sick’ or diseased. (I refer to subtle indicators of ‘early change’, even before ‘subclinical’ condition, ‘pre-condition’, or medical ‘risk’.)

**Pitfalls of ‘local-case’ design**

The main difficulties with this double design are (a) the capacity for generalisation of specific effects (eg of different baselines) and, (b) despite the elimination of both objective assumptions and subjective bias, the ‘orienting’ that arises from the local tool of observation – the ‘human instrument’ (body-mind), rooted in its propensity to rely on its ‘human’ mind and brain more than its physical or animal nature. These are addressed in several ways, discussed below and in the chapters <Validity & valuing>, and <Conclusions>.

**A broad literature review**

Low-grade syndromes involve both individual and collective issues, across both domains of physical and human sciences, as the words *medicine* and *health* denote, and so the literature review must be broad. It covers sciences of the body (and techniques), theories (of health and in other spheres), the variations of experience, as reported formally, but also as recounted in informal ways. It also extends to abstract areas such as models and symbols, complex sciences, and as far back as the earliest archaic writings (sacred texts and myths). The scope is further detailed below, but the citations necessarily represent only a partial sampling.
The process of research in Phase one

This research is characterised by repetition (eg in experiments and in theoretical abstraction) and cycling, which can be formulated dynamically and statically as the following three ongoing processes illustrate.

**A-‘Experiential correlates’ in ‘Soma-Analysis’**

In the observation of experience (human domain), one goal was to correlate the three modes of observation of the integral approach: objective measures (from medical and other tests); subjective self-assessment of the experience of health, body, cognitive effects (eg concentration, short term memory), but also events in the lifeworld (eg stressful event, or changes in socio-material living conditions); and ‘direct’ observations of the body-mind, including sensations and perception. Details of these correlates (objective/physical, subjective/mental and direct/lifeworld) are provided below in the section <Specific methods and techniques – Phase one>.

As my techniques became refined, physical internal sensation became differentiated into many features. They were all there from the start, but not formulated separately until I had found a vocabulary and imagery to differentiate them. One of the most persistent observations to appear in the experiential correlates is the recursive sensation of swelling, which is known in medicine under various names at various degrees of gravity.

**B-Triangulation in experimentation**

In the scientific domain, I studied the body system, but not only this. The generalist approach aims to triangulate, in experimentation, the behaviours of:

(a) the specific or individual system we call the ‘physical body’;

(b) the general, collective arena or world system we call ‘physical world’ (man-made and wilderness);

(c) the wholistic material sphere of living, which includes the individual body, food, lifestyle conditions, machines and other artefacts, etc.
This triangulation allows to include all sorts of practices regarding the body, models of it, and worldviews that do not fit within academic standards of validity, and yet do exist in human experience and explanation of physicality or spatiality. The correlates and triangulation enabled me to make unusual connections. For example, abdominal swelling is a known feature in medicine, whatever the cause, whatever the evaluation (eg normal or abnormal), and is a feature commonly noticed in daily life:

1. the Italian matron becoming fat with age, including a large swollen belly,
2. a woman’s pre-menstrual distended abdomen from ‘water retention’,
3. the huge belly of a malnourished child in Africa,
4. an older man’s ‘normal’ potbelly, called in Australia a ‘beer belly’,

This strategy allowed me to include experiences (and their explanations) that are not generally considered part of what is relevant to medicine, and yet still involve standards of normality.

5. the ‘beautiful round belly’ of a male mystic yogi practicing samadhi daily,
6. the round belly of a normal child, supposed to flatten with the onset of puberty.

Neither the medical nor other literatures seem to make the connection between these particular examples of a general physical feature of the body, preferring a variety of explanations that are mutually inconsistent. Experimentation with stimulating foods and levels of activity allowed me to map out the appearance and disappearance of this feature (swelling and the stopping of it), and correlate with the general condition of the lifeworld. Other such features or properties occur in other areas and may be considered as blind spots for conventionalised perspectives.

**C-Cycling between abstract and concrete steps of research**

Theory and practice (experiment and experience) have an equal role in this project, and the research work cycles between the theory and practice, constantly comparing experimental observations with experiential explorations of other’s viewpoints. In two methodologies from which I borrowed, Naturalistic Inquiry (Lincoln & Guba 1985) and Grounded Theory (Charmaz 2000), the research process goes through cycles between abstract and concrete
work, ‘until redundancy is achieved, the theory is stabilised’ (Lincoln & Guba 1985 p.188) (or ‘saturated’). Here, the cycling is between theorising and practical activities (i.e. experiment-experience), and they stabilise into ‘perspectives’ that include explanations and experiences, with an unformulated foundation in observed physical ‘self-evidence’. The cycles of deconstruction-reconstruction produced coherent frameworks (grounded theory ‘saturation’) three times:

(a) an analysis of general perspectives based on two analytical fundamental parameters, which allowed the formalisation of the native animated geometry as ‘nexial-topology’ and the discovery of animations made by topologists,

(b) a topographic mapping of the perspectives, using flat images, which presented the basic perspectives and complex models deemed ‘more complete’ or ‘best fit’ for the common reality of daily life, as a ‘surface spreading’ phenomenon, despite the human ‘depth’, and

(c) a full modelling (concepts and imaging, and also experienced) of their ‘topologic deployment’ (represented as ‘unfolding’ and ‘enfolding’ see <Nexial-topologic deployment>), related to critical and boundary phenomena, and repetition. [The scientific notion of ‘localisation’ in a space and the philosophical term ‘extension’ seem equivalent notions, as is the naturalistic image of the acorn.]

This modelling method is, itself, the deployed form of nexial-topology. (This notion will become clearer in the course of reading the thesis.) The analysis, mapping, and modelling are consistent with each other, although in three orders of complexity, and they have the same domain of application, different from that of the native gauging (undeployed nexial-topology), and with different implications, for health in particular. The overall research strategy in Phase one is, on one hand, analytical and aiming to classification and mapping, aiming at ‘circumnavigating the perspectives’ (explained below), and on the other hand comparative.

CircumNavigating the perspectives

These strategies can be summarised in the idea of ‘circum-navigation’. The entire Phase one explores systematically and separately the various perspectives, in their various forms. This
allowed me to experiment with (a) many explanations, building them into a kind of meta-
review of models, specific and general, and with (b) many experiential styles I read or heard
about, including some that are not familiar to me, and which I found harder to experience (eg
homeopathic effects, ‘circulating energies’). In both cases, I always compared these
perspectives with my ‘direct’ observations of the material-physical sphere as I could ‘see’ it
locally (normal detection and intuitive imaging – think of the expression, “Oh, I see…”).
The various techniques used are tools to experiment with the diverse epistemies and their
models of the physical body and its health, and to explore systematically many particular
perspectives, which I classified in taxonomies and typologies. The resulting categories are
combined sets of explanation-experience, which I called ‘general perspectives’. They are
worldviews, world-models, meta-models, and are consistent with normal living in society.
They are also mutually consistent in that they have a common basis in the unchallenged self-
evidence of physical ontology. However, these frameworks raised more questions about
details, anomalies and limits than they answered, and addressed problems of validity and
researcher bias only partially. The methodological plan of Phase one brought out the self-
consistency of these world-models and sets or types of explanation-experience. The research
explored them in a progression from one general perspective (and its specific sub-
perspectives) to another, eventually coming back to square one, and restarting another cycle.
This is what I called ‘circum-navigating’ the perspectives, and it compensates for any
perspectival bias on the researcher’s part. Unfortunately, this keeps repeating itself, going
around in circles. (This feature explains some problems of not reaching ‘saturation’ in
grounded theory). This ushered in Phase two of the research, thanks to the emergent design.

The process of research in Phase two

Emergent data & methods

In both Naturalistic and Grounded Theory methodologies, the design is ‘emergent’: new data
(or forms of) appear during the cycling, and, in Naturalistic Inquiry, the new data types
require new analytical techniques. Inevitably, new forms of information appear (eg
dimensionality of abstract or meta-models, and simple geometry), but also new facts that do
not fit with the frameworks built (eg anomalies of experience, limit cases in explanation,
extremes in my observations, or the unexplained instability of the syndromes studied). The
literature review must extend to new areas at each cycle. The particular techniques to explore
them experimentally and experientially have to also change to match the new information
types as they emerge:

‘Too often, researchers cling to a single method or to a small number of methods... that
may not be the most appropriate for addressing the issues at hand.’ […] ‘The integral
inquirer favours… integration, and discerning discrimination… choosing particular tools
for particular purposes —… from among a large number of tools provided by different
paradigms, … [and which] are more or less appropriate to different problems or
purposes.’ (Braud 1998 pp.36 & 67)

Each new stage still uses previous methods, but adds new ones to the panoply. The tools are
also transferred from one sphere of research to another. For example ‘gauging’ techniques
(see below) are derived from physical experimentation, but are also adapted for theorising.
For example, from using words to classify specialised theories and experiential styles in
Phase one, the analysis expands, in Phase two, to collecting theoretical and philosophical
schemas and to using the gauging techniques to ‘place’ these general perspectives in an
overall map.

The notion of an ‘emergent’ research design is based on the idea of inductive reasoning to
account for new data. In this case, the theorising does not seek a better explanation: it simply
consists in creating classifications (taxonomies and typologies in Phase one, an overall
scheme in Phase two). There is no inductive reasoning; instead a number of phenomena
induced in relation to the physical ‘state’ are observed, that have to be part of the facts
explained by both theories and experiential styles, but are ignored by dominant perspectives.
This prevents the perspectival mapping from being considered complete without exploring
these induced and marginal phenomena.
Making use of induced phenomena

Concurrently with the systematic work, a number of induced phenomena kept ‘happening’. Some of these unintended phenomena are listed below. Their occurrence challenged the completeness of the models I found and made and provided a basis for comparison, to gauge the adequacy of the models to the direct observations. I also explored the common assumption of some ‘external agency’ that drives the ‘inducing’ (see in particular <Endnote C8\ Spontaneous Yoga>), and found an unusual way of accounting for them (through ‘global’ or ‘non-local’ properties, defined in chapter <Nexial-topologic deployment>). These induced phenomena guided the cycling of deconstruction of general knowledge and experience, as well as the re-starting of construction (eg shifting from the simpler models to more complex models, from perspectival analysis to topology). Some of the phenomena, intellectual in nature (eg alliteration, iconic imaging of worded descriptions, some of which are included in the Power Point presentations), guided more directly the later stages of the theoretical study, and even suggested physical tests in the earlier stages.

Gauging techniques (spatial topography)

Phase two relies on geometric techniques of spatial ‘gauging’ that I devised for physical observation: topographic patterns, nexial activities or movements (details below). These put in focus the importance of general properties such as ‘swelling’ or ‘spreading’, in their spatial and physical expressions. I studied, for example, the sensation of ‘swelling’, where it is located (eg eyelids, fingers, belly), and its reverse, ‘shrinking’ (eg the sensation of a dry brain or of wasting of the muscles in fingers). I observed its changes or activity, how it arises, spreads, and disappears (eg does it appear to have a source or an end location?, Is there a clear path or surface spreading in between, such as moving from one finger to another, or from head down to body or from body-up?), and its time-correlation with other events (eg any external food triggers, or relation to psychological stress and the related internal toxic biochemical metabolites? Any synchronicity with unforeseen, unprovoked, coincidental life problems to deal with or social survival to cope with?). One of the most simple technique involves noticing swelling on the fingers where I wear a ring. (more such
These techniques were also applied to the theoretical work on perspectives, since these can be ‘placed’ topographically in ‘maps’ and related to human and physical ‘spaces’. For example, ‘swelling’ exists in psychological self-aggrandisement, in the global economy (swelling profits, globalisation), in civilisation (building ever bigger), in linguistic and culture (thick dictionaries or phone books), and other areas. Something that ‘spins-up’ also increases in size and swells: for example, I traced many linguistic expressions of this property back to a pre-archaic form called ‘Wind’ (in chapter <Ancient perspectivalism, The Earth, & The East>). I considered ‘swelling’ and other such properties first as geometric or topographic properties that change. This allowed later to approach them as ‘global notions’ (see <Ancient Perspectivalism>) related to distortion, and then as ‘non-local’ topologic properties. No longer differentiating their manifestations in the various contexts (such as systems in cultural constructions of health or aspects of a person’s sanity and safety), they can be viewed as simply ‘expressed’ in physical and human domains. Thus, imaging that arises from physical sensation was found capable of arising and changing in the same ways from any field of the two domains, two ‘spaces’. The changing expressions developed in these spaces, some found with this spatial gauging technique, are modelled through topologic properties of a non-local ‘topologic space’, which is also a ‘global notion’ less differentiated than ‘reality/ies’ and ‘physical space’.

**Tracking ends and tracing origins**

In Phase two the most widespread models that ‘best fit’ normal daily experience and concepts were no longer taken into account because they leave the syndromes studied unexplained and often consider them unreal. The aim was, instead, to understand how we come to have the general ‘perspectives’ that invalidate these syndromes, and ways of being, and to understand their general properties, by:

(1) tracking their developments (one-way) into specific and generalised forms, and

(2) ‘tracing back to origins’ (the other way) their speciation, differentiation, and individuations through small clues.
The inversion between these two will be most easily understood through viewing the images and animations included in the dissertation. The animations and Power Point presentations are included in the attached CD disc (list and summary in images after the table of contents). In general, and in research in particular, we consider certain aspects of physico-mental life as ‘self-evident’, and we presuppose them when observing. For example, most people assume small discomforts to be ‘natural’ (and alternative medicine writings say this need not be so – for example, pain in heels,). Another example is researcher ‘bias’ (here considered to be perspective-based; what I call ‘researcher orienting’ is also discussed in chapter <Validity and valuing>). To challenge this, I analysed the properties not only in my physical experience, but also in the literature (both archaic and modern) and other information. The analysis was done in 3 ways [thus matching a 3-modal logic], with techniques drawn organically from cultural habits: (a) trying to understand the essential meaning of words (looking in a dictionary, or asking someone ‘what it really means’); (b) habit of looking for a ‘development’ and creating imaged analogies for it, in words and gesture (eg the arrow of time [throwing the hand forward], tree of evolution [spreading arms, hands and fingers ‘up and out’], or expanded ballon of ‘greater wholes’ [widening two facing cupped hands]); (c) using small clues ‘left by history’ to understand how things came to be the way they are (spatial traces, time imprints, ‘forensic’ clues). I found that these habits, transferred to the domain of research, have been described as formal, systematic methods and this confirmed the usefulness of this phase. The closest ones are:

(a) **Etymology** (Gebser 1985 pp.123-129) and **philology** (Romanes 1888 pp.240-245): Tracking words from the languages accessible to me (English, French, Greek, Latin) to their Indo-European roots, down to one-syllable roots; and sound variations of Chinese one-character signs. I included nexial and topographic means in my tools, to find analogies and correlations. I then used nexial-topology to retrace their progression from ‘core’ meanings to altered meanings (eg character shaping in Chinese, and sound shifts in Western languages). Feuerstein, Kak and Frawley (1995 p.52, 56-7) warn of intellectual risks in attributing reality
to the notions derived from very primitive roots. Considering a ‘topologic’ space (rather than real or natural) avoids this.

**b) Imaginal deployment** (Newton 1994):

Tracking stages of development of ancient and archaic meanings in the cryptic notions found in Chinese alchemy and biblical prophetic texts, into multi-perspectives and various spaces (physical-‘natural’ and material-‘real’), and into eschatology. I worked with older texts than Newton (the oldest sections of the Hebrew Old Testament – as dated by agreement of a cross section of biblical historians –, rather than ‘Revelations’ and the Christian New Testament), but came to the same way of construing the progression of semantic changes as an ordinal development into increasingly multiple perspective-based variations. I retraced their origin from archaic remnants of (probably Neolithic) meanings (see <Ancient perspectivalism>). My study differs from Newton’s also in that the tracking was also done on sensations arising from experiments with nutrition and cognition. The large table <Nexial-topologic vocabulary> in appendix A collates some words from the literature that are strikingly similar to those I used for description in the ‘patient illness talk’ style (before I was aware of that literature). These words are unusual in that they denote an underlying apprehension of topologic properties.

**c) Cryptic ‘clues’ left behind by history** (Ginzburg 1989) in the core symbols of culture and learning: Seeking clues, in the multiplicity of the symbols images of arcane traditions (see <Endnote C6\ Core culture>), for general geometric shapes, and detecting them also in modern general, or ‘advanced’ scientific models. I finally construed them as topologic projections (geometric projections of one-sided notions of progression, development, evolution, growth, unfoldment or enfoldment, etc.)

Eliade’s work (1961 & 1978), Piagetian genetic epistemology, and seeing science as a cognitive process (Rubinstein, Laughlin & McManus 1984) particularly influenced the way I approached this, externally through comparative religion and internally through cognition.

Two of them also provided confirmations *a posteriori* (Eliade 1954, Piaget 1929), although one aspect of my findings is different (one could say ‘goes farther back in time’).
The overall research strategy in Phase two is, on the one hand, to track forward the progression of all our general perspectives (e.g., evolution, development, growth, progression) and, on the other hand, to trace backward their ‘origination’, using three techniques. The result of these origins and ends, is our complex views and ways of ‘completion’, (including health optimisations such as anti-ageing strategies).

In Phase two, I compared these ‘completion’ models graphically, to direct observation (using the ‘gauging’ of nexial-topology) of the induced phenomena, sensations, and impressions of both generation and degeneration, in the physical realm. In the example of ‘swelling’, the native ‘gauging’ viewed this property as producing a surface that ‘spreads’, and that eventually closes itself like a ‘complete’ bubble, this being very different from not swelling in the first place. This benchmark native gauging brings out a crucial topologic difference that has implications for health and other areas.

**Epistemic iteration**

The tracking forward and tracing backward of perspectives produces different views and ways of explanation-experience and, altogether, different ontologies (e.g., models of ‘completion’ or ‘perfection’). If viewed as a full or ‘complete’ development, they also constitute a successive unfolding and refolding, which produces reformulations. This is characteristic of the entire research, as well as of the general perspectives. ‘Advanced’ perspectives (e.g., general-systemic complexity, or simplicity of a unity underlying ontologies) just reformulate the same old explanations and experiences in different formats, and their common basis is different.

Chang (2004) uses the term ‘epistemic iteration’ to describe reformulations of the notion of ‘temperature’ during scientific development. The term appears also adequate to describe the development of the modelling method of nexial-topologic deployment, thanks to the stages of Phases one and two of this research. One of the elements that was significant in the experimentation with, and direct observation of health, underwent such reformulations: swelling is correlated with perspectival distinctions (warm-cold, hot-dry), with a ‘nexial activation’ (visible in topographic changes of temperature distribution in the body), with
‘projection to the head’ (explained later), and is most notable at surfaces (eg skin, lungs) –
various interpretations of this criterium (swelling) govern the naming of a ‘sick’ state (eg
inflammation) or a disease (eg asthma, Chronic Lung Obstruction Syndrome, emphysema).
From a topologic viewpoint, ‘swelling’ has covariant aspects in various spheres of existence.

**A kind of ‘quadrangulation’**

In Phases one and two, what is usually viewed as finding the ‘origin’ or ‘source’, or
‘processes’ of ‘origination’ (or ‘effective causation’ in Piaget’s terms), can be envisaged as
an ‘expression’ in words of something that is better described in terms of geometrical
projection. What is being ‘projected’ or ‘expressed’ is like a ‘4th dimension’ from which are
derived descriptions in terms of a 3-modal logic (eg objective, subjective, and direct), which
can be viewed as a ‘triangulation’.

‘It seems likely that the term “triangulation” had its origins in the metaphor of radio
triangulation, that is, determining the point of origin of a radio broadcast by using
directional antennas set up at the two ends of a known baseline. By measuring the angle
at which each of the antennas receives the most powerful signal, a triangle can be erected
and solved, using simple geometry, to pinpoint the source at the vertex of the triangle
opposite the baseline.’ (Lincoln & Guba 1985 p.305)

Phase two, emerging from Phase one, is more than a ‘triangulation’. It seeks the ‘space’ that
is already represented as ‘triangulated’ by the 3-modal logic (eg an ‘origin’). This could be
qualified as a kind of ‘quadrangulation’ that completes a view of the global domain.

[Apologies if I am using inappropriately this word, which is new to me but is intuitively
meaningful, geometrically.] In this way, it re-integrates the differentiation of that domain
into ‘scientific’ and ‘human’ artificially introduced by words and the flat images of symbols
and deployed nexial-topology, and thus counters the dual logic of the methodology. This
could be considered an effective relating of the ‘localisation’ of ‘observing’ in the
researcher, with the ‘global field’ that is viewed through both the researcher and the
viewpoints reviewed (theoretical and experiential). The ‘native’ or ‘undeployed’ nexial-
topology simply does not differentiate them, apprehends the global domain as such. Nexial-
topology, as a method for modelling deployment, and as a native gauging is detailed further
in this chapter, and is used in the chapter <Nexial-topologic deployment>. This, again, will be easier to apprehend through the first animation presented in the dissertation.

**A complex research design**

This complex research design (figure 42, at the end of this chapter), ultimately, allowed me to (a) not limit the practical findings to something valid only for my local-case, but make room for generalisation to a category of similar cases (not only the physical syndromes), (b) nor produce a self-consistently valid representation adequate for humans in general, but leaving other cases unexplained (as the current state of knowledge does). Instead, the findings have a domain of application that is related to the ‘local’ view of a ‘global field’, gained through this approach. It permitted me to draw an understanding that is less constrained by specialised complexities and abstractions, and less limited by the simplifications of conceptual generalisations of containment (eg physical objects, bodies, selves, systems).

Studying both physical and anthropomorphic aspects of the ‘physical world of humans’ poses many problems such as the mind-body problem, and what I call ‘cross-paradoxes’ between the scientific and human domains (for example, the transfer of an idea or practice from a physical-perceptual to a mental-social ‘self’ context, or the opposite, also inverts any value, positive-negative or of optimisation /improvement). Another example is the drift phenomenon of immunity-based auto-destruction of the body (‘defence of self’ becoming counter-productive, or ‘wasting’ in unspecialised parlance). In a paper entitled ‘Problems of reproducibility in complex mind-matter systems’, Atmanspacher and Jahn (2003 – see the PEAR project in <Extract F8: Establish and forms of stability>) argue that ‘second-order approaches’ to epistemology and method ‘can illuminate questions of reference and validity’. The methodological approach chosen for this work seems to fit their discussion, and produces a modelling of reference frames and of conventionalisations of ‘valid reality’. This work addresses a third-order: the deployment of second-order representations, epistemologies, methods, and their development and degeneration into frameworks counter-productive for human well-being. The nexial-topologic effects that can be reproduced are
not, however, ‘empirical data that can be compared with theoretical approaches’, because the field studied is not limited to ‘mind-matter’ from the viewpoint of an intentional individual (see <Endnotes C3\ Special experiences and the unexplained>), or to the ‘givens’ of ‘empirical’ data. This meta-modelling of our ‘ways’ to ‘create reality’, through framing and conventionalisation, is consistent with Nersessian’s (2002) view of modelling as a rigorous method, but also as an intuitive ‘way of thinking’ that is not algorithmic:

‘Within philosophy, the identification of reasoning with argument and logic is deeply ingrained. Traditional accounts of scientific reasoning have restricted the notion of reasoning primarily to deductive and inductive arguments. Embracing modelling practices as “methods” of conceptual change in science requires expanding... [to] forms [...] which cannot be reduced to an algorithm in application...’ (Nersessian 2002 p.135)

The following revisits the research process, in context, to describe the specific methods and techniques used, and then details the particular steps of research and nature of the records.

Specific methods & techniques – Phase one

Preliminary stage: The recording of ‘experiential correlates’ started as a psychosomatic practice of self-assessment as used in nutrition and allergy clinical practice. This matured into two aspects:

Observing experiential correlates

The tripartite correlation (objective, subjective, and direct) produced three basic categories, soon differentiated into many aspects, and changing as new aspects became known:

- Objective elements: symptoms and medical test results.
- Subjective self-assessment: psycho-bio-social meanings (in the psychoanalytical style mentioned previously), the naming of emotions and of ‘general mood’ (less versatile, constant over a period of days or even weeks), and cognitive and perceptual elements that I came to construe as ‘behaviours of the brain-mind’. General mood became an aspect of the general ‘state’.
- ‘Depth’ elements: physical sensations:
  - proprioceptive or interoceptive sensations
-sensations of brain activity (physical and cognitive);

-progressively I began to distinguish ‘signs’ (patterns) from ‘signals’ (activities) both more subtle, less visible than ‘symptoms’, less accessible to a doctor’s objective assessment.

This developed into new information gained from gauging techniques (see below). Among early such observations were ‘gradients’ (eg for temperature, pressure, and water).

Physical experimentation produced a further category:

- Behavioural elements, include vital functions (eg breathing, sleep, feeding) and vital personal behaviour (eg self-care and family care capacity in general), and the general ‘state’.

I also recorded life events that appeared somehow linked to the general state (eg material or socio-economic difficulties), induced phenomena (see below), and other unexplained phenomena (see <Endnote\ C3>).

**Soma-analysis and medical biochemistry**

The analysis of these correlates involved biochemistry:

- linking inferred neuro-transmitters and hormonal dysfunctions with emotions and behaviours (including of the brain: cognition)

- detecting signs of sub-clinical malnutrition due to malabsorption or stress (see ‘hidden hunger’ in <Extract F4> and comparing some lifelong such conditions to symptoms described in certain nutritional diseases;

- doing the same with signals, comparing to the sets of symptoms of neurological, hormonal and immunological medical conditions that constitute named diseases.

These ‘signs’ and ‘signals’ I found in many experiential stories from others, and they were the experiential basis that led me to amalgamate theoretical explanations or philosophical worldviews and experiential styles into the ‘perspectives’, and to derive the abstract parameters (N2d-dual and N3p-polar) that are the basis of perspectival analysis.

Thanks to these observations, experimental tests, and my learning in biochemistry, and by designing several successive customised programs that I tested too, I progressively built a personal biochemical profile, and came to choose nutritional and other elements most appropriate for me (see <D5\ Formulas>).
In a second stage, I traced backward the origin of this personal profile through my physico-cognitive ‘inheritance’ from parents and family history, on to human history of sedentary civilisation, and even Neanderthal, together with a view of present cultural habits regarding the body. A few individuals with chronic conditions describe some such reflections on the Internet. This helped me to investigate the origins of our notions of health.

The major problem was that biochemical and physical explanations did not match these human explanations (described next).

*Inverting psycho-somatics*

My search for understanding the physical body was related at first to the psycho-social meaning (particularly the notion of stress). In time, the psycho-emotional elements became less interesting (explored in earlier years) than cognitive and behavioural elements, particularly extreme cases, and the comparison to others’ experience. For instance an interpersonal ‘powerful reaction’ correlated with increase in body temperature and projection of heat to the head found an explanation in a description given by a correspondent, who framed it as an ‘advanced’ experience in Tai Chi, called ‘Da Mo’s eyes’. Such examples brought to light an inversion in meaning (my experience felt very ‘primal’ and spontaneous – certainly not ‘advanced’, and not triggered by any practice). (See <Extract F13\ San Jiao and inversion> and <Endnote C7\ Spiritually ‘advanced’>.)

I came to realise that my entire analysis of my observations was also inverted, and I came to call it ‘soma-analysis’. Like psychosomatics, soma-analysis is interested in the body, but the ‘mind-body connection’ and brain-body is reversed. The normal direction explores body dysfunction for causal meaning in the *mental space* (psyche, emotions, intellect, motivation of the self as causal agent, choice of lifestyle behaviour, etc) or in the *brain space* (failure of the brain to control the body). Instead, here, dysfunctions of both body *and* the brain-mind-*head space* are explored as a whole for global meaning in the *physical space of humans*, which includes the socio-material world (eg triggers to a ‘stressed state’ and lifeworld in turmoil). (See further discussion in <Nexial-toplogic deployment\ Vertical Axis>).
The western notion of ‘soma’, comes from the Greek somatikos, body, coming from an Indo-European root meaning ‘to swell’. It is related, through etymologic derivations, to the Indian soma, ‘drink of the gods’, to birth, and to various notions that are part of a nexus of meaning that relates to activation and projection, and to which pressure, stress ‘battle stations’ also belong. The root of soma is less differentiating than body-and-mind/soul/spirit/emotion. This was my uneducated understanding when I named this ‘soma-analysis’. It led to a more physically complete analysis of the situation of illness than the notion of ‘embodiment’ which is attached to psycho-socio-emotional meaning (Griffin 1999) or religious meaning (Isherwood & Stuart 1998). The implication is a reversal of the kind of explanations given in psycho-neuro-immunology (PNI 2006 and Degabriele 20002), including for the self-attacking behaviour of the immune system (Clark 1995; also, see discussion of this reversal in <Extract F13\ San Jiao & inversion>).

The practical reversal and inversion of meaning were found also through the theoretical study of explanations of health, experiences of illness and models of the body with perspectival analysis. This ‘turn-around’ is reflected in the above discussion of the words general and integral, and is a major property throughout the research, from beginning to end. The following example will clarify what the inversion means.

The preliminary search for explanation in the human realm was conducted in the same way as a psycho-analysis, tracking back in time to childhood re-scripting the personal health past in psycho-social terms, going through the same stages of attributing causes to self, parents, education, society (medical science in this case), and back to self as agent of positive change. As in transpersonal therapy, it moved on to identifying with the collective past. This produced a helplessness about the imperfection of the body (including at birth) and the damages of ageing, both apparently inevitable except by ‘working at it’, and about the problems of the female body. These issues are what make outside medical monitoring and help a necessity. This helplessness is reflected in the widespread acceptance of these problems throughout history, rationalised through various models of the body. Even a scant review of the literature in history of medicine and medical anthropology can detect this.
Judging by the experiential and spiritual life-stories I reviewed, such a process seems to usually lead, to fixing one’s attention on one particular general explanation of the ‘creation’ of the physical world-system humans see, ‘manifest’ in the body. Whichever is chosen, the same basic foundation appears, which is at odds with the benchmark image given by the native gauging (which gives a sense that physical living can be ‘easy’, without permanently having to ‘cope’ with crises and to ‘work at it’). This had to be investigated.

**A global field accessed locally**

In this way, soma-analysis and experiential correlates gave access ‘locally’, through the researcher’s health, body, to the field of human physical experience ‘in general’ (not differentiating myself from others, now from the past, or this culture or place from another) – a global field. The same field was surveyed as part of the theoretical work. The properties of this field manifest ‘non-locally’ in anybody’s health and in the ‘physical world’.

**Perspectival analysis and perspectival mapping**

Perspectival analysis and perspectival mapping developed from two techniques. The first was a ‘worldview mapping’ that I used in my Master’s study. One of my teachers’ methods (Pinn 1997) inspired it: ‘cultural mapping’, a communal process of putting together artefact and linguistic elements for people to portray collectively their geographical area and community. I had adapted it to using theoretical and experiential elements for mapping synthetic philosophical world-models and other models in specific fields (eg transpersonal psychology).

From this, I drew more general meta-models, and started ‘placing’ all models in integral maps of a graphic nature (Power Point slides introduced later present an exemplary collection). This ‘placing’ has similarities with Korzybski’s ‘extensional devices’ (1958 p.xlix), especially indexing any statement with a relevant date:

> ‘Individualizing (indexes) [to highlight context] and temporal devices (dates), etc., should be used conjointly. Thus, obviously, chair\(_{1600}\) is not the ‘same’ as chair\(_{1940}\), nor is Smith\(_{1\:\text{Monday}}\) the ‘same’ as Smith\(_{1\:\text{Tuesday}}\)…. Through training in the consciousness of abstracting… we become conscious of … generalizations.’ (Korzybski 1933 p.li)
‘Action is one of the terms of pre-einsteinian physics which has survived unmodified, the only other one being entropy.’ (Korzybski 1933 p.680)

This can also be likened to the psychological practice of using ‘I-statements’ rather than generalising. The statement is ‘indexed’ by its location of observation (valid for ‘me’, from my viewpoint). Korzybski indexed them by the time at which they were valid. Scholars do that when they tell of a state-of-the-art knowledge (e.g. saying ‘in the present state of knowledge, this is how it works’), or tell of a generally accepted idea introduced by an author – at a certain time in the history of a field. A simplified form of this time indexing is a citation that contains a date. The simplified form of context indexing is to write for a particular field of research, using its preferred jargon. In this case, I indexed any model, specific interpretation, or limited observation by its belonging to a general perspectival category or, as I came to think of them, to a perspectival ‘space’ that is a general ‘way’ of explaining, experiencing, and even observing. One such perspectival ‘space’ is ‘the Way’ of the Daoists. Another is ‘good science’. Yet another is ‘value-based’ social practice (including some research). Such a space is characterised by a particular type of vocabulary (a jargon). I therefore used a kind of ‘linguistic indexing’ to analyse a piece of text in order to find in it the type of jargon it uses in order to classify it as belonging to a certain type of particular perspective, to a general perspective. For example cliches, leitmotiv words, pet names for processes or systems, preferred words of theory, philosophy, hypothesis, etc., easily betray the writer’s assumptions and general perspective. This is what I called ‘perspectival analysis’, and it can be performed on a simple paragraph or two. This method was invaluable in discerning an archaic frame of thought from the translators’ or the text interpreter’s. It is even more practical in detecting quickly the learned framework of an interlocutor, and distinguishing educated explanations and descriptions of experience, from the uneducated way of describing ‘what is going on’, which is directly related to rather unconscious gesturing. This is particularly relevant to understand the (usually not patient) ‘illness talk’ of a ‘patient’ in the clinical situation (myself included). These general perspectives are what I started mapping topographically and this is what I called
‘perspectival mapping’. Eventually this brought out two fundamental parameters that can describe any perspective, general or specific, and I developed ‘perspectival analysis’. The two parameters, approached graphically, lead to a topologic view, which I used to develop the ‘mapping’ into a more ambitious modelling of the global ‘deployment’ of perspectives (using nexial-topology). Perspectival analysis and mapping are detailed in <Nexial-topologic deployment>.

Specific Emergent techniques – Phase two

Gauging techniques for ‘health mapping’

The need to observe internal sensations that cannot be described in sensory terms, and cognitive processes not easily put into words, such as ‘activation’ (or ‘induced) and ‘projection’ (or ‘oriented’), independently of conventions of space-time, self-world, body-environment, led me to devise ‘gauging’ techniques – ie. nexial, topographic, nexial-topologic– to map progressive ‘shaping’ (small distortions) of the sensations or ideas.

• Ring for topographic heat distribution (see <EEs> in Appendix E)

• ‘Nexial’ mapping using 2 ‘sides’ of twisting – Left-Right: For example, weakness of the body on one side and hyperactive brain on the other side give a sense of being twisted, and do produce unevenness in the appearance of the face and the spinal posture. Pressure gradients can also give this sense. It may also not be physically concrete. For example, ‘reacting’ is a leaning or tendency to the left, and feeling stressed and ‘pushed’ twists to the right; basic intellectual activity and problem solving direct my mind to the left, but complex details, socialising and emotions twist it to the right. ‘Leaning’ is less active and ‘projected’ than ‘twisting’ (see chapter <Ancient perspectivalism>.

• Topographic mapping using 6 directions: Left-Right, Up-down, core-surface. (See two examples in slides 17, 18 in <PPT1 Body>.) When I experienced sensations such as pain, heat, pressure (etc.) that way, I recorded my observations onto standard copies of body or head sections, drawn from textbooks. Then I checked with anatomical descriptions to determine what body part or system might be affected. This might involve locating
topographically (eg mapping pains inside the head [slide 17], dry skin, accumulation of fat under the skin or in particular spots, swelling of lung alveoli surfaces or nasal mucosa, placement of boils along the spine or on the face, etc.). It could also be mapping a moving sensation: such as projection to surface (eg ‘burning pain’ that spreads [slide 18], histamine flush to skin in reaction to the sun’s or a shower’s heat) or a vertical projection (eg vertical heat going up to the head in ‘hot flashes’, or cytokine release ‘stinging’ down from head to coccyx. Some sensations spread ‘through the mass’ (eg swelling starting from the sphenoid sinuses and spreading with pain through the inside of the bones of the face; a sense of ‘turning to water’ and ‘melting away’ that signifies tissue breakdown; a sense of ‘shrinking’ that is a spatial collapse, as in the ‘sinking’ need to breathe located in the diaphragm; or a sense of ‘blowing up like a bubble’ in swelling of belly, extremities, or facial features). Such locating apparently has no meaning to most members of the medical professions and is rarely mentioned in the literature – except the ‘dermatomes’ of nerve pain. This concrete manifestation is how I discovered topologic ‘deployment’ and understood ‘turn-around’ or ‘inversion’.

- **Nexial-topologic placing using colours**

- **‘Body indicators of state’**: These are parts or processes, locations or behaviours of the body that have global meaning: they ‘present’ an indication of the global, or nexial-topologic ‘state’ (eg an order of activation-projection such as the ‘allergic state’). Some are idiosyncratic and can be interpreted in causal terms. (For example, a little hole at the root of the ear lobe can become smelly and indicate rampant low-grade infection in the head; the meaning is also global: vertical projection up – to head in the body, but also emergency ‘coming to a head’ – see <EEs >).

- **Topographic perspectival ‘placing’**: placing the perspective of a theoretician’s model, words or numbers in non-developmental tables.
A new modelling method: Nexial-topology

Nexial-topology is the major innovation of this work and is proposed to the scrutiny of other researchers. It is derived from the ‘native’ capacity that is a ‘lived animated geometry’, by ‘deployment’. I use the expression ‘nexial-topology’ in two ways: it can be

(a) ‘deployed’ Nexial-topology – a method for global situation modelling:

As such, it is a means to parameterise and model ‘deployment’ (the appearance-disappearance, or unfolding and enfolding) of the physical-human space (a ‘historical space’), and the unfolding-refolding of the perspectives that are ‘multi-dimensional realities’, ‘manifest’ for the human mind and brain (known and perceived), and are felt emotionally or energetically. This ‘deployment’ is operated according to topological principles (or logical), rather than the more usual way of developing by using a conventionalised framing (eg a ‘development’ attributed to time), which produces the many perspectival biases.

It can also be used to formalise (for explanation and description), the known native capacity. Nexial-topology emerged from Phase one and from induced phenomena, as a solution to the disparity between these and the native ‘gauging’, and in the form of spatial ‘gauging’ techniques. (The term ‘gauging’ is explained in the section ‘Gauging techniques’ below and in <Validity and Valuing>). This simple tool (nexial-topology) uses two parameters to gauge a third (see chapter <Deployment of Perspectives>). For example, it gauges ‘swelling’ by noticing activity that becomes ‘activation’, and orienting that becomes ‘direction’, whether these properties appear first in the physical body (eg state of ‘alert’), the physical world (eg expansion of the universe), or the material human lifeworld (eg the mushrooming of sprawling cities or the physical consequences of economical globalisation). In a vocabulary consistent with geometric topology, ‘activation’ and ‘direction’ (no longer ‘even’) can be seen as drawn from a notion of ‘oriented pressure’. In common parlance–this is another form of ‘boundary’: a critical state that ‘orients’ behaviour. This will be demonstrated formally through the rest of the thesis. A crucial finding is that ‘Boundary’ also constitutes a ‘baseline’ sensation and a hypothesis or assumption underlying our various ‘representations’, which use perspective, and is at the same time the ultimate result of representation, ‘found’
in reality, in Phase two, nexial-topology becomes a modelling method, a way to explain the shaping, mishaping and re-shaping of the schemas used by theorists and of the geometric icons of culture that underlie experience, including that of health or illness. As a method for modelling, nexial-topologic ‘deployment’ is also a means to integrate all general perspectives into an overall model-scheme. (See <Nexial-topologic deployment>.)

Mathematically, it may be considered a ‘reduced’ form of topology, ie. limited to modal geometric projections in three orders of deployment (rather than ‘many dimensions’). From the human viewpoint, it differentiates a dual set of two symmetric directions of ‘deployment’ (eg unfolding and enfolding, as opposed to a single vectorial direction of ‘development’, growth or evolution). From the ‘native’ viewpoint, however, it is less ‘compacted’ than conventionalised topology, less compacted by one dimensional order (or if you will, less ‘reduced’, by one logical order, to contracted/expanded and localised/extended’ spaces). It is also less compacted, by two dimensional orders, than the calculated topology of point-set defined ‘systems’.

(b) ‘non-deployed’ Nexial-topology – a ‘lived’ animated geometry:

As such, ‘nexial-topology’ is just a ‘lived’ animated geometry felt through the body-brain as a local instrument of apprehension. It is a ‘native’ capacity for ‘gauging’ globally – that is, without ‘deployment’ into conventionalised framing such as systems, self-world, body-environment, time-space, etc. It does not make the normal distinctions, including between the scientific or technical and the human domains, or body-mind and body-brain. It describes a geometric or topologic ‘global field’ (or ‘non-local’) that is neither ‘real’ nor ‘natural’, neither physicalist nor anthropomorphic, but simply an undifferentiated domain, a ‘the situation’. The native capacity ‘nexial-topology’ is lost if it is ‘deployed’ beyond a certain stage to create abstract explanations, concrete experiences, and combined models. What this native capacity can show that is not accessible otherwise will be easier to grasp through the power-point presentation concerning the body (see <PPT1 Body > presentation).
In retrospect, the entire research process that developed from this methodology, may be considered to be itself a deployment of nexial-topology ‘by doing it’, in theory, in experience (see for example the section ‘Writing processes’ below), and in experimentation with the body (see <EEs>). The explanation of the process (methodology, methods, techniques) is, however, unavoidably complicated because it requires conventional concepts and words.

Detailed steps of research

Theory, experimentation, and experience had equal roles in this study, and were the object of records. The abstraction necessary to formulate what this generalist study uncovered requires leaving details behind, for both experience and physical experiments, as well as the detailed contents of theories and models. These are not the objects of direct reporting here. Given the many facets of this project, however, I now present in some depth the details of the particular steps of research I took, and the nature of my records. Some specifics are provided in <D\ Research materials and techniques> and <EEs>.

Auto-didact education

My ongoing learning has included many fields such as philosophy, mysticism, mathematics, physics, etc. The sharpest curve concerned medical knowledge of the body, which, apart from high-school education, I only knew from the practical viewpoint of a healthy person and an ex-gymnast: as sensation. Testing therapies and healing practices helped me to begin my education in anatomy and physiology, learning to relate my sensations with elements of medical description of the body (e.g. nerve pain to dermatomes) and to localise them in particular organs.

My biochemistry education began with testing nutritional substances, particularly vitamin and minerals interactions, and with analysing my quantitative medical test results. Apart from questioning medical practitioners, my main on-going resources are listed under ‘Auto-didact education’ in the reference list.
Literature review: across-domains, multi-disciplinary – extent and limits

The early exploration of the literature on medical theories showed that the notion of health is hazy, has no precise definition, and Williamson and Pearse concur:

‘The word “health” is open to devious interpretations by medical scientist and layman alike. […] it appears to be without technical status as a distinct process in biological science. Wherever no signs of disorder or disease obtrude, a state of health is tacitly assumed to exist.’ (Williamson & Pearse 1980 p.309)

This is not an object of much research, and those who seek the meaning of the word in etymology stop at the historical point where interpretation supports their perspective. The range of literature must therefore explore these perspectives, how they are applied, justified (‘proven true’ by ‘natural’ or scientific observation and experimentation), in order to detect the implications in the case of the syndromes studied.

The literature review was characterised primarily by its inclusion of both physical sciences and human sciences, both being relevant to medicine, but also by:

-relevance to human daily living (eg excluding bio-ecology, but not physics, which produces models used to explain mystic experiences),

-an internal approach rather than external or ‘outer’ (eg excluding socio-economics, politics, etc., or literature on physical perception, preferring direct experimentation.),

-interest in the physical brain (neurology) rather than psycho-cognitive neuro-sciences the mind, psycho-spirituality, and philosophy of mind, which were covered during my Masters (Bouchon 1998).

-medical literature more focused on low-grade illnesses than the more common critical diseases that would occasion medical emergencies without biomedical treatment; and also focused on alternative and nutritional strategies rather than based on medicinal drugs (this alternative is little available for major diseases or extreme body-mind conditions such as bipolar disorder and epilepsy). This began with a review of theories on ‘the cause of all disease’ and of ageing,
-modern literature limited to a Western view, mostly Anglo-Saxon (some French), but it is extended to the past through 19th century, medieval and ancient texts from other cultures (China, India, middle East), and texts based on traditions.

The review covered a wide range of disciplines, and had to be reoriented at each step of the project, eventually extending back to some of the earliest stories in written history. This could be a never-ending task, as my recent discovery of the fields concerned with model-based reasoning, icons, and gesture demonstrates. Many taxonomies and models I created already exist in the store of knowledge, although no one puts them all together. To avoid duplication, a constantly sustained search of the literature was necessary. Many ‘sensation-indicators’ of the health ‘state’ (internal sensations, proprioceptive, interoceptive, etc.) that I rediscovered (see <D4 Rediscoveries>) also are already described, albeit in diagnostic systems that are often unreliable or denatured, but not always. For example, earlobe prickling correlated with struggle or strain of certain organs is described in acupuncture, although not the correlation between earwax release or canal itch and the side of brain activity. As for many of my direct observations (real discoveries to me), finding literature describing them gave names to them and avoided wasting time in unnecessary detailed descriptions or further exploration. Hence the necessity, to include in the range even what is not academically validated material (critically of course) – this is too often discounted because not fitting frameworks or classic reason, but it leads to duplication.

My reading also included textbooks, and countless specific searches for particular details, especially in medicine, and definitions of words, and so I made great use of encyclopedias, dictionaries, and the Internet (see <References\ Auto-didact education>).

**Observed induced phenomena: rediscoveries**

The following phenomena have all been described in the history of knowledge about experience, but are left aside in most academic research, and often forgotten or unknown in the dominant culture because they happen only in certain states, different from normal state.

- **Rediscoveries of aspects of many medical frameworks and models of the body:** For example, I rediscovered many sensations which, with some attention, one can correlate with
something wrong in body areas, and which have been built into systems of healing (e.g. acupuncture points in the ear lobe) (see <D4\ Rediscoveries>). The same process led me to designate certain recurrent observations as ‘body indicators of state’ (see below).

Some reports of the more obviously induced events are included in <EEs>. The following types disappear in more normal or adaptive states, but reappear without fail in the adequate state, and many of them are described in literature not recognised as valid for most academic research.

• **Spontaneous Yoga:** This is a type of involuntary, unwilled behaviour of the body that happens in a certain state, less active physically and mentally than ‘normal’. The movements are not automatic, compensatory, or entrained (e.g. by music), but tend to decondition deleterious physical habits or metabolic patterns, and restore bodily integrity and health (see <Endnote C8\ Spontaneous Yoga> – or rather spontaneous ‘Dao Yin’, which is less forceful or not necessarily corrective). The current general drift in health in Western societies would make this phenomenon important to study.

• **Autonomous learning:** These are involuntary physical behaviours that I associate with agitation, but which tend to produce learning. They create new patterns in the mind, as opposed to undoing them. For example, I described in my Masters thesis an experience of very fast eye movements (REM type), that taught me about ‘integration’ of many superposed patterns into a single one. During this doctorate project, the ‘autonomic learning’ was more like a process of warning (rediscovered meaning of sensations) and teaching. The latter, I surmise, could be an experiential source of the word ‘inTuition’. These took several forms that could fit the appellation of ‘generic recepts’ (Romanes 1888 p.59), although not the animal attribution to which Romanes limits them.

• **‘Morning messages’ and teaching dreams:** see a few examples in <EEs>.

• **Alliteration:** I associated this with archaic remnants of even earlier myths in which women’s wisdom is said to take the form of ‘Naming’ general aspects of reality. Alliterations helped me in abstracting fundamental categories.

• **Uncontrolled lifeworld events:** see <Endnote C3\ Nexial resonance> and <EEs>. 
Non-induced and non-oriented ‘spontaneous’ phenomena

Some of the phenomena cannot be qualified as ‘induced’ per se, or as ‘directive’ although they are ‘spontaneous’. They appear in connection with the stopping of most ‘states’ (including normal, which I consider a chronically induced-directive state). They are non-oriented-activities of body-mind and lifeworld that match the animated imaging given by the native capacity, whereas all other observations and frameworks are mis-matching, ‘turned inside-out’. Through that capacity, they are apprehended as the most relevant to health, providing an effortless maintenance of the body (and lifeworld). The most striking of these is the ‘lived animated geometry’, the ‘native’ capacity to detect ‘being induced’ and ‘being oriented’. This is what I used as a benchmark.

Research notes, tables, and collections: words, theories, models

• In the early part of the project, my notebooks contained collected words, many mind-maps, questions, and other reflections. I accumulated a large collection of words drawn from my readings, that I classified in lists corresponding to developmental or evolutionary classifications, as well as lists of 2 columns (eg general-specific concepts), 3 (eg modal) and 4 columns (eg double-symmetries).

• Later (on the computer) I organised them into tables to ‘place’ them in non-developmental schemes. I collected, analysed, compared, and classified a large number of theories and general models from many fields, as well as experience types, and made well over two hundred tables. This was a continual process designed to create taxonomies and typologies, and check for consistency and completeness. My notes reflect this and contain theoretical insights, analyses, nexial-topologic observations, drawings, and iconic images found in ancient texts. I also organised into computer files a number of images drawn from theories and models I collected. A short selection is included in the presentation <PPT2 Models collected>. The number of tables and the complexities of language are such that only extracts of my tables are included in this text.

Accessory studies

My notes and computer files include records of pointed studies to further certain aspects.
• **Phenomenological portraits** of views of ‘the body’ in several ‘voices’ representing the most general perspectives (body-machine, body-vehicle, body-container); periodic rewriting of my ‘patient history’, according to new perspectives.

• **Exploration of artistic abstraction:** an exploration of this function in painters under the guidance of artist friend Zig Jaworowski.

• **Collaborative exploration:** Monthly meetings for three or four hours each, with a group of locals, to explore the deepest practical (daily life) motivations for a person’s interest in experiential spirituality. This allowed me to confirm the experiential valence of perspectives, and bring out the logical problems that come with the philosophical counterpart.

• **Exploration of ritual:** I interacted, for a period of six months, with a local practitioner of ritual as a means of healing, to determine similarities between acting-out ritual and hand-and-body gesturing from which I later derived the geometry that corresponds to the dual and polar parameters of perspectival analysis. This brought out the dimension of expression of generalist thinking that exists in religious symbolism, which I later understood in terms of modelling.

• **Writing processes:** Experiments with writing processes such as text ‘flowing’ from the pen, ‘multi-tracking’, colour coding, and observations concerning ‘getting lost in details’ and endless reorganisation of text (a danger known in grounded theory, which can result in endless reshuffling of theoretical categories). I spent a number of weeks writing a paper on concepts of the self, as a first attempt to formulate perspectival analysis, and this helped bring out the incompleteness of perspectival classifications, and the current focus on mind and brain. After exploring many specialised vocabularies to find one general enough but practical enough to convey the findings – and failing –, the two final years of this project were spent in experimenting with various semantic combinations of word and image, and various specific topic to approach the general findings.

• **Development of others’ questioning:** Following the questioning and development of the writing career of a few authors: Walter Stace, Catherine Despeux, and of the models of Ken Wilber (see reference list).
• A ‘syncretic’ style study of the element water: I paid particular attention to the
'syncretic' style (see *Ancient Perspectivalism*), by spending several months reviewing
literature on water, from both scientific and human viewpoints, and writing an entire paper
using this style (‘Bodies of water’, unpublished). This brought out the fact that water can be
made to fit any perspective and is an adequate subject to gather a ‘complete’ perspectival
map – which I did. It also led me to archaic imaging.

• A two-year study of the origin of the ‘4 directions of the Earth’ and of the nature of
‘space’, which involved an in-depth study of a number of archaic texts, etymology and
topographic imagery. This led me to gathering *Nexial-topologic vocabulary*, introduced and
collated in <Table 9/ *Nexial-topologic vocabulary*> , which confirmed the two fundamental
parameters (dual and polar), and the usefulness of using topology to model our consequential
views of ‘the body’ as various types of ‘system’ or ‘container’. It also brought out the
intimate involvement of medicine with the origins of spirituality and religion.

• Development of my own model making: A perspectival analysis of the models I made
for my Masters, and of the shape that could be discerned in the general typologies I built
from the literature, using the two fundamental parameters of duality and polarity. I studied,
in this development, both a complexification (increased numbers of categories) and
simplification (recurring integrative shapes), and found these two processes both in authors
in the history of religious philosophies since antiquity. The deployment of my more
primitive imaging, I found echoed in the archaic interpretations of Neolithic myths. This
development correlates to the development of experiential styles, and to the increasing
difficulties of health. This was instrumental in my being able to produce images of the
deployment of the perspectives, as proposed in this work.

• Conferences: Early on, I attended a conference on ME-CFIDS² in Brisbane, and one in
Melbourne on mind-body healing techniques, with an added training day on stress with an
expert in the field. Presenting at a conference in China on model-based reasoning in
medicine, in June 2006, convinced me that the format chosen for this thesis may be the most
effective, including the way methodology is described in this chapter (short of being allowed to give a live presentation). Attending this conference also uncovered two research fields that are relevant to nexial-topology and which could have possibly saved me some complication in this project: (a) the study of the gestures that accompany speech, which has similarities with the study of ritual; (b) scientific model-based reasoning (e.g., physical analogy in Nersessian 2002), as distinguished from ‘model building’ in humanities. ‘Model’ is another notion that has different meanings in the two domains (e.g., Nouvel 2002), basic in one and advanced in the other, with computer-based modelling and ‘abductive reasoning’ to integrate both.

**Experiential correlates**

My early observations comprised informal notes taken during physiotherapy and medical treatments, while my inquiry slowly came into focus. Once the issues of stress and of recurrent ‘allergic states’, appeared crucial, I took more pointed notes, having determined that my versatile ‘states’ were crucial to my understanding. I kept records of conventional medical tests in which I analysed physical measures for small changes at the edge of normal ranges (in particular, in which direction: away from normal or closer). I recorded my observations daily, more often if necessary (even at night). After a few months of preliminary explorations, once I started nutritional experiments, the records became structured into pro-forma sheets according to the objective, subjective, and behavioural categories, and ‘deep’ or ‘internal’ physical sensations. A few examples of my notes are gathered in <PPT6 Research notes>. I also kept a journal of personal reflections, special experiences, and of aspects of my health, later split from experimental notes, analyses of medical results, and notes in medicine.

**Experimental tests performed**

The early period, before diagnosis, was spent in passive observation of the effects of treatments advised by various doctors, especially physio-therapies and some medical drugs which provoked violent reactions (e.g., near-epileptic, or feeling like a zombie), this happening

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2 Myalgia Encephalitis and Chronic Fatigue Immuno Dysfunctions Syndrome
later again with other medicines (eg anti-smoking, anti-asthma). After less than a year, I started testing repetitively herbs, vitamin complexes and nutrition advice as advised medically, and gathered a large documentation in the nutritional field, including on biochemical interactions of nutrients, while educating myself in other medical disciplines.

Most of the following tests were performed over a period of five years.

- **Phenomenological exploration of healing techniques:**


Other practices include: osteopathy, postures from hatha yoga, eye exercises, ‘energy healing’ techniques, technology-based brain altering techniques (eg delta brain wave entrainment by Centerpointe [Harris 2002], music tapes [stopped because it came to cause arrests of my weakened breath and heart]), music treatment for tinnitus (Tomatis 1991; stopped because of asymmetric brain pain). I did not use psycho-mental based techniques, visualisation, motivational ‘choice’ (will, intent…), or ‘behavioural change’ (explored in earlier years, and which had left me with the problem shifted from the psycho-mental realm to the physical brain). I explored in some depth the explanations and experiences of homoeopathy (which had no detectable effect on me), acupuncture, chiropractics, ‘gym ball’ exercises, several forms of Qi Gong and yoga, and the ‘Kundalini Syndrome’ (Greenwell 1990 & Greyson 1993), more in its physical form (Sanella 1987 – see <Endnote C8\Spontaneous Yoga>).
• **Symptomatic self-tests**: a number of self-testing techniques gathered from medical and nutritional literature and from the Internet (eg for low blood pressure) eliminated diagnostics, provided specific information about particular functions and observation opportunities.

• **Nutritional substances tested** to learn about biochemical interactions: The most important groups tested separately, systematically, repetitively, were: amino-acids (‘essential’ for adults and children, plus a few others, and HMB-beta-hydroxy beta-methylbutyrate – claimed to prevent catabolism and, in my experience, also stops various pains of the kind I consider ‘autophagic’), oils including cheeses (cooked and uncooked) (effective for various forms of inflammation), glucides (carbohydrates), vitamins and minerals, salt (against swelling of extremities), and (‘abstract’) extracted substances such as colostrum, glucosamine, MSM-methylsulfonylmethane, and some herbs. I tested the degree and nature of processing of glucides which helped explore craving, addiction, and allergy: glucose sugar (adversely affects the brain and nerves, but can promote temporary general compensation, like a placebo), xylitol sugar (makes intestines work, up to spasms at high dose); highly processed carbohydrates (grain flour and potato products promote activities of work, decision, choice and ‘hyper-’), cooked starchy root-vegetables (eg potato, and carrot help ‘coping’ effort), concentrated sweetened Nestle milk (effective against emotional crisis, helplessness, suicidal ideas, and pain, but causes apathy), a particular brand of chocolate ice cream containing less sugar and additives than usual (helps ‘detail’ intellectual activity and writing, while preventing too much systemic damage, but not dehydration, eyesight loss, cytokine related pain, and ‘burning’) [all these dehydrate me and cause swelling], gelatine (prevents low-grade proteinuria in urine, contains ribose sugar, which is widespread in the body’s tissues). Other tests included: two diets (Gittleman 1996 ‘Beyond Pritikin’, Atkins 1999) while I reviewed the confusing and contradictory literature on ‘ideal’ diets (medical and alternative), eggs (white, yolk, cooked, raw), uncooked organic fruits/vegetables and juices (better digested, help adaptive metabolism, especially carrot-based juice to ‘balance’ and ‘cleanse’), water fruits (tomato, cherries), fresh leaves of bitter salads, parsley, spinach, catnip herb (diuretic, ‘tonic’), a number of ‘natural health’ targeted composite formulations
for metabolic support (Restore for brain, glyconutrient mix Ambrotose, LiveManna seeds mix, digestive enzymes), some of which I still use, such as Ultra Muscleze (electrolytes/minerals for neuromuscular system), Tussiban (gentle herbal cough syrup), Lyprinol (oil blend for asthma), Moducare (Bouic 1996, 1999, immune modulation), and a formula-recipe devised by German biochemist Joanna Budwig (1957, 1971, 1996, 2000, see <D6\ Budwig spread>) for heart, arthritis, and cancer conditions (Roehm 1990). Some observed effects go beyond what is described in the literature: lemon in water (seems to act on Krebbs cycle in cellular energy, and help water metabolism), unprocessed, raw foods (berries, nuts, seeds, cucumber) have a particular role (‘restarting’ the sense of ‘feeling alive’).

• **Complex programs:** Among the large number of substances tested separately, I chose the most effective (for different purposes and states), organised them into therapeutic programs based on different theories, with strictly determined doses/times, combined with techniques (eg breathing), for trials geared toward my symptoms. The programs changed as my symptoms changed. As a result of these tests and my theoretical work, and inspired by a doctor-advised anti-proteinuria CFIDS formula and an ‘eye health’ formula, I designed two nutritional formulas containing amino-acids, vitamins, minerals, geared to different ‘states’, which I tested for two years and still use (see <D\ Research materials\Formulas>).

**Experimental reproduction:** I examined the phenomenon of ‘reproducibility’ by various means. (a) Repeatedly testing, in the style of environmental medicine for allergy, various food elements, techniques, and lifestyle aspects (eg exercise) at different times and in different ‘states’ of health, showed great variations in the particular physico-mental effects, and that the improvement value of some interventions (eg Tomatis music, sugar) can be completely inverted, compared to the effect on most people or for different states. Noting sensations and global effects on the lifeworld showed specific variability, but also the essentially self-similar nature of some manifestations of the ‘states’ (see <Extracts F11\ Red> and <EEs>). (b) Changes in taste showed reproducible features that are consistent with ancient explanations of taste (but not tradition-based tastes as types or correspondences). For example, craving certain foods repeatedly correlated with certain states. Salty and bitter
tastes in the mouth correlated with different forms of tissue degeneration, and I linked them to kidney difficulty and proteinuria (or ‘autophagic’ being ‘consumed’). ‘Bitter taste in the mouth’ is usually attributed to both critical ‘silent killer’ diseases and subclinical conditions. (c) Certain states characterised by various degrees of pain and strain-stress, and loss of self-care capacity reproduce automatically and periodically (see <EE15>, <EE16>, <EE17>, <EE18>). I achieved a state closer to the ‘normal’ or ‘adapted’ state of health only once and not stably (this was during a later period of writing this thesis). For a couple of weeks, my work capacity was normal rather than ‘hyper-’. I did take weekly days off, my eating was ‘normal’ (3 full ‘meals’ a day, carbohydrates, cooked food). I also experienced more even emotions, but also loss of internal sensation, no longer aware of the pain indicating ongoing physical damage, and patterned behaviour of intellect (normal thinking), among other things. (d) The occurrence of alliteration and spontaneous yoga were particularly fascinating: could a ‘state’ defined in nexial-topologic terms (rather than as a personal condition) reliably trigger them (yes), would the particular ideas or behaviours repeat (they do not), what state was required (‘order 1 deployment’ – see <Nexial-topologic deployment>), can certain breathing, gentle walking and swimming ‘allow’ this required state (yes, under certain conditions)? (e) The most difficult state to ‘reproduce’ is the very uncommon ‘ease’ (or ‘proto-health’). Although it is characterised by physical effects (e.g. easier breathing, a ‘well-watered’ body – see <EE1>, <EE3>, <EE4>, <EE5>), mental aspects (e.g. defocused, quiet intellect- psyche – see <EE2>), and a local ‘state’ in which stress, strain, problems and effort to find solutions or meet needs are ‘undone’, it is also a ‘global’ (or non-local) situation. Personal, purposeful action or decision (by self or others) and ‘external’ conditions have no direct influence on its onset or its staying – only on its being lost (usually within six weeks).

**Validity**

**Validation procedures**

Given the complexity of this project, and the amount of materials I worked with, I used a number of practices.
• **Study length:** The length of the study (7 years, following 2 years of Masters), and its intimate involvement in the researcher’s daily life ensured proper grounding, as opposed to theorising irrelevant to real situations. It also prevented premature closure of the conceptualisation before the dark corners could be explored. Many unexplained things, rather than being questioned, are commonly dismissed as probably meaningless, ‘without known use’, or as chance or statistical error, or are accepted uncritically as approximation and a necessary step of fine-tuning. On the other hand, the grounding in my daily life health prevented the research cycling from being endless.

• **Individual external contacts:** One of them was to maintain various intellectual contacts (email correspondence with researchers and other individuals, talking with healers and medical practitioners), but also listening to people in daily life, watching their gestures, and a few intimate relationships (for sharing experience in words and gestures).

• **Regular medical tests:** I submitted myself regularly to conventional medical tests prescribed by a medical doctor, and analysed the results, as well as to a number of expensive ‘alternative’ tests for sub-clinical distortions or dysfunctions (eg blood cells). This was a means of exploring or confirming the small changes at the margin of statistically ‘normal’ quantities, and helped fool-proofing the possible negative effects of my experimentations. This, and talking with the doctor, also made sure I did not derive mistaken understanding of the technicalities of medical sciences, or views of health biased beyond all common sense (as is sometimes the case in herbalists, scantily educated in physiology and anatomy). These tests were also crucial in correlating (a) biochemical explanations of effects claimed with sensations I mapped, and (b) my ‘native’ animated geometry and nexial-topologic modelling of the illness developments, with medical explanations and diagnostic names.

• **Confirmations and invalidations:** Throughout the project, I sought to establish and maintain a constant stream of both validation and invalidation, specific and general, to counter any possible researcher bias, and to relate my findings to the store of knowledge and common experience. The means to obtain these included:
-seeking negative cases, opposite views, logical flaws, breakdown limits of reasoning and of the representation capacity (anomalies), ‘edges’ that do not fit with maps and models, and basic falsification attempts in particular cases (eg counter-examples or fundamental difference in experience);

-checking what meaning is attached to words (often ‘turned around’, compared to my original understanding);

-confirmation that certain forms of experience exist for some people, very ‘real’ to them (eg ‘energies’ and ‘blocks’, excitement of living ‘on the edge’), even if they are not so easily experienced or so ‘real’ for me; seeking and experimenting with techniques to trigger the phenomenologies in myself; reading biographies, illness stories, experiential self-reports, questions in Internet ‘posts’, and interacting with others;

-constantly circulating between explanation and experience for consistency, and seeking literature that might already contain explanations, descriptions, theories, philosophies, maps, models, etc., similar to mine, and verifying the implications;

-always seeking all perspectives on any particular topic, that is, ‘walking in others shoes’, asking myself, ‘How would such and such perspective view/experience this?’. ‘What name is given to this in such and such field?’, ‘How do they present this in another area?’, etc.;

-simply observing people’s reactions when I speak and ‘bouncing ideas off them’ to detect what makes no sense to them.

- **Reproducing the effects:** See ‘Experimental reproduction’ (p.60), and <Conclusions>.

- **Researcher bias and Researcher ‘topologic orienting’** are discussed further in chapter <Validity and valuing>, as well as valid ‘evidence’.

**Validity of ‘perspectival mapping’**

At the end of three years (Phase one), I tested the structure of perspectival analysis and the related mapping against (a) a detailed analysis of the attributes of a complex ‘meta-model’ (Goldspink 1999 pp.223-232), (b) a short description of a ‘good model’ in computing, and (c) a philosophical description of ‘theory with inner perfection’ (Einstein 1991 pp.21-37) (simple and ‘beautiful’ theory in physics). It met all the criteria (yet something was missing).
In subsequent years, the two fundamental parameters of perspectival analysis were confirmed by every accessory study, every field investigated, every body-mind-lifeworld behaviour, logic, and model found to be already described (albeit in a scattered way), including the types of questions they leave unanswered. Of course, I have not reviewed the entire store of knowledge or experiences, but this is a good indication of a general validity. It also appears that the same fundamental parameters are consistent with human sensory perception, and compatible with the recognised ‘uncanny fit’ of mathematics for describing the universe ‘finely tuned’ for the existence of humans.

**Validity of ‘nexial-topology’**

*Mathematical* topology (*calculated* dimensional geometry) is a known tool that is used in physics (quantum) and ‘sciences of complexity’ (chaos, non-linear dynamics) but not in human sciences, in which using the results of these fields for metaphors is subject to contention (eg Goldspink 1999). Nexial-topology uses an unmeasured geometric form of simple topology that describes small deformation (topologically without tear or hole; see <Endnote C4\Topology>).

(a) As a modelling method, nexial-topology corroborates the validity of the cryptic language and symbolic imagery of texts found in archaic and ‘core culture’ (see <Endnote C6\Core culture>) to describe what more common frameworks leave out. The nexial-topologic modelling of our views and ways (perspectives of explanation and experience) is also confirmed sporadically by examples found in fields not explored systematically in this project. For example, the placing ‘left’ or ‘right’ and the properties of ‘spreading’ and ‘wasting’ are present in economy and politics. At the end of Phase one, the ‘gauging’ techniques helped me detect nexial signals of activation and topographic signs of projection, that denote ‘states’ of ‘oriented activity’. They are global properties (topologically equivalent) of a nexial-topologic ‘space’ that is not located or valued but ‘deploys’. They are, however, habitually interpreted separately to build a topology of scientific space-time or human self-world. At the end of Phase two, these indicators integrated together, degenerating into detecting combined ‘marks’, which I found in ‘advanced’ and ‘completion’ frameworks,
modern and ancient (an example is ‘symptoms’). Such integrative indicators are commonly understood as either marking ‘stages’ in differentiating, individuating, or developmental processes (eg appearance of disease symptoms, or occurrence of adaptive stabilisation), or as spatial tracks and traces of some other realm (eg the past, or ‘other worlds’). Nevertheless, this helped me to find in archaic texts confirmations of some unusual physical observations I made that are no longer described, but remain as cultural rituals of reputedly unknown origin (especially <EE 15/ Red spot> and <Extract F11/ Red>). This requires a ‘physical’ reading of the texts – that is, a physically grounded meaning derived from sensations of health-illness, but not ‘physicalist’ (limited to the ‘body’), considering them instead as presenting a global image, undifferentiated, rather than a wholistic, integrative, or systemic one according to modern conventionalised interpretation (eg personal behaviour, psycho-social-moral or spiritual self, or materialistic body or building) (see chapter <Ancient perspectivalism>).

A nexial-topologic use of the ‘gauging’ does not involve these limitations but a notion of ‘deployment’. This ‘gauging’ capacity is familiar in practice, but is always controversial because it is described under persectival types of formalism that do not win collective agreement in name or explanation (eg physical ‘instinct’, ‘spontaneity’, the thinker’s mind ‘intuition’, the mathematician’s ‘inductive’ creativity, etc.). Presented in these conventionalised forms, it fails ‘reality tests’ in certain circumstances (see discussion in Braud 1998 pp.220-3) and appears invalid. For this reason, the ‘native gauging’ is used here just as the inspiration for the nexial-topologic deployment method and gauging techniques, and as a benchmark to gauge the adequacy of models in the practical realm of body-brain health and daily living [as this researcher can access it through the local-case]. It is not used as ‘an appraisal of the validity of [one’s] work as a whole’ (Braud 1998 p.221), nor as justification of the ‘existence’ of some more ‘real’ or ‘true’ reality ‘below’ or ‘beyond’ the physical space.

(b) As a native capacity for global ‘gauging’ based on local observation, it can be described in a new formalism based on the parameters of the method of nexial-topology that explicates what ‘deployment’ means, and thus brings out the ‘state’ of non-deployment. This formalism
does not involve ‘perspective’ and so might agree with other presentations of this ‘native’ capacity and state. It might also open the door to a wider validation because of its ability to answer questions about ‘non-local’ and ‘drift’ phenomena that are the core of current ‘fundamental problems’ in many fields. This is used in daily life and by well-respected classic authors (see <Extract F5\ Gauging thinkers>).

Thus understood, nexial-topology has fully proven logically consistent, valid and useful, albeit only from the ‘local’ point of this user, at this stage. Yet, it seems to help some others to make sense of conditions otherwise mysterious. My discovery of this ‘lived’ geometry and it expression in my own and others’ gestures (in a first-order ‘deployment’), was confirmed indirectly, by an article I found recently on gestures that ‘mismatch’ the accompanying speech in children (see <Many perspectives>). Neither form of nexial-topology (‘native’/‘undeployed’, and the method to model ‘deployment’) constitute truths or conjectural hypotheses requiring proof, nor are they merely subjective realities dogmatically biased, nor even any ‘better’ way of representing, or explaining. Nexial-topology, deployed or not, simply permits an ‘imaging’ to understand a certain domain that is ‘mysterious’ or ‘hidden’ for other means, and it has a domain of application (defined further in <Conclusions>).
Figure 42: ‘Complete map’ of the methodology:
This flat map shows drift but there is a turn-around, not obvious here.
Health and illness

Supporting materials

The following text addresses general strategies of health, rather than specific treatments, definitions, testing methods, or medical information on particular symptoms of chronic illness. A detailed, perspectival approach only brings out the countless controversies and contradictions that plague the literature concerning such conditions. The easiest approach to seeing what, in the body and health, is neglected in our medicines, modern and ancient, is to view the Power Point presentation <PPT1 Body> (slides), while keeping in mind one’s own states of health and unexplained sensations. It will be also useful to review it again after reading the thesis: important topologic properties will then be clearer. This visual approach makes the body’s places and processes easier to embrace without the distinctions, details, generalisations, and placing of ‘causes’ that hide global properties. The collected text extracts point to certain patterns, and orient to parts of the medical literature. The sections <Extract F16\ Variable body> and <Extract F17\ Anatomy notes> contain, respectively, remarks and extracts from anatomy books and provide specialised information that is rarely mentioned in literature on health and is little researched. Medical sections are included in many of the other collections, which are classified thematically in the appendices. Two are particularly focused on the body: <Extract F4\ Syndromes of instability> contains sections relative to ME-FM-CFIDS\textsuperscript{1} and similar syndromes; <Extract F6\ Brain central control> samples various views on the dominant role ascribed to the brain and mind in health, in the diverse types of medicine. Elements of archaic and ‘core culture’ views on health (<Endnote C6\ Core culture>), and practical aspects of bodily experience, which are neglected in our

\textsuperscript{1} Myalgia Encephalitis-Fibromyalgia-Chronic Fatigue Immuno-Dysfunction Syndrome
modern perspectives, are introduced in appendices C (endnotes), E (special experiences), D (research materials and techniques) or sampled in appendix F (extracts).

**Describing the syndromes**

During the preliminary phase of this research project, the literature review relating to health concerned mostly explanations of disease and health in general, the Peckham Experiment, representations of illness, stress, allergy, and chronic conditions (Thagard 1999, Bateson-Koch 1994, Peck 1996, Logan & Wong 2001, Thorson 2003, Dunstan 2001, Griffin 1999, etc.). In parallel, I was beginning of my autodidact education in the many specialties of medicine and brain sciences. For over a year, the experimental part was still only exploratory and I worked out ways of recording observations and analysing the literature. The explanations I found reflected the dominant emphasis on neuro-hormonal functions and strong immune defence, and their stimulation. These provide useful compensation for extremes (eg systemic weakness or extreme muscular tension), but effectiveness of both explanation and treatments with this emphasis ran out when allergic phenomena started. These ‘reactions’ to usual conditions such as foods (eg chicken), and even taking a shower (a mild form similar to ‘Aquagenic urticaria’, Luong & Nguyen 1998) had never existed before. This brought out a pre-existing and chronic high activity of my immune system, which is reflected in the name Chronic Fatigue Immuno Dysfunction Syndrome. Then my interest converged on low-grade immune defence and inflammation, and shifted my study from psycho-bio-social stress (extremes of fatigue and mood, and exercise / recovery problem) to the body-brain aspects of physiologic and metabolic strain, and perception and cognition in the brain-mind (eg of pain and other sensations).

The focus was now on reaction, hypersensitivity, sensitisation, sensation, sensing, etc. It shifted from the extremes that are at the limits of what can be sustained, when there is risk of a crisis, to the critical response itself before such limits, at their approach – the binary dynamics of a ‘reactive state’. By this I mean the sense of being in an ‘allergic state’ as a whole, in which almost everything, external or internal, becomes stressful. Few things have established patterns or stable activity in this realm. Many chronic illnesses have a general
commonality in symptoms related such a ‘reactive state’, instability and recurring crises, although each particular set of symptoms defines a differently named illness. I lumped them all under the term ‘syndromes of instability’ (see <Extracts F4>), after much work to classify them by recognised causes and into types. The importance of this notion is best exposed through reading the examples in <Extract F4\ Syndromes of instability>. The shaping of such experiential manifestations, and of their rationalised explanation, will be more accessible through images, in <Nexial-topologic deployment>.

Sensitivity has a side benefit: it allows observing subtle internal sensations (in body, brain, and head) that are not felt in the ‘normal’ state. They are integrated, as ‘signals’ and ‘signs’, through the nexial and topographic techniques of observation that I developed (see <Appendix D\ Research materials and techniques>). The syndromes are also characterised by some degree of bodily ‘wasting’, which involves loss of body mass and integrity of the tissues, and reduced water-related tone. This manifests in particular in weak posture, but also in reduced thickness and resistance of the skin, and less tight surfaces. Thanks to this, internal organs and structures can be palpated in ways that bring some information not normally available through touch, about shape and localisation, and changes.

The research then turned to studying progression, origins and ends in both a local sphere – ie previous state of health and shapes of the body, and a global one – ie space and physical existence as humans see them. These are more general than just the material body and world.

As a result I began finding historical descriptions that fitted some of my observations (eg some associated with colours), for which I could find no description in the modern literature, biomedical or alternative. The more ancient the texts and stories I read, the better they seemed to fit my less conventional, observations, especially regarding ‘placing’, first occurrence of signals, and appearance of signs. Many of the sketches I drew to image the texts that scholars consider analogies or metaphors, represented various forms of growth, embryonic generation, development, evolution, etc., but contrarily to the modern positive evaluation of these, the oldest stories warned of global dangers inherent in them, some of which I was discovering first hand.
Scholarly works on medieval medicine and anthropology show the clinical encounter to have been problematic for a long time, particularly for women patients with illnesses that tend to be devalued psycho-socially as ‘hypochondriac’², or associated with the ‘weakness’ of ‘female constitution’ and female instability (physical, behavioural, and ‘emotional lability’). Many patients with low-grade illness have to go through years of searching for medical help to go past the pseudo-diagnoses of “It’s all in your head” or “It’s just stress”. (It took one year in my case, first taken seriously by a sports medicine practitioner.) The study of iconic imagery in Chinese medieval texts, as well as my imaging of archaic ones and of nexual and topographic vocabularies, shed light on the problem in another way: as different approaches to observing, rather than an interpersonal communication problem or a clash of value-based styles. Patient and doctor use different languages, respectively colloquial and medically formalised (Furth 1999), but they also use a different perspective. Medically trained professionals think – and look – in terms of objective symptoms and subjective self-observation (eg in psychosomatics and allergy medicine). Self-reports show that patients often use, instead, a topographic and nexual vocabulary of sensation and impressions, signs and signals. Even many educated patients do this, then translating their own expression for the clinician. This is obvious when we tell of our stress or our most wonderful experiences. Sensations and impressions are not distinguished into internal-external, physical-mental, reason-emotion, structure-function, objects-relations, cause-effects, etc. They describe ‘big’ or ‘small’, ‘going too fast’, ‘going too far’, ‘shifts’, ‘starting to’, ‘slowing down’, ‘moving’, ‘stopping’, ‘I can breathe again’, ‘getting out of hand’, ‘not quite on track’, a sense that the situation is ‘grave’ enough to seek help, or has ‘resolved itself’, etc. 

**Confusing definitions: Examples of inversions and ‘turn around’ in health**

Problems of expressing observations are crucial in the clinical encounter, but in medical theories, even definitions themselves are contentious too. The notion of ‘stress’, usually invoked in one form or another for low-grade chronic illness, is particularly confusing:

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² The physical localisation included in this term actually fits rather well the topographic observations of bodily struggle in such conditions.
‘[...] the much more obvious “syndrome of just being sick”.’ (Selye 1976 p.17)

‘Some of these changes are merely signs of damage; others are manifestations of the body’s adaptive reactions..., its mechanism of defense against stress’ (Selye 1976 p.1)

‘Actually, I should have called my phenomenon the “strain reaction” and that which causes it “stress”, which would parallel the use of these terms in physics.’ (Selye 1976 p.50)

‘The word stress is indiscriminately applied to both the agent which produces the G.A.S. [General Adaptation Syndrome] and to the condition of the organism…’ (Selye 1976 p. 50)

Selye’s confusion regarding names appears resolved by a more precise definition, but this has a cost. Compare the two following statements:

‘We are just beginning to see that many common diseases are largely due to errors in our adaptive response to stress, rather than to direct damage by germs, poisons, or life experience. In this sense, many.... disturbances... and renal derangements appear to be essentially diseases of adaptation.’ (Selye 1976 p. xvii)

‘It seems unclear why he called these human diseases – diseases of adaptation, rather than calling them diseases of mal-or failed adaptation.’ (Weiner 1992 p.15)

These two authors have different views on the ‘stress reaction’: (a) the reactive dynamics as negative and part of a person’s ‘being sick’ physically in having to face ‘stress’ or (b) as positive and part of a person’s mechanisms for ‘coping with stress’, the sense of sickness being a failure of the dynamics. There is an inversion. Selye’s notion of ‘disease of adaptation’ represents a general ‘syndrome of being sick’ physically (Selye 1976 p.17), (from physical strain). Weiner interprets this as a ‘human’ failure in which:

‘Because of their hetero-geneity stressful experiences do contribute, the person for diverse reasons has failed to cope with them.’ (Weiner 1992 p.15)

The difference involves a symmetry between the physical and the anthropomorphic viewpoints that is most visible in the opposite evaluations of the condition. This inverted value is a generally characteristic interpretation of the symmetry between the scientific and human domain. Weiner’s separation of body and mind (an equivalent physical-mental distinction) and specification of diverse stressors (factors) produces a causal explanation:
‘We know today that these varied diseases are not only multifactorial and heterogenous in their etiology and pathogenesis, but are also characterized by disturbances of the regulation of complex physical systems.’ (Weiner 1977)

The description shifts from adaptive reactions that are successful but appear as physical sickness, to human illness caused by disturbed regulation and adaptive reactions that fail to produce successful coping. Yet, in Randolph’s (1956) ‘specific adaptation syndrome’ (physical reactions caused by specific sensitisation to foods and environmental chemicals (the approach of ‘environmental medicine’, formerly ‘clinical ecology’), it is the adaptive over-reaction itself that is a problem, or the ‘low’ feeling that is linked to withdrawal symptoms in adaptive addiction. My review of the literature was plagued with these sorts of shifts, different placing of ‘causes’ (internal and/or external, in body and/or mind), inconsistent general and specific explanations, and inversions of evaluation. None took a global enough approach or, rather, they tend to separate, and I found their contentions to be mostly related to differences between scientific and human views, or physical and psychosocial formulations. For example, scales (eg degrees of gravity) combined with positive-negative values yield the notions of ‘hyper-’ (active), ‘hypo-’ (active), and thresholds. These are familiar in allergy and stress analyses, and bring models such as Randolph’s (1970) ‘ups and downs of addicted life’ (a 9-levels scale: 4 ‘up’, 4 ‘down’, and a middle 0):

‘One valuable insight from his [Randolph] observations is that at different times the symptoms present themselves in “up” (eg. hyperactive) and “down” (eg. depressed) states. Although these are both recognized as being undesirable at the developed end of the spectrum [both ends away from zero], during the early stages of development the “up” conditions (active responsive, enthusiastic, ambitious, witty) may easily be regarded as desirable, its connection with the “down” conditions (stuffy nose, occasional coughing and sneezing, skin disorders, gas, diarrhoea, constipation, frequent urination and various eye and ear symptoms) not being recognized. […] The negative effects… are either hidden or not taken seriously until they reach crisis proportions.’ (Hill 1985)

This scale is drawn from a triangle model inspired by the same ‘mountain’ icon that also gave us the ‘food pyramid’. The highs and lows are not valued in the same way in the human and scientific domains. The complex details and abstract simplifications of both specific and
generalised approaches hide a global failure to map adequately cases like that of children’s ‘normal childhood illnesses’ (see <Extract F16/ Variable body>), or the present ‘local-case’. Such views produce deeply confusing paradoxes. For example, a ‘hyperactive’ state can be a negative powerful reaction physically, but it may also be a creative state for the mind. We hear, in allergy medicine, that we (psychologically) ‘crave what we are allergic to’ (what causes allergy). This is symmetric to ‘we develop allergy to what we crave and eat repetitively because it gives us a high’ (what causes craving). Another example is the ‘healing crisis’. Causality itself, as an explanation, is confusing for interactive and systemic conditions, and even theorists are caught in their own attempts to be precise: Selye operated such a shift in explanation: ‘…errors in our adaptive response to stress’. Selye’s basic notion of ‘damage syndrome’ is related to distortions that are symptomatic of adaptive strain, or work made necessary by stressful disturbance. In refining a detailed explanation (in Weiner, Randolph, as well as Selye’s full-fledged explanations), the notion of damage appearing with strain related distortions is turned on its head (‘turned around’), into an abnormal failure of coping with normal disturbances, a failure of reacting to them, of compensating for them. Another type of explanation approaches the problem as an integrated time-sequence: although ‘adaptation’ is first experienced as a positive reaction to stress, when it persists it becomes a ‘maladapted’ (patterned) behaviour or condition, which has progressive diverse negative consequences. This is related to ideas of conditioning, programming, repetitive exposure to stressors (etc.), that ‘grade’ the ‘whole’, placing first emphasis on the psychological mind or on the physical body. Selye’s view seems to be more related to a distinction of spaces: damage to the body/self-system, which strains to adapt to a stressful

3 On vocabulary: ‘Turn around’ is an undifferentiated expression. Elsewhere in this work, a ‘turn-around’, can be a ‘turned inside out’, ‘turned upside-down’, or ‘turned on its head’. This depends on which geometric projection is required to explain something in a particular case. These expressions mean the same thing, topologically, but not in terms of words, numbers, classic geometry, or symbols. In conventional explanation or description, such a ‘turn-around’ can be an ‘inversion’ (especially linguistic), a ‘reversal’ (in practice), or a ‘return’ (in theory or arcane texts). The wording depends on the underlying iconic imagery habitually attached to the conventional context described. However, these reduced expressions loose their topologic meaning. Conventionalising this generic notion produces descriptions based on symmetry or circularity (explained in <Nexial-topologic deployment>).
world. The fundamental problem is that the various types of explanations produce conflicting evaluations and, experientially, the cultural ‘double bind’ that expresses the ‘constraining shape’ of the ‘context’ of our lives, manifesting in the ‘feeling of weight, pain or force’ (Harries-Jones 1995 p. 134-139, on Bateson, who considers this ‘context’ also as a non-discrete ecology).

Another example of ‘turn around’ can be found in the Peckham Experiment. The 60% of individuals who believed themselves healthy and felt fit or in their usual health, in spite of the disorders found in them

‘were drawing on the body’s ample reserves and/or on the other hand, were – consciously or unconsciously – limiting their environmental excursion to meet the limitations imposed on them by their concealed and insidious disorders. The progressive failure of their powers [of compensation] thus being successfully masked by either or both of these procedures… In fact, however, they were progressively loosing the resilience of health that the body’s reserves sustain and promote.’ (Williamson & Pearse 1980 p.14-15)

The same inversion between the human (or anthropomorphic) and physical / scientific (or ‘physikemorphic4’) views are at work here: The ‘body’s reserves’ promote human resilience, but cause physical illness. For naxial-topology, both these physical and human manifestations are expressions of the same ‘state’ of strain-stress, which wastes the body’s resources.

**From survival to ‘ease’ and ‘proto-health’**

Compensation is one of 3 different modes of existence (or ‘orders’):

‘Until consigned to the grave, man is presumed to be “alive”… It is… within any doctor’s experience that practically a whole lifetime may be spent in the process of “dying” … We may be in a third state – “surviving” --. […] Man] may be in any one of three different

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4 This term is meant to show the symmetry with anthropomorphism and the reduction of meaning to the ‘physical’, ‘natural’, or ‘material’ spheres. ‘Morphism’ means giving form. ‘Physike’ is the feminine of the Greek word ‘physikos’, of nature. In Old French, ‘phissike’ meant art of healing. About 1300AD, ‘fisike’ was a healing potion. In Middle English, ‘phissic’ meant a medicine to move bowels. The root ‘physcein’, to bring forth, gave rise to ‘physics’, the science of matter and energy, but also to these notions, which are related to medicine – the art that concerns the ‘natural’ body (currently conceived as ‘material’ or ‘physical body’). The word ‘physike-morphism’ is used here to highlight this reduction of meaning.
modes... living, surviving and dying. More precisely: functional existence, compensative existence, and de-compensative existence.’ (Williamson & Pearse 1980 p.13)

‘The totality of these changes [damage and manifestations of adaptive reaction] – the stress syndrome – is called the general adaptation syndrome (G.A.S.). It develops in three stages: (1) the alarm reaction; (2) the stage of resistance; and (3) the stage of exhaustion.’ (Selye 1976 p.1)

Such sets of 3 forms or stages are very common in the construction of explanatory theories. This modal division into 3 forms is parallel to dual notions such as ‘sick or not’, scientific-human, and paradoxes (further discussion in <Many perspectives>). Randolph (1970) has his own version: a scale of activity: ‘up’ (⊕ graded toward ‘hyper-’), ‘down’ (⊖ graded toward ‘hypo-’), and ‘normal’ (0), which is also developed into 9 levels (see below). Comparing such schemes, and trying to match the modal or scaled representations (and many other kinds), reveals some interesting associations. In this case, one match would suggest 3 sets of correlations: (alarm, functional, alive, hyper-), (resistance, compensation, surviving, normal), and (exhaustion, decompensation, dying, hypo-). For example, one could interpret that feeling ‘alive’ is a hyperactive state related to a brain in alarm, yet also makes things work better in the body. Such a matching and correlated global meaning seems to depend on one’s perspectival bias, and more particularly on one’s life experience. Depending on this, many other words can be used (eg adaptation, sensitivity). In this match, all three modes may lead to difficulties and problems of health-sanity such as uncontrolled hyperactivity, chronic compensation, or recurring exhaustion. The CFIDS-FM-ME syndromes display symptoms of muscular tension and immune hyperactivity, of exhaustion, and a strong mood of 'trying to survive'. Approaching the issue through such general categorisation begs the question, to which category does the syndrome belong? This depends on interpretations, and the specialised medical literature reflects such orientations in its controversies concerning methods for diagnosis (and treatment). Different thinkers do not attach the same particular meanings to the words (especially because of the choice of human and technical interpretation), and this is a major source of confusion. For example, human resilience, which gives ‘powers of compensation’, Selye calls a physical ‘resistance’.
‘The nervous system and the endocrine (or hormonal) system play particularly important parts in maintaining resistance during stress. They help to keep the structure and function of the body steady, despite exposure to stress-producing or stressor agents, such as nervous tension, wounds, infections, poison. This steady state is known as homeostasis.’ (Selye 1976 p.2)

Having to ‘resist’, or a habitually disturbed state, is not a particularly pleasant human state, in my experience. ‘Survival’ (Williamson’s other name for the power of compensation) is, to me, a near-critical balancing act, a difficult state of small ‘emergency’, of ‘battle stations’ to ‘cope’, ruled by adrenalin and cortisol, hormones and nerves, even though it is considered normal and even valued. Although I know some find it exhilarating, the ‘resistance’ and ‘resilience of health’ are, to me, a ‘survival mode’ that uses up the ‘body’s ample reserves’. In low-grade conditions, chronic or acute, in which this use of reserves can be felt directly (from mere sensations up to pains such as that of catabolism), this state gives an impression of ‘in-dying’. (Further discussions in <D3\ Signs of dying and sense of ‘in-dying’>, <EE8\ Undoing the ‘in-dying’>, and <EE 16\ Cold of dying>). Moreover, none of the terms ‘functional, compensative, or de-compensative existence’, and ‘alarm, resistance, or exhaustion’ fit to describe the state I associate with Williamson’s ‘ease’ (explained as ‘non-deployment’ in <Nexual-topologic deployment>, and which I dubbed ‘proto-health’. (Experiential descriptions of some aspects are provided in <EE1 > to <EE5>).)

There are many examples of inversions and ‘turn-around’, in various fields. In <Extracts F13\ San Jiao & Inversion>, in particular, are gathered examples concerning linguistic inversion related to gender, and to the notions of ‘primary’ and ‘secondary’, which are used in defining chronic syndromes (see <F4>). Here is an example that is relevant to the ‘soma-analysis’ method used in Phase one of this study:

‘A similar absence from Iliadic language is a word for body in our sense. The word soma, which in the fifth century B.C. comes to mean body, is always in the plural in Homer and means dead limbs or a corpse.’ (Jaynes 2000 p.71)
Consistent with this Greek meaning is the sensation-impression of ‘in-dying’ just mentioned, in which all aspects of the lifeworld, body included, are damaged, ‘dying’, ‘wasting’ (eg social relationships, economic or professional position…). In modern separating terms, this manifests mentally in a global mood of distress, but also physically in swelling of peripheral areas, at an early stage, which spreads through the mass of the body, and develops into other, worse symptoms (see section ‘Unfolding-enfolding’ of ‘immune defence’ below). These physical correlates are consistent with the Indo-European etymologic root of *soma*, an older etymology. In the nexial-topologic framework, the observations involve pressure, ‘activation’, ‘projection’, and focused or generalised reactions and extremes.

**Difficulties with words**

The problems of expression in words, and those of value (see chapter <Validity and valuing>), in medicine as in other fields, are a serious impediment to the description of non-specific phenomena that are not generalised, general-systemic, or generic (relative to many genera), but simply undifferentiated. This is the case also for non-localised phenomena such as worldwide shifts in human culture, planetary ecology from prehistory (Mithen 2003), and human health. One such phenomenon is that of ‘just being sick’:

*The Search for a Name*: Even such innocuous physiologic experiences as a brief period of muscular work, excitement, or a short exposure to cold proved sufficient to produce certain manifestations of an alarm reaction, such as an adrenocortical reaction. Obviously, these could not be described as strictly nocuous agents; we needed a more fitting name… I again stumbled upon the term *stress*, which had long been used in common English, and particularly in engineering, to denote the effects of a force acting against a resistance. For example, the changes induced in a rubber band during stretching, or in a steel spring during pressure, are due to stress. Physical stress is certainly non-specific. […] It was pointed out that the word *stress* is indiscriminately applied to both the agent which produces G.A.S. (general adaptation syndrome) and to the condition of the organism exposed to it. […] This lack of distinction between cause and effect was, I supposed, fostered by [my not distinguishing in English] between the words “stress” and “strain”. […] Actually, I should have called my phenomenon the “strain reaction” and that which causes it “stress”, which would parallel the use of these terms in physics.’ (Selye 1976 pp.45, 50)
Conversely, the notion of ‘health’ has no generally accepted definition:

‘The word “health” is open to devious interpretations by medical scientist and layman alike. […] it appears to be without technical status as a distinct process in biological science. Wherever no signs of disorder or disease obtrude, a state of health is tacitly assumed to exist.’ (Williamson & Pearse 1980 p.309)

‘Though a tendency to order of entities in the living world has been recognised and discussed by not a few observers, as yet, there has emerged no distinctive word… Let us here name this attribute *Eutropy*. Within this term the observable tendency to health, wholeness and healing comfortably finds its place: a manifestation of the eutropic principle manifest in each living entity. This tendency to the maintenance of wholes and to the origination of new wholes…’ (Williamson & Pearse 1980 p.272)

The second passage involves highly sophisticated ideas and is not equivalent to the first. They represent different perspectives. Throughout this research project, such difficulties with finding words to describe non-specific phenomena, non-localised properties, and an ‘undifferentiated’ field or space that is not ‘real’ or physical, have impaired my formulation of findings and explanation of the images. The same is true for the language of numbers in mathematics, statistics (medical ‘normal health’, ‘returning to normal’) and probabilities (medical ‘risk’ of disease *in the future*, susceptibility acquired *in the past*). The problem is also endemic for theories, and descriptions of the ‘body’ by using flat geometric models and images, the spherical icon for the ‘system’ or ‘environment’, and the asymptotes of ‘approaching’ in conventionalised terms.

The undifferentiated ‘reactive state’, and that of ‘ease of health’, are impossible to express in words without causing language-dependent paradox and perspective-based disagreements (eg confusion of undifferentiated ‘ease’ with ‘easy’ processes and patterns of activity):

‘Ease is one of the outstanding action-patterns of health. It appears, for instance in the infant as *serenity.*’ (Williamson & Pearse p.188)

‘Immune bodies (induced by previous infections) can by no means always be found in all those manifesting insusceptibility. Between the “immune” and the “insusceptible” there is a difference in the body’s action-pattern. We do not, however, yet know on what this attribute of insusceptibility rests.’ (Williamson & Pearse 1980 p.238)
Williamson’s state of ‘ease’ of health is an undifferentiated ‘insusceptibility’, and a ‘being unaffected’ [‘proto-health’ in this dissertation,] but these are often translated into a ‘being immune to’ (things in general, or particular things or conditions), – that is, a dual formulation, or being ‘strong’ – a nexual formulation. The perspectival notions of ‘patterns of activity’ (or ‘action-patterns’ or ‘active patterns’) are dualist and polarising, and are the source of a linguistic drift that beats the intent of describing an undifferentiated ‘state’.

The mystery Williamson mentions is one of the deepest questions that have plagued medicine and civilisation in general throughout history, in any culture. This is reflected in ancient literature and even archaic myths, and is related to prehistoric concerns not only with survival, but also with thriving rather than being subject to environmental influences, made uncomfortable by ‘beasts’, drought, temperature, etc. In my observations, this sense of being unaffected is a state of not having the need for resilience, resistance, or for using reserves to react, battle or defend. Being ‘unaffected’ is not a defence or work to be ‘immune to’, nor a compensation of disturbance or of a weakness that makes one ‘susceptible to’ or ‘affected by’ (etc.). This state requires no purposeful mental attention, no brain central control (see <Extract F6>), no healing work, or practice. It cannot be described with the conventions of our complex views of health or humanity or physicality, except through negatives (‘not affected’, ‘insusceptible’) which do not say positively what ‘ease’ is.

**The shaping of health: using topology to image its changes**

Only the fluid animated geometry of topology allowed me to restore some integrity to the plethora of divisions, differentiations, individuations, specifications, and reintegrating generalisations, complexification and simplification of our many models and representations, and to our physicality, but not by reframing the material ‘body’ as ‘embodied’ or as a ‘whole system’. (The latter, however, was a perspectival stage of integration, which I had to deconstruct.) Nexual-topology brings out simple images that underlie our perspectives, including notions of illness and health, and their developments into iconic symbols such as

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5 The word I chose, ‘undifferentiated’, is not quite adequate and is discussed in <Many perspectives\ Problem of the undifferentiated>. 
‘growth’. It also clarifies the practical implication: dynamics (or duality) and polarisation (or activation) are not the only way to understand the body’s health (and everything else).

An imaged or geometric questioning is not rare in philosophical works, although this has not yet been pointed out, it seems, in philosophy of science. Some words in Williamson and Pearse’s work provide clues that disclose a form of thinking based on imaging: ‘What does health look like?’ (Williamson & Pearse 1980 p.23). Their question was less that of physicians seeking solutions and more that of bio-philosophers trying to envision the ‘whole picture’ attached to health. Their text is sprinkled with topographic terms, such as place, building-up, field, surface. Other thinkers also have this characteristic (please read <Extracts F5\ Gauging thinkers>). This text also contains statements that demonstrate attempts to express the limitation imposed by the systemic notion of boundary and at finding a vocabulary to express an understanding of non-conventionalised, global properties of covariant differentiation:

‘…not all that impinges on the external surface of the living organism enters into mutual synthesis in the progressive action of that particular organism… Essentially this synthesis is one of the “self” with the “not-self”.’ (Williamson & Pearse 1980 p.205)

‘The question still remains as to whence comes “direction” of the directable machine [the body].’ (Williamson & Pearse 1980 p.154)

‘There is no inherent antipathy between the two conventions, Space-Time and Memory-Will […] the field of choice of the specific diversities in Memory-Will and the field of chance of the equite entities of Space-Time.’ (Williamson & Pearse 1980 p.273)

‘Motility in Will… is not effective: nor is it “causal”, inducing a chain of sequential events. On the contrary, motility spontaneously inducing fields of unity – so bringing together apposite diversities in Memory – is orientational of the content of Memory. So the affective attribute of motility in Will is related to the effective operation of the organic mechanism.’ (Williamson & Pearse 1980 p. 190)

The words ‘orientational’, ‘direction’, and ‘surface’ even summon directly geometric images used in topology (see also <Extracts F18\ Rules of localisation-extension in the literature>).
Modelling health: from conventional ‘growth’ to topologic ‘deployment’

Inducing, directing, orienting, and producing surfaces, are what a growing foetus does as it temporally ‘comes to exist’ in space. There are other ways of differentiating what is habitually called ‘growth’:

‘Yin and yang are two phases of a single qi that give rhythm to life and the circulation in the body. Their deployment in a spatio-temporal closed schema is operated according to cyclical and continuous motion.’ (Despeux & Obringer 1997 p.27, my translation – French text below⁶)

Growth will be presented here as an aspect of ‘deployment’; a full explanation of my understanding of such ‘deployment’ is provided in chapter <Nexial-topologic deployment>. The notion of ‘growth’, central to some cultures (Chinese in particular, see Allen 1997, but also Western: economic growth) makes many of the processes involved invisible. For example, in the formation of kidneys during foetal growth, there is resorption of previous structures developed in early stages, degenerating certain parts. The same is true for the tail of a tadpole that metamorphoses into a frog. The conventionalised notion of growth (as a directional, or a sequential timed spatial process) is a gross reduction of ‘deployment’. The limitation involved in the idea of growth has major implications in both health (eg fibrous and cancerous growths) and ecology (eg human and economic growth have destructive impact on health as well as on the wilderness). The technical (scientific) idea of growth is symmetric to that of development in the human domain; both produce the re-integrative idea of evolution. This means to consider deployment automatically as an improvement.

In the following sections, I will touch on three nexial-topologic properties I found empirically, which are of particular interest for the unclear origins of the syndromes of low-grade illness. One particular type of consequences is detailed, which involves the effects of food on a human being. Note that these descriptions relate to the ‘local-case’ studied experimentally (they are ‘what it is like’ for my local observation), and generalisation involves some precautions. Nevertheless, some elements are echoed in the sphere of
literature that arises from the core of culture (see <C6>), especially the intuitively derived healing and health mapping techniques (topographic style of ‘diagnosis’ – see <D2> ‘Body indicators’>). This suggests that the local-case is not unique: there must be a small section of population that experiences ‘health’ generally as it is modelled in the present thesis. The properties described in the following are expressed as they were observed.

‘Brain-central-control’, loss of sensing, and instability

Property 1: Entraining brain-central-control is accompanied with distortions and limitations, including loss of internal sensation, progressive systemic damage. Among these limitations are the reduction of the observing activity to that of sensory perception and its derivatives (eg instrumental, imagination, etc.), a reduction of internal sensation and of external awareness, a perspectively biased rise of either pain or pain-killing, progressive ‘damage’ to systemic integrity, and a loss of the capacity for ‘native gauging’.

The reduction of ‘external’ awareness concerns physical things (hence increased incidence of accidents and involuntary self-injury to the material body-object), and insensitivity to the state of ‘other’ people or animals (especially their struggle or pain). The self-centred survival mode does not encourage caring for others, place (and the environment in general), or the body.

My observations included the little differentiate ‘general mood’ that underlies the more labile, agitated emotions. When the brain is entrained (activation-projection – see <F6>), agitated emotions can express either pain and struggle (for the Left- perspectival bias), or pain killing and excitement (for the Right- bias). If positive, we tend to simply use them and ‘ride the wave’ of a ‘high’. If negative, they can be alleviated, or compensated in various ways.

‘A further curious fact is that, so versatile are man’s emotions, he can enjoy either living, surviving or dying so that existence in whatever state may feel and seem worthwhile […]’

6 [‘Yin et yang sont deux phases d’un seul et même qi rythmant la vie et la circulation dans le corps. Leur déploiement dans un schema spatio-temporel clos s’effectue selon un mouvement cyclique continu.’ (Despeux & Obringer 1997 pp.27)]
Unfortunately for the organism, the sense of satisfaction... is seriously misleading, for it permits a lack of awareness of – and so concern for – defects as they arise in the body mechanism.’ (Williamson & Pearse 1980 pp.17-18)

‘By [the] process [of adaptation,] long-term harmful effects are made to appear beneficial in the short-term. [...] Instead of discomfort, a sense of increased well-being now follows exposure [to stressors]. [...] There is a tendency then to consider oneself to be no longer reactive [to allergens]... The associated counter reaction goes unrecognized.’ (Mitchell & Hill 1975)

Many current writers on general health and stress consider this ‘awareness’ to be mental, governed by attention (eg Fehmi & Fritz, 1980); and think that it needs to be cultivated, through ‘opening boundaries’:

‘Nonlinear mathematical models are approximate descriptions of the dynamic functions of biological systems. It is acknowledged that a more realistic account of physiological rhythms is needed. Feedback, that in part accounts for them, is provided by information exchange within the organism and between organisms by signals of a large variety of kinds. In this way, the organism is kept informed about its own internal state and the condition of the external environment.’ (Weiner 1992 p.283, my italic)

‘Rhythmic functions manifest stability but, being dynamic are perturbable.’ (Weiner 1992 p.284)

Such views are obviously developed from what I will define as ‘advanced’ models, which involve boundary separation. Their related ideas of dynamics and harmonics are inherent in the 2 fundamental parameters at their core (see <Many perspectives>). What is less known is that, as Weiner notices, these perspectives contain an in-built provision for any ‘system’ to be perturbable, disturbable, susceptible, ‘affected’ – in other words, subject to instability.

These parameters of perspectival description govern most of the health strategies we use and our common attitudes toward the body. These often result in such negative health developments, whereas there would be no instability or distortion without the perspectival focus on the mind, brain, and head, and the related attitudes and strategies.

The present study found, instead, that ‘awareness’ involves physical sensation as much as the mind, and is better modelled without distinguishing mind from body or person, and sensory-perceived world from them.

The loss of sensing could be also related, physically, to ‘stress-induced analgesia’:
‘The discovery of the brain-gut peptides and other advances in neurobiology have [...] given] a new impetus to stress research. (1) Two forms of stress analgesia have now been described [...] (2) The function of brain peptides is to produce patterned physiological changes, which are exactly what an integrated view of the responses to stressful experiences demands.’ (Weiner 1992 p.5)

Stress-induced analgesia uses opioid pathways, well known for their usefulness in case of injury, and similar pathways (eg cannabis-like, used by cancer patients), but also non-opioid mechanisms. The latter involve neurotransmitters, and are altered by age and by oestrogen cycles in females. The difference between males and females appears to be deeply significant for both practices of health and for the cultural models, theories, and icons, we live by. I suspect that this difference, and that between adults and children, would not be relevant in the state in which the ‘native gauging’ is accessible because sex hormones and central nervous control are not chronically activated and reactivated. Many of the low-grade illness syndromes are characterised by symptoms of pain, reactivity, recurrent crises, and are often construed, conventionally, as ‘too sensitive’. This high-sensitivity is different from the subtle sensitivity known to be the ‘awareness’ necessary for health (PsychoNeuroImmunology Research Society, 2006). In the local case of instability studied here experimentally (my health), the second kind of analgesia does not seem to operate (I have not tested the first, for specific injury), but the third does. At a first order of ‘activation’, pain disappears. In further strain, small, but sharp pains arise internally without outside cause7. ‘Pushing it’ causes even worse, unbearable pains, from localised auto-destructive processes (see EE17\ Burning Fire>, <EE 16\ Cold of dying>). This is echoed in the literature on the yogic ‘Kundalini’ (see C6>, for which this ‘burning’ is an ‘advanced’ experience) and in the archaic texts (see <Ancient perspectivalism>). ‘Pushing’ the activation-projection capacity and brain central control can compensate (eg putting down a reaction, triggering healing), but it can also add brain-triggered pain (not just ‘nervous

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7 For example, from muscle catabolism, and brain-triggered along the spine, probably release of cytokines, which eventually ‘projects’ topographically (to the surface) into boils on the skin.
pain’). This tends to suggest that as much as the brain can be an ally in hard times, it can also be our worst health enemy.

In a compensatory or adaptive state, the awareness of being stressed seems to disappear, is no longer felt (no sensory perception of internal strain or pain), but the cost is drastic:

‘A man, who was expecting a multiple heart bypass, said to me, in a hydrotherapy session, “How can this happen? You would think it would give some kind of warning! But I didn’t feel a thing!”’ (Bouchon February 2006)

Thus come diseases and ‘sick days’, but also chronic illness (the syndromes of instability) and ageing degeneration – a ‘lifetime of dying’ –, as well as a global but invisible ‘wasting’ away (see <Nexial topologic deployment> and <Conclusions>). Central control can restore health to a point, and displace discomfort with ‘a sense of increased well-being’, but without undoing the lowest-grade (or ‘underlying’) systemic damage.

‘Delayed effects [and] changes in behaviour, in susceptibility to disease and particularly to the development of degenerative changes follow.’ (Mitchell & Hill 1975)

The general ‘mood’ can reflect this, retaining a low-degree of unease. In my observations, negative emotions (eg stress, struggle) are correlated with specific systemic strain, but the sense of ‘ill ease’ relates to a general, chronic or long-term degeneration damage that colours the general mood to a sense of ‘low’, independently of whether emotions are good or bad, small or extreme. It seems to exist for both L- and R- biases, whether it is recognised or not. The reduction in internal sensation can be useful in emergency (eg not feeling pain while running away, fighting, working hard, or sitting at a computer), but this ‘boundary state’ has another cost: the loss of ‘native gauging’.

The reduced ‘sensing’, which I have formulated (not quite adequately) as internal and external, seems to be what Williamson, Selye, and many others, call ‘awareness’. They go on to extol the virtues of the mind to ‘expand’ it, but cultivating this mind requires working with the brain, and increases the hidden damage it is meant to reverse. Using an undifferentiated approach, I will redefine this ‘sensing’ as a ‘native gauging’ and will describe it with nexial-topology. In conventional language, it can be construed as a locally apprehended, global
awareness of non-local topologic properties of distortion (‘twisting’ in my imaging vocabulary). What does this mean?

The loss of ‘native gauging’ means that the sense of distortion is lost. This results in the inability to notice distortion and deformation, or warning signals and signs; failing therefore, to detect impending illness or disease and ‘feel it coming’. For example, in the physical realm, distortions of posture are medically addressed only when they extend beyond certain percentages of bending; and small deformations (for example, of the face) are ignored. Nothing is done about them until they can be categorised as symptoms of a disease. In other realms than the physical, this loss means that the practical capacity to know, in any particular conditions, when ‘it is going too far’, or how to stop the emergency state, disappears. A common saying is, ‘He/she does not know when to stop.’ Being unable to use ‘native gauging’ means that one cannot sense an approaching extreme, or the risk of ‘passing the limit’ or ‘crossing the line’ (‘boundary conditions’).

Cultural strategies for normalising or restoring the ‘body’ or ‘person’ (system separate from the world), involve the brain, the mind, and the self, entraining them, or pushing them ever further. In the experimental local-case of this research, these almost universally recommended health (and related) strategies are a trap rather than a help, both for the long term (physical wasting) and the short term (‘hypersensitivity’ or instability).

This ‘turn around’ is not taken into account in any form of medicine that I investigated, and it keeps both chronic wasting and chronic instability in the shade, unaddressed, and their workings relegated to the most primitive of myths. Nevertheless, my empirical investigation shows that this situation is not irremediable. It brought to light certain spontaneous behaviours that are part of, and restore ‘ease’, and do not entrain volatile emotions or behaviour or all-inclusive instability (see <C8 Spontaneous yoga> [or rather Dao Yin], and <EE1> to <EE6>). They are culturally suppressed, but using the modelling method introduced in this work suggests that this does not have to be.
**An application: feeding, effects of food, and drifting taste distortion**

Nexial-topology enables to describe 3 ‘orders of deployment’. This is detailed theoretically in chapter <Nexial-topology deployment>, but a practical example will clarify what this means. The modelling of these orders was derived from experimentation with individual nutritional substances and from related observations of other aspects of the lifeworld than the ‘physical body’). The following is a summary and concerns food, herbs, and other substances for healing and are the object controversies, contradictions, and over-generalisations in the literature, and a ‘lost knowledge’ in medicine. The following lists different uses and effects in three different ‘states of health’ (orders).

**Order 1**: (mostly children and a few women, it seems)

Foods have direct systemic effects on metabolism and physiology, anatomy and appearance, behaviour of person and brain-mind, and a global effect on the lifeworld. Usual foods are chosen instinctively (not quite a well informed ‘choice’, but not unconscious) and have an effect of ‘bringing back on track’ (eg a taste for tomato, carrot, cucumber and other bitter greens in particular have been validated by nutritional science). If healing is necessary, micro-doses of purified substances (eg 1mcg of tertroxin T3) are sufficient to support it.

**Order 2**: (normal physiology with hidden chronic low-grade damage, similar for most adults, but not quite all)

The effects of foods are no longer easily noticed because feeding is habitual (regulated: 3 meals a day, or otherwise subconsciously addictive). For the same reason, instinctive or intuitive food choice becomes ineffective (eg craving), and repetition eventually brings on ‘allergy’. Foods, especially those affecting the brain, are used *unconsciously* as ‘self-medicating’ to stimulate, calm, balance or compensate (eg salt, sweet tastes). Alternatively, greens and other foods may be used, but according to a mental schema of ‘medicine’ or ‘healing’ (eg bitters for bitter taste sickness). The focus is more on medical-helper guidance in the use of herbs or drugs to heal or cure than on auto-reliance in keeping healthy. What is conventionally called ‘small doses’ of purified substances are necessary (eg 20mcg of T3, much larger than the previous micro-doses – 1mcg). In this state, one eats much more to fuel
the brain and muscles (especially ‘energy foods’ such as carbohydrates and meats), and
drinks either more than in the previous state, or less, but in most cases water has to be
‘spiked’ to be utilised properly (eg with lemon juice, cordials, tea, coffee, chocolate, coca,
alcohol, fortifiers, herbs, nutritional supplements, etc., – see <EE1>). This represents
normality, and archaic texts mention that we ‘eat a lot and yet still feel cold’ [or hot].
Concurrently, body temperature distribution is uneven (this might be related to ‘ground
substance’ damage – see <PPT2>). Digestion becomes less effective, the gastro-intestinal
tract becomes plagued with anaerobic bacteria, inadequate levels of stomach acids, and other
difficulties. Consequently, more processed foods are ‘necessary’. In parallel, the perspectival
bias now becomes apparent in changes of taste. One ‘needs’ a lot of protein or lipids (fats,
oils), or glucids (carbohydrates), according to a chiral scheme (left, right, middle, not
respectively in this list) that seems to drift, collectively, through history, in short and long
cycles. Currently, the dominant emphasis laces most of our supermarket food with glucids
(eg starch and gums). A child thrown into this condition ‘does not like vegies’, and the adult
ingests little fresh fruit or uncooked vegetables, and hardly any nuts, seeds, or berries. The
taste becomes distorted into ‘likes and dislikes’, usually attributed to ‘body type’ and
‘personality’.

**Order 3:** (common illnesses and diseases that people ‘live with’ or experience
recurrently, up to ‘endless state’ – described in <7- Deployment> and conclusions).
The progressive loss of effectiveness for even strong foods to be useful as self-medication (a
‘shot’ of sugar, a binge on chocolate have less effect), lead to introducing de-conditioning
intervals and periodic reset or reconditioning of the system. Increasingly powerful food-
derived or synthetic substances (eg drugs and medicines) at high-dose, with repeating
protocols, are required to see effects (eg repetition of 20mcg doses of T3 in one day, regular
daily vegetable juices or amino-acids). They have side effects and leave progressive systemic
damage (eg high blood pressure medication on the elderly). Their use may now be a
calculated risk in some individuals. Fast, powerful, or generalised (spreading) effects are sought (eg feeling better almost instantly, seeing symptoms disappear quickly).

The investigation left no doubt about a general trend: 

*How much* we need to eat, *how processed* the food has to be (hence industrial and house work), what our ‘*tastes*’ are (what we ‘like’ is a bias), and how we *feel* despite the food stuffs (eg junk food) and/or thanks to them (eg comfort foods), are directly influenced by our personal and collective behaviours, including those, cultured and civilised, that are globally damaging to the planet (agriculture, industry of our comforts, and their large requirements for water).

This is rarely visible in a study of the person or of the current society, but a more scientific view may show this, although, inversely the human (personal and collective) aspects might then tend to be neglected. The post-glacial archaeological record (Mithen 2003) gives indication that such changes in feeding behaviour, and the drift in taste distortion, may have a correlation to the progressive limitation in our diet range, as well as the loss of biodiversity and impoverishment of resources useable by humans. Such changes are also related to the deployment of cultural icons (geometric shapes) that are expressed in all aspects of civilised living (including rituals about Death and Life and the development of medicine), and in our species’ increasing dependence on them, something reflected in certain very old myths.

These changes may have had positive survival value during post-glacial climate change, and are still valued for modern adaptation to man-made stress, but they have reduced our capacity to live ‘in the wild’, without having to manufacture and work to buy all our comfort and survival props. Worse, they make genuine ‘ease’ unavailable.

It appears that we have used, and still use, taste and food to modulate orders of deployment. I found experimentally that certain foods (together with some vital behaviours) can help to reduce swelling and sense of gravity, stress and strain, and reduce somewhat (but not

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8 This is the case as I stimulate ‘specific-general thinking’ in my brain-mind to write the complex word explanations of this thesis, to the detriment of my health and comfort—see Appendix E.

9 Taste distortion seems related to loss of smell (an inverse progression).
completely) the sense of ‘ill ease’. This food range is mostly avoided because it belongs to what is construed as a ‘famine diet’.

When the craving or need for certain foods stops, the taste also tends to stop being distorted, directed to these foods. Altering feeding and taste, or stopping the alteration ‘locally’, can have non-local effects. If any sense of ‘need’ stops (no more global ‘state of need’), taste distortion also disappears, and with them many difficulties and problems (not only physical or mental) simply dissolve. Many practices, much problem-solving or compensating work become unnecessary, and the requirements for food, water, and other resources, diminish. A common saying for this is, ‘If your resources diminish, reduce your needs’.

**Another application: unfolding-enfolding of ‘immune defence’**

The methods developed for this project (topographic, nexial, nexial-topology) brought out two other properties that I have not found described, and which are indirectly echoed in archaic frameworks (see <Ancient perspectivalism>).

*Property 2:* The undifferentiated ‘activation’ of ‘defence’ involves water and swelling, which is different from ‘water retention’ and immune aggressive defence.

Swelling ‘in the mass’ of the body is a phenomenon related to activation of ‘water metabolism’ and its projections (eg transports, gradients, etc.), and has topologic properties. If it shifts into ‘aggressive defence’ (conventional ‘self’ defence), localisation occurs (eg congestion). That is, undifferentiated swelling (that would be conventionally labelled ‘systemic’) is a less ‘deployed’ state (for example less activated) than any ‘reaction’ such as serous secretions, congestion, irritation-based mucus production, and the extremes of inflammation (conventionally ‘non-specific’ immune defence – localised). This is in turn less ‘deployed’ (or ‘all out’) than specific immune defences (defensive targeted aggression), or generalised defence (system-wide) responding to invasion, infestation, infection. The words are complicated, but the sensations observed are not. The key is that the notion of the ‘body’ as a ‘system’ is limiting and constraining, and the objective observation of swelling in medicine relates to high emergency (eg swollen face in an anaphylactic reaction). The idea
of ‘degrees’ of gravity underlies diagnosis. For example, in the context of sustainable agroecosystems (Hill 1985), critical monitoring can be done using the normal ‘indicators of malfunction’ (‘problems that arise in the system’ – equivalent to ‘symptom’), those of ‘distress’ (‘common indicators that can be used in widely different ecosystems subject to different stressors’ – equivalent to the ‘signs’ of strain-stress related syndromes, or of ‘just being sick’). Hill also proposed that:

‘In addition to these indicators, we urgently need others that are able to provide us with an early warning of deteriorating conditions. For this, Rapport (1983) has proposed that we identify “indicator-integrator” organisms, species that are representative of their communities, are able to survive only in relatively unstressed ecosystems, and that are sensitive to a broad range of stressors.’ (Hill 1985)

For human physical systems, children in particular fit this description, but also some of the elderly, and a few other individuals. They widely suffer from the early indicators:

‘…during the early stages of development the “up” conditions (active responsive, enthusiastic, ambitious, witty) may easily be regarded as desirable, its connection with the “down” conditions (stuffy nose, occasional coughing and sneezing, skin disorders, gas, diarrhoea, constipation, frequent urination and various eye and ear symptoms) not being recognized. […] The negative effects… are either hidden or not taken seriously until they reach crisis proportions.’ (Hill 1985; citing Randolph 1970)

For some people, these indicators of deterioration are permanent, a way of life ‘hidden’ in the physiology and mind, and never addressed clinically. These ‘early indicators’ are known in allergy medicine, and are attributed to many causes. The present study describes them as topographic ‘signs’ of the ‘swelling in the mass’ that is not just ‘physical’ (eg swollen nasal mucosa, but also swelling sense of urgency and other aspects), ‘signals’ of ‘activation’ (eg cough, sneeze), conditions of entrainment of the head (eg eyes, ears and behaviours), and expressions of a critical state at whatever degree (eg constipation, diarrhoea, urination) that topology can model. Using this method, the problems of up and down confusion, of devaluation, of ‘turned around’ meaning (etc.) disappear and health as a whole presents a different profile. Particularly, the role of water in keeping physical integrity of the body is

10 The term is explained at length in <Nexial-topologic deployment>.
different to that conventionally ascribed to secretions, lymph, and other bodily ‘fluids’, which are considered as lines of ‘immune defence’ (some aspects are suggested in image in <PPT1 Body>.

**Property 3:** Immune ‘defence’ is activated through vertical projection along the spine and entrains either nervous or hormonal system first, then the other, into ‘brain central control’, which directs ‘aggressive defence’.

The direction ‘up’ entrains ‘brain central control’, tending to first enlist either nervous or hormonal system, then the other in a Left-Right twist. Which comes first depends on the perspectival tendency or bias to L- or R-. The brain, in turn, entrains specific defensive attack and generalised immune defences. The projection ‘down’ involves various substances and elements (eg pro-inflammatory substances and migration of defence cells from the head to thymus and other parts of the body). In the end, the immune system is activated and reactivated through vertical projection up and then down the spine. (Whichever direction is operating, they do not compensate but compound each other, turning the body into an aggressively defensive system-bubble). The directional effects would require research to generalise to other cases than the present experimental case.

In this case, swelling leads to nervous system activation (eg muscular tension, high cognitive and mental activity that is distorted). It then progresses down in the body, entraining sexual hormones, the HPA axis, and stress hormones. This triggers inflammatory effects projected onto surfaces (eg lower back, pelvic bones, ribs on the right side, boils on skin...), and finally spreads effects to the limbs and to the ‘core’ objects of the body, the organs. It appears that, at least for some others, sexual hormones are activated before the nervous system, and that this is related to psycho-mental tendencies of personality.

The flat map of figure 43 (p.95) presents a comparison of conventional ‘immune system defence’ and a view of ‘immunity’ derived from nexial-topology. Something is missing in the conventional image: it does not include ‘swelling’ as a global ‘state’. Swelling is only considered as a purely physical symptom, more or less localised, as for example in inflammatory red swelling, or oedema, or generalised as in ‘water retention’. This is a very
common and recurrent female condition, particularly related to menstrual activation of uterine surface degeneration. This image can be compared to the more intuitive approach to the body presented in <PPT1 Body>, in which ‘swelling’ (as opposed to a localised swelling) is a first-order deployment that accompanies various forms of spreading pain.

Figure 43. Flat map of immunity: something missing
Perspectival observation

Topology has various definitions. The discipline referred to, here, is a form of geometry that describes small or progressive changes of geometric shapes (see <Endnote C4\ topology>); most readers will not be familiar with this field. Rendering the images, with their variations, in words (think of the texts written by the ancient Greek philosopher-mathematicians) as well as what these mean, to the specialists (mathematical topologists, users of topology and philosophers of science) takes some work. Moreover, trying to ‘explain images’ and how the varying images have ‘similarity’ (rather than being analogy or metaphor) to the issues discussed in any kind of explanation, description, and research, is a daunting task.

In producing a written explanation that is a ‘continuous series of explanations, it is equally impossible without arbitrariness to distinguish… stages’, but ‘we are forced however to start [with one of the terms] for fear that too much will obscure the research’ (Piaget 1961 p.287). The description given in chapter <Nexial-topologic deployment of perspectives> takes such a form: it describes ‘stages’ of ‘deployment’ and is also split into a series of sections. This is an artifice to present a number of properties and their manifestations in various aspects of our realities, in our varied ‘perspectives’.

Among the modal mosaic of all the parts of this dissertation, some of the latter are reviewed through maps such as analytical generalist taxonomy, and a typology of graphic theoretical models (in <Many Perspectives>). ‘Classes and species [are] necessary but… depend as much on the free choice of the classifier as on the data classified’ (Piaget 1961 p.287). The findings associated with nexial-topology are broader, and model this bias, but they are more difficult to explain in words. The format of this dissertation constitutes an attempt to represent our views in general (what I call our ‘perspectives’, on anything), through texts, pointed quotations, images, and animations. It seems a good idea to begin the exposé with
some clarifications about the vocabulary I use, and with the most important of the presentation: the animated imaging. We say, ‘a picture is worth a thousand words’.

In this chapter, the reader is asked to view animations, read text with images, and to perform two experiments. The aim is to provide, before launching into abstract explanations, an immediate sense of the formation and deformations of the perspectival way of viewing by investigating summarily the process of observing. How it is used to ‘frame’ both experience and explanation gives a sense of their ‘deployment’ and of the globality of the implications.

**Representation and the ‘likeness’ of what ‘presents’**

The meaning I attach to these images and their variations is explained, but there may be some repetition and reformulation. These are unavoidable because there is overlap between various perspectives, which are projections and representations. What nexial-topology ‘shows’ is not a rePresentation, but a similarity, a ‘likeness’ of a global situation – particularly the ecology of health, as it ‘presents’ to the understanding (a global impression, or a sense of what is ‘lived’ and ‘acted’). The entirety of the work laid out in detail in this thesis is still only a re-Presentation¹ of this ‘likeness’. It is limited, among other things, by the choices I made regarding which issues to mention, those most significant in my research (its background in particular) and for the problem of low-grade chronic illness. Importantly, however, the images used and the texts should not be considered as partial views of a ‘whole’ or of a ‘larger’ view. In chapter <Nexial-topologic deployment>, I will show that such a ‘whole’ and a ‘complete view’ representation are not equivalent to the presenting situation because they involve a topologic ‘tearing’. The interpretation of ‘partial views’ is perspectival and would make it difficult, at times, for the reader to relate the different aspects presented. The geometric shape of the iconic projections depends on the property to be conveyed. A single ‘aspect’ of reality can have several properties, and a property can be displayed in many forms in various aspects of reality. For example, the

¹ Sometimes in this dissertation, a letter or two inside a word are set as capitals. This directs the reader’s attention to a fundamental difference between this word and another, both of which being related through etymology. Here, ‘rePresenting’ signifies that a representation involves a further deployment than a ‘presenting’ situation.
images and views are not ‘parts’ that can be added up to form one big image, like a reductionist puzzle. In this statement, ‘adding’ can also be understood, in a different context, as ‘multiplying’, or ‘spreading’, and these are ‘projections’ of a nexial-topologic property of ‘swelling’. If a bubble ‘swells’ up, its surface spreads and expands (as in visible growth), the number of ‘points on the surface’ multiplies, and the ‘size of its mass’ can be considered as adding more separate parts. These ‘projections’ (geometric meaning) of the property of swelling can be formulated very differently in various, limited contexts or aspects of reality: for example, growth of a foetus, prehistoric expanding migration of humans on the face of the planet, or multiplication of our modern theories and philosophies and technological objects. Yet, they are merely ‘projections’ of a single global situation (eg how we apprehend being an ‘alive' human on planet earth). [By ‘global’ I mean undifferentiated, not localised, rather than a spherical whole] Nor are the views and images like an integrated harmony that could be split into single harmonics which, played all together, form the harmony. Each image, or aspect explained, is just one way to show a property and its implications, in the most convenient way to make a point. Different ideas require different geometric projections out of the same situation, and that situation may be projected in different ways, geometrically, to highlight different remarks. For example, two opposed triangles symbolising a perspective on ‘origin’ and ‘end’, might be viewed, in another order of dimensionality, using nexial-topology, as two cones or as a line going through two points (figure 1). The aspects presented in this work sometimes cannot be compared, integrated, or transformed one into another, without an important loss, and that is the very reason why the nexial-topologic imaging of generalities and specifics is useful. It models how such transformations or transfers alter not just the representation but also what is being represented. This is the case for the ‘whole’ and ‘complete view’, and in particular for the ‘whole’ we call ‘body-mind’ (see also <Conclusions>).
**Animation: Trefoil**

First, an animation will give a sense of the limitations of our normal ways of viewing things through perspective. The animation "Trefoil" is included in the accompanying CD, or the reader might prefer to view it at the website:

http://www.westmont.edu/~dhunter/tref/trefsm.mpg

The point of watching this animation is to get a direct impression of the cognitive processes involved in ‘observing’ (or constructing reality in understanding or experience). This was one of the objects of the research project. The animation operates a zooming-in and zooming-out that brings the trefoil inside the box into focus and out (figure 2). There are three ways of learning from this animation.

**Three ways of viewing this animation with perspective**

*Objective view:*

The playing of the animation is equivalent to an observer focusing on an object of observation – the observed –, and then relaxing this focus. This corresponds to the traditional way of expressing the process of objective observation through a dual distinction: observer-observed. Only, the observer is not included in the field observed: the observer is outside the box and invisible. The ‘observing’ is equivalent to developing a line of vision.

*Subjective view:*

The direction of animation might be inverted. In this case, I might imagine myself to be the trefoil (eg my mind is, or my body, a ‘human instrument’ of observation), inside the box (as part of the world observed). Then, the self-body is at the ‘centre of the world’, which includes both trefoil and box. What I observe is the ‘entire field’, the ‘whole’ of reality, from my subjective viewpoint. I can see ‘all’ (including ‘myself’) ‘from within’, but what I see is biased: I am at the centre of the world, and can only see from that viewpoint. This is a common viewpoint in antiquity, when cultures and civilisations represented their own
country or capital city as the origin of all that exists. In this observing ‘position’ (a term used in Neuro-Linguistic Programming), I can only imagine what ‘world’ another body-self might see. The sense most akin to such a process is hearing, but the heard includes what is happening inside the observer. For example, when too thick inner ear fluids start to flow again, there is a slight noise superimposed on sound, that appears to ‘come from the world’ (This is related to more dire perceptions such as tinnitus but does not fit symptom descriptions). The previous dual distinction (observer-observed) is still operating, albeit in a different way: There is a baseline sound, a ‘local noise’ that alters what I see or hear of ‘the world’. This noise is akin to the theoretical assumptions we make in research and to the baseline of experience that we consider the most ‘primary’ (for example a chronic low-grade stress we call ‘normal’ or ‘natural’ — see also <PPT1 Body\ slide ?>).

Modal view: geometric framing

If one adds up the ‘object’ or ‘human tool’ (trefoil), and the ‘process’ (in-out of the box), the totality may be considered a ‘whole’ or a ‘complete’ field of reality. Now, the process of observing consists in ‘framing’ the ‘whole’ as (a) an observed (trefoil object or subject), (b) the observer’s frame of reference (box), with a reference point or ‘centre of projection’ that is external or internal, and (c) a moving or operational process (in-out observing) that can also be apprehended as connecting (a) and (b), or binding them, or (re)integrating them.

This wholistic framing can be construed in many different ways, including as a ‘Middle’ between ‘in’ and ‘out’, or ‘up’ and ‘down’, or a ‘balance’ between ‘left’ and ‘right’ (to see this, turn the image of figure 2).

Centre of geometric projection and ‘framing’

More simply, the framing is also a geometrical

Figure 3a. External centre of projection  Figure 3b. Internal centre of projection

2 The term ‘then’ can be interpreted as a temporal sequence, or as two aspects of the same ‘process’. It is used, here, more often to mean a logical separation by distinguishing arbitrary ‘aspects’.
projection. The notion of centre of projection is easy to apprehend visually. The animations
<6 Homothetic centre External> (figure 3a) and <7 Homothetic centre Internal> (figure 3b)
demonstrate the two Scientific-‘positions’ for observing, which correspond respectively to
the most popular Human-positions, objective and subjective positions. The more inclusive
modal framing makes a different and more refined distinction than these normal ways of
observation. It discerns 3 modes of ‘observing’: (a) an observed, (b) process of observation,
and (c) observer. The relevance of this to the study of physical illness is expressed in Furth’s
introduction to her study (medical anthropology) of medieval medicine in China:

‘Many social historians and anthropologists try to relativize post-enlightenment scientific
understandings of the body without rejecting the knowability of a natural world, including
a corporeal body, to which the language of health and disease refers. Thus Charles
Rosenberg prefers to say that culture “frames” disease rather than “constructs” it.’ (Furth
1999 p.13)

These three types of description of ‘observing’ correspond to three fundamental modes that
we use to ‘project’ geometrically both our experience and our explanations, through sensory
perception and interpretation (which I call ‘sensate’ and which can give rise to complex
mental imagery). These modes correspond to familiar abstract or concrete triads such as
objective-subjective-direct (observation), structure-function-connection, left-right-middle (a
number of examples are given in the next chapter). They are well known in mathematics
(each mode gives rise to a different logic and a different set of techniques). They are also
fundamentally dual (with built-in symmetry, this will be described in the next chapter).
These three dual modes are the basis for all the ‘perspectives’ we derive from ‘observing’:
all are dependent on the localising centrally a ‘human observer’ and on the use of the senses.
Vision and hearing, our preferential sensory modalities (this is known in philosophy of
science), and wholistic attention or perception, produce varied images that I named ‘general
perspectives’ (see below), because such geometric projections give us ‘perspective on’ the
conditions we observe outside, inside, or both. The perspectives are general because they are
used for understanding any aspect of human ‘reality’, of the ‘natural world’, and of the
‘physical world’ that humans experience. They also manifest in the ‘normal’ sensations of
living and of acting. These are our basic ‘ways’ to explain and experience what we tend to think is all that ‘exists’, and we differentiate them further into many diverse views and specific perspectives in particular contexts.

‘Placing’: localising, extension, ‘deployment’

Perspectival framing can also be considered a relative ‘placing’ of an ‘observer’ (eg outside or inside, or on a beam travelling in between), of the box, and of an observed. This is a Sc-‘localisation’ of all 3 elements of ‘observing’. The development of an objective line of vision, and its inverted version, a subjective hearing-like expansion in three dimension or H-‘extension’, can be viewed as a wholistic process. It can be reversed by paying attention to new aspects of reality (as done in human science), or by including all perceptions (as done with a naturalist or radical-empirical stance). This reversal, however, requires attention to detail or small clues, together with a re-integrating, and can be characterised as a tracking of special-relative aspects brought by framing or placing. The terms ‘placing’, ‘localising’, and ‘extension’ can be formulated as expressions of one property of ‘deployment’, which topology can model. Nexial-topologic deployment can model, ‘show’ or help to ‘see’ – with or without using the senses – the several ways in which ‘perspective’ can be derived from the ‘presenting’ situation. Hence, the perspectival way of ‘observing’ by framing is not the only way to know. If one does not distinguish or even discern ‘all’ the ‘aspects’, or does not discern ‘in the first place’ the 3 fundamental modes (or just 2), and if no central ‘observer’, thinker, self, or ‘witness’ is defined, then what is ‘seen’ is a ‘global field’ that is undifferentiated, without genus or species, real objects and subjects or natural ‘things’. It is just the ‘situation’. The images and animations used in this work are an indirect ‘seeing’, attempting to ‘show’ what the global field ‘looks like’. In themselves, they therefore can only be also representations of the findings of this work. The technique used for this, topology, has not been used before in the humanities, as far as I know). This is why an intuitive apprehension of images and animations by the reader is a crucial complement to this thesis. Nexial-topology, can be understood by using topologic imaging to explain ‘deployments’ into ‘perspectives’, but the nexial-topologic apprehension itself is non-
deployed, unlike this thesis, and requires the reader’s ‘apprehension. The dissertation only
aims to suggest that the non-deployed form is a native capacity of ‘gauging’, and that
‘nexial’-topology can model what it ‘shows’ (which is not deployed but ‘presents’). This
native capacity can be explained through a first-order deployment, as a ‘nexial’ apprehension
that does not separate the properties into perspectives (see below).

**Two experiments to introduce the ‘native gauging’ or ‘nexial’ apprehension**

The modal view described earlier is an integrative, framed, view that binds and connects
objective and subjective views, and unifies the qualities. There is a less differentiated, way of
viewing that I believe corresponds to what we habitually consider primitive, generic or
lacking individuation: the ‘native gauging’ or apprehension. Instead of seeing the ‘whole’ as
integrated, connected, interactive, binding, or even ‘glued’, as many current works on
complex systems or special relativity do, it sees it as an undifferentiated globality (or
topologic ‘field’, ‘space’, or ‘continuum’). It apprehends the global situation ‘like a ball’ in
the mathematical sense: the ‘inside’ of a sphere that *has* no limiting spherical surface. (It is
not ‘open’ as opposed to ‘closed’, or boundaried – see <Endnote C10\ Mathematical ‘ball’>).
The word ‘nexial’ is not used in the same way as what the proponents of wholism mean by a
‘nexialist’ approach. (See <Endote C5\ Nexus, nexial and nexialism>; refer also to the
remark above, concerning parts or aspects and wholes). The modal, integrative, or ‘nexialist’
view is a combination and, being inclusive, produces an objective-modal-subjective set.
‘Nexial’ apprehension replaces this modal set of observing positions, by a non-positioning
way of ‘looking’ without framing or placing. The nexial view does not discern modes or
positions.

In order to get a sense of what ‘nexial apprehension’ is, the reader might like to perform two
little experiments. Please refer to the appendices:

<B1\ Lever experiment> (figure 4a) and

<B2\ The 3-stars experiment> (figure 4b).

![Figure 4a.](image1)

![Figure 4b.](image2)

Lever experiment    3-stars experiment
(See Appendices B1, B2)
In the ‘lever experiment’, the fulcrum of the lever works in the same way as nexial apprehension. The ‘3 stars experiment’ allows one to compare the orienting directions produced by the objective, subjective, and nexial modes of observing. The main characteristic is that the directions cannot be made to match. This had been a major difficulty in my early attempts at reconciling all the perspectives I found in the literature, modern and ancient, into a ‘big picture’ into some kind of less complicated and more inclusive understanding. (an attempt I eventually abandoned, shifting instead to topologic geometry). It is also a major source of dissent between academics and spiritual schools alike, as well as between people in daily life. One typical example is that ‘correspondences’ in ancient frameworks of the Elements, never completely match (a source of much confusion). The nature of these disagreements can be apprehended by using the geometry of perspectives to ‘see’ how the three modes transform into each other (see <Many perspectives> and the Power Point presentation <PPT3 Geometry of perspectives> [slides]). Using topology, as explained below, allows us to ‘place’ these modes geometrically with respect to each other and to see how deformations or distortions lead to the various sets of correspondences. The geometry of perspectival projection rests on two fundamental parameters (see <Many perspectives>, further addressed in <Nexial-topologic deployment>), which are derived from the geometric consideration of observation. They can be approached as two generic notions that are the basis of all the general models, ‘advanced’ sciences of subtle details in specific context, and arcane philosophies. They also have a rather primal meaning in the realm of the human physical being, of internal sensations (as distinguished from sensory data – see Appendix <D\ Research materials and techniques> and Appendix <E\ ‘EE’ special experiences>).

3 The words ‘nexialist’ and ‘nexial’ are confusing, but I could find no appropriate word to describe the cognitive ‘position’ (I refer to Neurolinguistic programming jargon) of the ‘local observing’ in the ‘native gauging’.
‘Primus Movens’ – a general notion of N3p-polarised activity

Vertical ‘Axis Mundi’ – a generic notion of N2d-dualised direction

In the animation <1 Trefoil>, the imaged ‘motion’ corresponds to the ‘process’ by which we observe the world. In Western culture, it is conceived as the activity of the senses from which the brain-mind ‘receives’ perceptions. In India, it is more likely to be regarded as a ‘motion of the mind’, which ‘grasps’ at or pays attention to a particular object (figure 5).

In both cases, the activity, physical or mental, is polarised. This is an expression of the general parameter symbolised by “N3p-” (‘p’ for polar). In natural sciences, this is associated with physical movement of bodies, energies, and their related variables, and is often called ‘motion’. This can also be construed in terms of activation (priming, initiating, or ‘starting’ activity) — and deactivation (unpriming, stopping, or ending). In medicine, this is used in ‘activation’ (eg of hormones, brain-based control, or of immune system defence).

In humanities, this polarised activity is often thought of as induction, tendency (a new term is ‘enaction’ in Arco [2006], a reformulation of the archaic notion of ‘Life’ or of vitalism). In general, philosophical models of reality, the activity parameter is sometimes called ‘Primus Movens’ – the ‘primary’ polarised activity that induces ‘life’, ‘existence’, and ‘creates’.

Vitalism and animism are derived from this (Bose 1902), as are emotion, spirit, the Chinese ‘ressort du monde’ (Ch’i, ‘spring of the world’, ‘life energy’ or ‘breath’), and the archaic ‘churning’ of ‘the sea’ (the world). Expressed in the body, it produces the sensing or detecting of ‘signals’ and fluid motions, and the movements of the object-body as a whole or its sub-systems (eg muscles). In the context of nexial-topology, N3p- also represents harMonics (eg sounds, words, monads, holons...) and harmonies. In global or ‘nexial’ attention, it is a less sophisticated sensing of ‘noticeable activity’ (of any kind) (symbolised by “N3”). For my purpose here, “N3p-” symbolises any sort of ‘activation’ (polarised activity).

In animation <1 Trefoil>, the in-out direction of observation (eg line of vision) distinguishes observer from observed, or puts them in
symmetric positions, as a pair, with respect to the edge of the framing box (figure 6). This is an example of duality (or parity, in topology), an expression of the generic parameter symbolised by “N2d.“ (‘d’ for dual), which is associated with direction. This can manifest concretely as a vectorial orientation (‘directionality’ in the jargon of the human domain) such as intent to observe or direction of the attention, targeting a goal, or direction from which a cause effects visible consequences, and other related notions. It can be also abstracted into more general, dual notions such as self-world, in as the experiment with the trefoil demonstrates. Without the duality or symmetry, it is a mere line without direction (symbolised by “N2”), an axis which, however, may become oriented.

A still image of animation <1 Trefoil> can be turned upside down, and the observer placed at the bottom (figure 6) or ‘below the world’ that is observed, or which seems to ‘come to existence’. In this case, the observer appears to be in a ‘primary’ position. The ‘line of sight’ then becomes a ‘vertical’ axis of ‘creation of the world’ perceived, conveniently in the same way as a human body standing straight or upright on the ground does, and significantly unlike most non-human bodies (animals). These last remarks have major implications for medical views on the health of the ‘human’ body.

Eliade (eg 1954 p.12) has found expressions of this vertical axis, in the core of culture and the artefacts of civilisation. Archaic houses were built with a central pole, and in general religion, ideas such as ‘going up to heaven’, or the tower to reach the sky or God are common. He called it by a general name, the *Axis Mundi*.

This vertical axis is ubiquitous in culture (eg the ‘up’ direction of evolution or growth), in anatomy (eg the spine, up to the head), and its reverse in medical treatment (eg entraining brain or mind control over the body, down).

In most minds, the spine constitutes this ‘vertical axis’ of the ‘body’ (the body-brain tandem).

It is a major element of medical models of the human physical being, opposing the body to the brain/mind/head, or making them complementary and a whole. The ‘spine’ is often conceived as a tube of vertebrae containing the core of the ‘activation’ property, the spinal
cord, itself conceived as a ‘conduit’ for nervous impulses originating in the brain (eg neuromuscular) or ending in it (eg perceptual impulses and pain signals). These ‘common sense’ topographic notions (structural tube, functional conduit, operational nervous flow of the ‘reticular activating system’) are well suited to interpretations based on the most common form of topology, calculated topology. The most well-known ‘vertical axis’ in physiology is related to the activities of the H-P-A axis (Hypothalamus-Thyroid-Adrenal, sometimes in more complicated variations that include gonads, thymus and other glands). As the limbic-hypothalamus-thyroid-adrenal axis (LHTA), it fits perfectly with the mind-governed perspective (‘mind over matter’, mind over body) of ‘psychoneuroendocrinoimmunology’ involving emotion and self. Some of the slides in <PPT1 Body> represent this pictorially. As a natural consequence, the head is viewed as a complex little tree that drives, governs or leads the entire body (or a cauliflower shape that highlights the role of the surface we call neocortex). Many metaphors for this are used in technology, politics and business. Another element of this vertical axis is mostly ignored: the cerebrospinal fluid that bathes both the spine and brain. It is only recently is becoming the object of research because of its role in immune reactions and pain. Its role at surfaces does not seem to be researched, although surface and ‘film’ behaviour of water is quite peculiar, and suited for topologic treatment. The vertical axis is also associated with the vagus nerve that modulates vital functions, but has been rather neglected in the past twenty years of medicine, although prehistoric ‘female’ perspectives on body and behaviour would relate to it. Vital functions are those interrupted or reduced in a state of stress or strain, or increased to cope or respond (hence the calming or re-enlivening action of acetylcholine is neglected to the benefit of its cognitive effects on memory). It seems little meaningful to medicine that some of the organs do not seem innervated by the autonomic system, which cannot, it seems to me, disconnect certain ‘responses’ by any action of the mind, will, or directive brain. Several health ‘EE experiences’ relevant to this discussion of the body’s vertical axis are related in Appendix E <EE collected> (EE7, EE10, EE16, EE 17, EE18).
Another, related, form of the vertical axis (in the ‘up’ direction) exists in representations of bodily operations drawn from the core tradition, that of the ‘chakras’ in yoga and ‘tan tien’ in Chinese Qigong (see some of the slides in <PPT1 Body>). This developed into models of stages of consciousness in medieval Chinese inner alchemy (as steps up a mountain) and Indian yoga (expanding spheres and ‘rising’ of Kundalini). The vertical axis is also a major element of internal sensations (eg spinal posture, projection of heat to the head) and in the languages of the human domain (eg the integrity of being ‘upright’, or ‘standing’ one’s ground).

Expressed according to perspectives, N2d- produces patterns and ‘signs’ (including those of internal sensations), that can be represented in terms of binary information. In the context of nexial-topology, N2d- also represents ‘synMetrics’ such as symmetry, complementarity, parity, direction, and vectors. Global ‘nexial’ attention is less sophisticated and detects nexial ‘orienting’ (development of a ‘line’, irrespective of direction).

**Dual polarisation: ‘primary’ conventions and ‘primitive’ apprehension**

Combining the notions and motions of both parameters, for example, as pattern of activity or active patterns, or motions and directions, produces complex representations such as sensory-mental interpretations, or the computer reconstructions. Computers reconstruct 3D spaces that are directional (mathematically ‘oriented’ – see <Endnote C10> Mathematical ‘ball’): they are viewed on a one-sided surface. Their images are binary (N2d-bits), and use *measured* kineMatics* to represent kinetic activity (N3p-). In abstraction, the two parameters produce ideas such as ‘effective causation’ (Piaget 1951) or teleology. In health, the N2d-N3p or N3p-N2d combinations (or permutations) produce the objective ‘symptoms’ (sets of signs and signals), and topographic distributions that change, become distorted, or deformed. These are related to expansion or shrinking from or to a ‘core’ (such sensations can be clearly felt, but are not a recognised as part of ‘normal experience’, although they are reflected in language).

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4 The capital in KineMatics implies that kinematics is a description of measured kinetics.
These two parameters are the basis that is used to build or construct all our explanations, descriptions, interpretations, as well as our experiences – our perspectives (see <Many perspectives>), including sensory construction, physical sensations and ‘exceptional experiences’. They are a means for naming, measuring, or rePresenting with images, according to ‘conventions’. Conventions are the normal ways of parametrising to describe (eg spatial place, whether in a mental space or a physical one, or sequence, whether temporal or causal). N2d- and N3p- are ‘primary’, used for fundamental explanations of the existence of the world, of things, as well as our own. In experience, they are considered ‘primitive’ and associated with our animal nature. For example, animal-like instinctive behaviour is ‘activated’; reaction to danger is directed, even in animals. It is these constructions and conventions that I have organised into analytical ‘maps’ of perspectives (based on words) and geometric ‘flat maps’ (four are provided: figures 30, 31, 42, and 43). Such representations based on the N2d- and N3p- parameters are limited

The native apprehension of what ‘presents’ is not perspectival, constructed or conventionalised, and this causes a problem in validating the ‘existence’ of such apprehension and the ‘reality’ of the undifferentiated ‘space’ it apprehends (see <Extract F9
Deep confusing questions>). In the particular context of health and sanity (including medicine), this means, that some propensities or tendencies a person notices, and which affect their body but also their life in general, or their ‘whole world’, are of a topologic nature, such as ‘twisting’. This cannot be discussed in the clinical situation without differentiations and 'valuings' (scientific measures and thresholds, human evaluations of the improvement/optimisation value, etc.) that interfere with a less fragmented understanding such as the patient can obtain ‘locally’ (but without physical, mental or biosocial localisation). This manifests as a clash of vocabulary (the doctor translates the patient’s ‘primitive ill talk’).

The geometric ‘twisting’ is conventionally formulated, in much of topology, as ‘distortion’ or ‘deformation’...of something in particular, and ‘disturbance’ of something located (eg of digestion or brain), and this yields many human devaluations (eg a disturbed mind,
behaviour or worse, a disturbed ‘person’ or ‘personality’. The devaluations are built-in in the words, and technical evaluations imply regard to standards. Twisting may also ‘manifest’ as ‘formation’ (eg facial features that have ‘charm’ or of creative ideas): The valuing can be reversed, and whether it expresses damage or improvement at one order of deployment or another can be different for different people an different contexts: twisting can be expressed geometrically, as torsion (a strain) or torque (power), with a variety of projected interpretations (eg internal emotion, external hyperactivity, central mental activity…) or ‘activation’ (of body or mind).

**Nexial-topologic ‘oriented activity’**

In a more basic (or more advanced) vocabulary, oriented activity may be apprehended also as ‘agitation’. The diversity of words and contexts is broad. One case is more interesting for us here, because it involves the geometry of a more global notion (less differentiated). ‘Activation’ implies both activity and a direction. For example one activated/directed propensity is a ‘state of need’ (or ‘alert’) – without specification of what is needed (or paid sharp attention to). This also fits well with medical notions of a body-brain physiology and biochemistry being ‘activated’ in a state of stress or physical strain, this independently of any causes or triggers. ‘Need’ orients us toward finding something to meet the need, irrespective of what this something is, of what sphere of experience it comes from (eg food, social, material or religious comfort, an idea to understand what can meet the need, moving out of a stressful situation, etc.). Irrespective of whether the activity to get this something has to be mental or physical, and whether it feels good or not, is valued socially or not, need affects all other aspects of daily life. Need ‘directs’ behaviour (including that of the mind) and ‘drives’ – a word often used for ‘oriented activity’. Feeling ‘affected’, without any particular cause, or in ‘need’ due to too many causes (stress and strain), appears too complex an issue to discuss with a doctor, and agitation causes medical explanations sometimes controversial in the general population; but ‘drive’ can be interpreted – and treated – in a variety of ways that can conveniently be reduced or limited to a doctor’s own perspective or a culture’s current bias, with correlate evaluations, about suitable forms of clinical response.
The ‘ease’ that Williamson and Pearse (1980) find at the core of health is not oriented or
directed, nor activated or induced – it is not an ‘oriented activity’, not a drive, has no
particular purpose, target or goal.

‘Activity’ is not necessarily directionally oriented, and ‘orientation’ is not necessarily
characterised by di-directional patterns of activation or deactivation (eg immune defence, the
Brownian motion that we normally understand as random or as statistical chaos, or the
spontaneous behaviours we normally consider meaningless). Undifferentiated ‘twisting’, or
its absence, is a property of ‘oriented activity’ that the native gauging ‘shows’ and which can
be modelled with nixial-topology. Approaching it fragmentarily through its specific
manifestations in physical and mental realms limits the capacity to do something about it.

**The notion of topologic ‘space’ and ‘likeness’**

In this project, finding a common way to describe both physical space and experientially or
perceptually ‘real’ human spaces, as well as the models underlying culture and civilised
behaviours, in their general and specific manifestations, was difficult. It was resolved when I
discovered topology (December 2003), through websites on physics and mathematics. I
realised that my habit of drawing iconic images of the vocabularies that I encountered, and
scribbling geometric figures to understand ideas or experiences, could be construed as a
simple form of topology. The technical innovation is to use the convenient notion of
'topologic space' (or field) to describe an undifferentiated⁵ situation, *without* using the
conventionalisations. The latter involve a framing bound to systemic and spatio-temporal
conventions, which are different in natural and human sciences (eg compare ‘physical body’
to ‘mind embodiment’, and the ‘system’s neuro-hormonal transports’ to ‘molecules of
emotions’). In daily life, we often call this undifferentiated ‘space’ or situation, a ‘place’.

This nixial-topologic ‘place’ is not concrete, nowhere in particular, nor located in time (eg a
person’s ‘peaceful place’ or ‘own space’). It is a non-naturalistic and non-realistic ‘meta-
space’, in the jargon of humanities, but it is not abstract (as in a Platonic-style ‘pre-

⁵ A term ‘immanent’ is sometimes used in the human domain to mean ‘undifferentiated’. In
physics, ‘immanent’ properties are ‘non-local’.
existence’) and an imagination (which is conventionalised). Its main benefit is that whatever properties are noticed in that ‘space’ are also at work in the naturalistic and realistic spaces projected from it. They ‘work the same way’ (activity), and ‘look like’ each other (pattern). In this sense, this ‘meta-space’ or ‘place’ is topologic (patterns of change) rather than either abstract or concrete. The naturalistically or realistically concrete expressions are ‘a likeness of’ the topologic space that is ‘in shaping’ (changing shape). Such an animated image (often pictured in gesture) ‘looks the same’, whether derived from the ‘real’ or ‘natural’ spaces or from the ‘place’, but the ‘likeness’ is more than an analogy, metaphor or similarity. It is a ‘likeness’ of the ‘shaping’ (eg twisting, swelling, or ‘speeding-up’, which nexial-topology ‘shows’ (as a global moving shape).

By ‘naturalistic’, I mean physically concrete for scientific instruments or the senses and perception, and this yields analogies. By realistic, I mean mentally concrete for human experience, and this yields metaphors based on experiences of the real. Both are constructed or interpreted in the brain-mind, and analogy and metaphor are ‘similarities’. I find it easier and less limiting to use a generic term such as a ‘likeness’, which has not been given any precise definition (especially in mathematics or logic). This way, the use of specific interpretations of the words interferes less with the undifferentiated meaning conveyed. The notion of ‘likeness’ exists in ancient texts (eg non-canonical biblical writings), but the complications of Sc-naturalistic (eg materialistic) and H-realistic (eg moral) interpretation appear to be an impediment for exegesis (they introduce reification). The same problem seems to exist in physics, in which topologic properties are now exclusively associated with \textit{physical} space or spacetime. It seems to me that the early discipline of \textit{geometria situs}, before it became \textit{analysis situs}, was not thus limited by spatial convention (see <Endnote C4\ Topology>).

\textbf{‘Gauging’ the ‘shaping’ or ‘presenting’ situation}

‘Gauging’ is a simple matter of noticing properties of ‘how the situation is shaping’ (‘shaping up’, in vernacular), considering ‘the situation’ as an undifferentiated topologic ‘space’. Its properties ‘apply’ globally to any real or natural space conventionalised out of
the topologic space, or are ‘expressed’ (or ‘manifest’, ‘immanent’, global, on-local, etc.) in
the conventionalised forms of reality, and they ‘arise’ from the nexial-topologic ‘space’.
‘Gauging’ the global ‘shaping’ of the situation, is very different from the conventionalised
‘valuings’ (eg measuring, naming, finding cause & effect… – see <Validity and valuing>),
which are attached to *shapes* (or N2d-patterns) and *motions* (or N3p-activations).
Perspectives apprehend and represent only the latter. ‘Gauging’ the global shaping means
‘seeing’ how the situation ‘*presents*’, rather than *rePresentating* its patterns and activities in
various conventional spaces or worlds, which is a further logical step, a stage of
‘deployment’ or geometric projection. Nexial-topologic deployment models how specific
perspectives and general models of ‘reality’ – perspectival representations – ‘shape up’ or
develop into both a scientific and a human viewpoints (or a combined one) and concretise
experience through perspective and geometric framing. The notion of ‘gauging’ will be
addressed again, in other ways. In the following chapter <Many perspectives>, I will outline
some of my early techniques for classification, and other ways of ordering the framed
perspectives on medical theory, experiences of health or illness, and practices related to the
body, as well as those in other areas of knowledge.
Many Perspectives

The following text may not be very easy to follow because it relates to a number of diverse fields, as well as to a general approach to knowledge and experience and ‘generic’ notions, and a way of organising their diversity. It is only an orienting summary in order to introduce the reader to some issues that are addressed in chapter <Nexial-topologic deployment>. There may also be repetitions, compared to other chapters, necessary to clarify certain concepts. By the general term ‘perspectives’, I mean any and all our ways of representing our ‘views’, whether they be general views on culture, civilisation, on man’s sophistication or evolution, on reality, etc., or particular views on specific topics. These include our explanations, experiences and practices related to health, and our ways of apprehending the body, its environment and the interface between the two, whether we see it as mental or physical.

Vocabularies of the perspectives

In my Masters thesis, I had devised a system of classification using four directions to map learning, personal growth and shifts in experience. It was based on (a) the popular notion of ‘left-brain’ and ‘right-brain’ thinking, (b) the axis suggested by Ken Wilber’s ‘pre-trans fallacy’ (1996), with (c) an added ‘core of self’, an ‘I’ (Bouchon 1998 p.72). Given the nature of the present project, the ‘I’ had to be refined to account for physical aspects, interactions between body and environment, and to cater for much more complexity¹. The first complete classification model I used was a system of 3 axes, each with 2 directions:

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¹ The term ‘complexity’ in the human domain does not mean the same as in science: it means diverse, multiple, rather than a formal organisation that is complex.
Linguistic indicators of perspective

I used these axes to collect field-specific words and find cross-field similarities and equivalent theoretical formulations, which come under the guise of various vocabularies and contexts, but with similar essential meanings. The dimensions represent different ways of conventionalising entities observed and this is reflected in the concepts we use. Each axis corresponds to a particular type of perspective bound to a particular way of conventionalising. For example, something observed might be viewed as an object with structure (a thing), a subject with functions (an entity), or a field of interactions and connections (a ‘world unto itself’). Following is a summary of the most common vocabularies used by the perspectives related to the 3 axes, in any field of research.

- **Vertical** dyads of words, in general frameworks yield the essential choice of ‘up or down’, such as up in evolution and down in history, up advancement and down to primitive states, up for humans and down for animals, etc. In abstraction, this corresponds to duality: closed-open systems), body-mind, mind-matter, space-time, body-brain, inside-outside, etc. The fundamental characteristics of this dimension are linearity and singularity. The vertical line can also be split into many ‘levels’ that add one onto another. The dyads are used to model functional dynamics and structural binding.

- **Horizontal** triads of words represent 3-modal types, styles, colours, tastes, sounds, etc. that can be multiplied into a diversity of many. The archetypal modal triad is ‘Left-Middle-Right’ – the ‘middle’ is a later addition (a logical integration), and so is derived as
(Left-Right-Middle). The triads correspond to different ways of conventionalising an observation or description, such as (Left-Right-Middle), (singular, relational, connective), (structural, functional, operational), (linear, circular, spiralling), (static, dynamic, kinetic ‘motion’), (electric, magnetic, gravitational), (initial, ‘boundaried’, radial), (radio, chemistry, biologic), etc. In abstraction, they correspond to different logics and frames of reference, such as: (cause, factors, wholistic conditions or triggers), (objective, subjective, direct), (combinations, types, modes), (connection, transformation, operation), (existing, real, actual), etc. The frameworks of this dimension are used to model composite sets and networks.

• **Radial** tetrads of words bring a concern with ‘in-out’ boundary phenomena, based on definitions of the limits of wholes, systems, bodies, objects, subjects, selves, worlds, etc. and the discernment of dual forms (giving a ‘systems’ view). For example, a body can be cold or hot with respect to an environment (heat activity), and wet or dry (sensory patterns). The in and out are named by reference to learned notions of body or self as systems having a ‘within’ in relation to a world ‘without’. Combinations produce ‘advanced’ thinking in terms of an integrated or binding ‘core’ or nexus (the ‘nexial’ view) or differentiating several modes or types (a ‘modal’ view), which exist also in refined experiencing. Both build views in terms of extremes, limits, surfaces, edges, or development, binding, history, origination, etc. This kind of complexity deals with the Middle or Centre, with the Sc-broad and H-deep, with differentiation, discernment, discrimination, or subtlety, small details and fine-tuning, with ‘hidden’ clues or lost wholes, with instinct and intuition, with codes, spirituality, and ‘secret’ traditions (see <Endnote C6\ Core culture>). The frameworks of this dimension abstract patterns and motions from more habitual views.

Early in my study of perspectives, I started finding practical rules of thumb concerning the way they operate. One of them is that when someone’s perspective shifts, the new perspective adopted always appears to be an improvement on the previous one. This is the

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2 ‘Sc-‘ and ‘H-‘ are shorthand notations signifying ‘scientific’ and ‘human’, the 2 fundamental domains of knowledge and experience.
case even if that means ignoring certain aspects that were effectively mapped by the old perspective, because the new one describes additional things the old one could not. The collection of such rules I gathered eventually grew to such large numbers that meta-rules, of a geometric nature began to emerge.

The patterns expressed in words through various dimensional frameworks have a similarity. Each dimension or axis is capable of making distinctions between particular things, of increasing the number of ‘things’ found in ‘reality’, and of reducing the number of elements and abstract concepts necessary to describe or explain them. This is what I call ‘general-specific’ thinking or ‘detail’ experiencing. Some forms of these qualities are listed in table 1.

| General, generalise, generic, genus | Specific, specialise, special, specify, species |
| discrimination, discernment, distinguish, define | differentiation, individuation |
| large, long-term | small, short term |
| simple | complex |
| general relativity | Sc-special relativity & H-post-modern relativism |

Describing experience requires a lot of specific details related into some kind of whole, whereas explanation reduces them to elements related by some kind of logic (eg cause-effect, inside-outside interaction). Explanation and experience are not disjoint or independent aspects: any experiential paradigm has a basis in a culture and civilised techniques, a particular way of explaining that governs what can be described from experience and what can be observed, to draw abstract ideas for theory or philosophy. I simplified and organised the classification by defining a general ‘perspective’ as a general framework that is applied to all three: explanation, experience, and observing (or living or acting). These perspectives represent all the ‘ways’ of explaining, experiencing, and observing, in any field (one such ‘way’ is the ‘Way’ of Daoism; another is the way of science). There are two fundamentally different and archetypal general perspectives: the scientific and the human. They correspond to different domains that I symbolise by ‘Sc-’ (scientific’), and ‘H-’ (human), with the combination being ‘Sc-H-’. The vocabularies of the 2 domains are different (eg H-experience and Sc-experiment). The Human- also corresponds to perspectival anthropomorphism. By symmetry, the Scientific- also corresponds to perspectival
‘physikemorphism’ (attributing physical, material, spatial or ‘natural’ form to the observed). For example, ‘sensing’ can be anthropomorphised into mental impression or physikemorphised into ‘internal sensation’ (in the body) – these are limitations. One rule of thumb I found concerning this is that ways of explanation limit what can be experienced, and the correlate ‘observed’ imposes limits on what can, in turn, be explained and represented in theory. Both express a basic perspectival bias. In daily life this bias manifests in personality type, body type, limiting cultural-educational background, and the biased filters of our perspective in communication (eg one says ‘order’ and the other understands ‘organisation’), and perception.

Searching the literature for a generalist taxonomy to organise all these perspectival biases or a scheme to classify general approaches to any subject in both human and scientific domains, I could find only very limited ones. There are specific growth models, developmental models, and evolutionary schemes that describe changes in perspective. Unitive schemas (eg McArthur 1990, among a large number of authors) seek to simplify, but do not account for the multiplicity of perspectives except as an anti-valuing, post-modernist patchwork, and this simply ignores the details and diversity. Integralist schemas (see <Endnote C1\ New Paradigm> and <C2\ The term ‘integral’>) are interpreted either as unitive-patchwork (but do not usually include all types of perspectives), or as simplifying emergence into unitary forms that describe the process of change, but not the diversity it comes from. One scheme (Llinstone 1997) embraces the human domain with three modes (“technical/ analytic” perspective [T], “organizational/ intertittutional” [O], and “personal/ individual” [P]), but it does not fit the scientific domain. In science, the cognitive creative processes are studied, and philosophy of science classifies the models according to their role

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3 This term is meant to show the symmetry with anthropomorphism. ‘Morphism’ means giving form. ‘Physike’ is the feminine of the Greek word ‘physikos’, nature. In Old French, ‘phisike’ meant art of healing. About 1300, ‘fisike’ was a healing potion. In Middle English, ‘phistic’, meant a medicine to move bowels. The root ‘phyein’, to bring forth, gave rise to ‘physics’, science of matter and energy, but also to these notions related to medicine, the art applied to the body considered ‘natural’, currently conceived as ‘physical body’. The word ‘physike-morphism’ is meant to show this reduction of sensory meaning to the ‘material’-‘natural’ sphere.
of specific representation or general theorising (‘abstract model’), but at best their organisation is in terms of families of models (Dutra 2006). Popular culture has its distinction of Left-Right logics, and this duality can be extended and deepened with other dyads to find many different logics that I tried to map into a combined L-R-evolution scheme. It is from this that I drew my first mapping dimensions (figure 7), but it left me with a paralysing ‘multi-dimensional’ diversity. One 3-modal scheme of logic (Hendrick 2002) confirmed the Left-Middle-Right distinction I was beginning to make, but this takes no account of the vertical dimension of development, evolution, or growth. There is, in the literature, a rising sense of need – as yet unsatisfied, it seems – for some sort of generalist taxonomy for all these perspectives. There are difficult problems with ‘theory unification’ (Rueger 2005), and with matching definitions of words rather than invent new ones for new subtle variations of meaning. Specialisation also wastes human effort by producing similar frameworks in diverse fields, each invented independently and under the guise of different vocabularies that represent the same entities. This creates redundancy. The discussions in physics about the nature of space, those, in philosophy of science about the development of the thinker’s ideas, the challenges to evolution (see below), and the philosophers’ doubts about their own discipline, are clear indications of this. This was a dire need for me, to understand the many medical theories of chronic illness, of ‘the origin of all disease’, of ageing. The many models of the body, which are disparate across cultures, and are the object of medical anthropology and history of medicine, added to the need. Models of health-sanity and philosophies of life are even more diverse, many involving spirituality. The closest I could find to a classification of general worldviews is what I call ‘ancient perspectivalism’, which I detail in chapter <Ancient perspectivalism, The Earth & The East>.

**Perspectival analysis: taxonomies by the word**

I set out to explore systematically and organise the general frameworks, by collecting general concepts that are context-independent, but in their many forms (eg a ‘system’ can be a body, self, world, etc.). My taxonomies were based on the wording of the general ideas and descriptions of experience (eg focus, intent, power, energies, will), and I used colour coding
in both my tables and my writings This helped me to visualise patterns, similarities and
differences between perspectives, and logical orders of thinking. Patterns, tables and colour
coding are common basic techniques, used by other thinkers such as Ken Wilber, or Graves
(Spiral Dynamics). Among the countless integrative tables I built to classify the many
vocabularies, of the theories and experiential descriptions, both specific and general, a few
general ideas came to the fore. They are directly related to complex developments of theory,
the archetype of which is a general-systemic view in science, and a world-model in the
human domain. They are also linked to complexification of experience (eg refinements of
perceptions). Intuitively I focused on notions of integrity and stability (table 2), and this is
just one aspect (the symbols N2d- and N3p- are explained below).

<table>
<thead>
<tr>
<th>Table 2: Concepts of integrity, equilibrium, evenness, and stability</th>
</tr>
</thead>
<tbody>
<tr>
<td>L-coherence (abstract)</td>
</tr>
<tr>
<td>L-integrity (structural)</td>
</tr>
<tr>
<td>N2d-dual binding</td>
</tr>
<tr>
<td>one * holding, holding together, holding as one</td>
</tr>
<tr>
<td>unity</td>
</tr>
<tr>
<td>symmetry, direction</td>
</tr>
<tr>
<td>L-static equilibrium in closed system</td>
</tr>
<tr>
<td>N3p-N3p-kinematic resonance</td>
</tr>
<tr>
<td>... for Sc-perturbable ‘life’ and H-disturbable ‘existence’ to not be affected, to be:</td>
</tr>
<tr>
<td>L-maintained N2d-established</td>
</tr>
<tr>
<td>N2-steady ‘within sphere’ (eg holding a steady course, ‘keeping on track’, staying ‘what one is’)</td>
</tr>
</tbody>
</table>

* One, even, and full are sophisticated integral notions found in texts arising from the traditional ‘core of culture’.

**Fundamental parameters: N2d-dual and N3p-polar**

The cycles of the inquiry in any area kept bringing up the same fundamental distinction
between ‘N2d-dual’ and ‘N3p-polar’ ways of conventionalising (further explanation to
come). These parameters are most obvious in the general models that describe the development or ‘origination’ (process of creation) of our realities. These general explanations govern our civilisations and cultures, our descriptions of experience, and even what most of us can experience or feel. They also create new realities, and so, inversely, the nature of the most special experiences that humans have (often the most extreme, for example in mysticism, sport, or healing), is what governs the arising of new explanations and the validation or invalidation of old ones. These 2 parameters also drive the paradigmatic changes of experience and changes of general perspective that authors undergo – and bring to culture and civilisation –. They come to be through their structures of analysis and experimentations, through the developing concepts in their writings and the fields they explore, through the stories of their lives and the perceptions they describe when they share their special experiences. I mapped the careers of a few of them, as well as my own path. 

The same concepts are named differently in the Sc- and H- domains, the evaluations are often inverted, and the definitions can be confusing. For example, the Sc-‘dimension’ is a H-logical ‘order’, and the many H-dimensions are Sc-variables or parameters (of the same logical order), and the latter are interpreted as H-details (of lower order than generalisations), etc. The only way to bypass the divergent naming and the ordinal classifications, for cross-domain analysis, was to reduce the various guises to basic parameters in an underlying domain. The parameters had to be applicable to language, but also to the mathematical descriptions of science. Various parameters yielded some simplification, but did not apply to all the fields reviewed. More abstraction eventually yielded a set of two parameters. All the perspectives I studied used a fundamental way of explaining based on some form of: (1) pattern or direction, and (2) motion or activation; and this can be reduced to a set of two parameters of a geometric nature. In table 3 are listed some of the names given to these 2 fundamental parameters.
Table 3: Fundamental parameters of perspectival analysis

<table>
<thead>
<tr>
<th>the fundamental parameters of perspectival analysis</th>
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</thead>
<tbody>
<tr>
<td><strong>human domain: formation</strong></td>
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<tr>
<td>patterns</td>
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<tr>
<td><strong>scientific domain: localisation</strong></td>
</tr>
<tr>
<td>direction or projection</td>
</tr>
<tr>
<td><strong>primary Sc-H- parametrisation</strong></td>
</tr>
<tr>
<td>N2d- dual</td>
</tr>
<tr>
<td>binary, stereo</td>
</tr>
<tr>
<td>N3p-polar</td>
</tr>
<tr>
<td>polarised</td>
</tr>
<tr>
<td><strong>wholistic derived perspectives</strong></td>
</tr>
<tr>
<td>2-nodal</td>
</tr>
<tr>
<td>3-modal</td>
</tr>
<tr>
<td><strong>the primary generic parameters of perspectival mapping</strong></td>
</tr>
<tr>
<td>Sc-H-combinations of space-time explanation and sensory-sensate modelling</td>
</tr>
<tr>
<td>patterns of activity or directive activation (eg wave)</td>
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<tr>
<td>active patterns or active patterning (eg path)</td>
</tr>
<tr>
<td>geometric parametrisation of models of development or origination</td>
</tr>
<tr>
<td>synMetrics dyNamics of orientation</td>
</tr>
<tr>
<td>harMonics kineMatics of resonance</td>
</tr>
</tbody>
</table>

Armed with the 2 abstract parameters that I denote with ‘N2d-’ (dual) and ‘N3p-’ (polar), I could detect similarities (and differences) with much more ease, and I developed perspectival analysis into a more technical method. This is more methodical than merely collecting and classifying words, and could help a more systematic investigation. Such perspectival analysis can be conducted on a short piece of text or discourse, as long as it contains an explanation or description of experience. We do that intuitively when we apprehend the hidden implications of what someone says. We fail to do this, however, when we ‘twist their words’, and interpret them according to our own framework or perspective.

**Source of the notation ‘N2d-’/’N3p-’ and geometry**

In the ‘advanced’ knowledges (see <C6>) of the scientific and human domains, the general notions attached to the parameters take many shapes. Geometrically, they all come down to what I summarised as ‘synMetrics’ for N2d- and ‘harMonics’ for N3p- (this came as an alliteration – see other examples in <EE9 Alliteration>). These words mean that, from the Sc- and H- viewpoints, we measure (metrics) or name monads such as bodies, objects, systems, selves, worlds, through dual or polar techniques, and we localise them by using orientation (direction) and movement (motion).

• ‘Orientation’ is directly related to duality, and a simple way to represent it by 2 dots with a line, with ‘direction’ being 2 dots with an arrow of motion (figure 8).
• ‘Movement’ is directly related to polarity, and a simple way to represent is by 3 dots with a directed circle (figure 8).
In the notation I devised, the ‘N’ is the initial of ‘nexus’ (see <Endnote C5> Nexus, nexial, and nexialism>). It aimed at reminding me to not split, divide, and reduce the ‘field’ I was studying, and yet be aware of the way in which other do that. The word ‘nexus’ is not quite adequate, but it is useful to describe wholistic realms such as the human nexus of experience, or the scientific nexus of physical existence. The numbers, 2 and 3, could be, I think, likened to the mathematical concepts of numbering according to the ‘base 2’ and the ‘base 3’. What these can do in mathematics, duality, and polarity can do in language and perspectival description.

The notation ‘N2d-’ is a shorthand to denote the ‘base 2’ (eg in dynamics or binary relations) and the duality between ‘2 things’. The 2 dots encapsulate a linear geometry linked to an oriented line. For example, a ‘Left-‘minded person uses intellectual linear thinking, seeks targeted goal in experience, speaks of the arrow of time, sees evolution as a ladder, judges truth in binary terms of good-bad, defines systems with binary means of within-without, observes preferentially through the filters of stereo vision, finds the ultimate source of reality in the duality of male-female, etc.

The notation ‘N3p-’ is a shorthand way to denote harmonics and resonance. The 3 dots encapsulate a flat geometry linked to an oriented circle on a plane, and the polarity of movement (from here to there). For example, a ‘Right-‘minded person uses the multi-dimensionality of the psyche, seeks inter-personal relations in experience, speaks of human spaces, physical (3D space) or of the mental space of the psyche, sees evolution as a tree, evaluates in modal terms of sets of values, defines systems with 3-modal elements of resonance, observes preferentially through the filters of volume-localising audition, finds the ultimate source of reality in the polarisation of 3 fundamental processes, etc.
Please note that these examples relate to a model that only has ‘left’ and ‘right’ (the ‘middle’ is in the processes or transformations they describe).

**Diagrams and sketches**

At the time, I was scribbling little drawings for everything, to understand the way others (and myself) think and experience. For example, an ‘in-coming influence’ I represented by $\mathbb{O}$, out-going action, focused or powerful was $\mathbb{O}$, interaction $\mathbb{O}$, closed system $\mathbb{O}$, vectorial focus or directional intent $\mathbb{O}$, numbered scale $\mathbb{O}$, alternance or oscillation $\mathbb{O}$, bipolarity $\mathbb{O}$, spiralling up $\mathbb{O}$, bifurcation or separation (division) $\mathbb{Y}$ (compare to the ‘Y’ of Yahweh in Hebrew), direction $\mathbb{O}$, circulation $\mathbb{O}$, etc. It is thanks to these schemas that I realised how much my understanding and learning have always been governed by these mental images, and that they allow me to bypass the different wording to access more directly the divergent meanings. What this does for me is best expressed by mathematician Korzybski (1933 p.664):

‘We would evaluate the terms “matter”, “space”, and “time” as forms of representation, and non-objects, and we would describe events in a functional, operational, behaviouristic language of order…Diagrammatizing and even following with one’s hand, the visualized order of occurrences, helps enormously. […] We shall also be greatly helped in our power of visualization when we become acquainted with the structure of the Minkowski four-dimensional worlds.’

This habit of sketching my understanding helped me realise that my conscious Left-minded intellect, focused on language as a precise tool, French-educated into Cartesian doubt, and imprinted with a deep interest in logical rigour, had a more unconscious symmetric realm. The ‘depth’ of my thinking or intuition sees the practical, operational and nexual (eg awareness of ‘twisting’ or distortion). This gave me a means to study my ‘epistemological learning’ (comparing the drawings I did for the same thing after trying on different ontologies, for example), and follow my paradigmatic shifts. This developed into making
theoretical diagrams, and comparing them to those I found in the literature: I sometimes found striking inversions.

**Model-making**

Creating Sc-abstract models is an intellectual activity that is studied in philosophy of science (eg Nouvel 2002, Nersessian 2002), and cognitive science (for the creative process). Thinkers who attempt to use scientific knowledge and methods to model human experience create H-‘meta-models’ (a term drawn from philososphical jargon). In the human domain, critical and ‘meta-thinking’ are stages ‘beyond Piaget’ (Lauer 1983), and what the Buddhists call the discerning mind is used extensively in theoretical ‘model building’. The abstract activity of allowing the visual productions of graphic models to emerge seems to be known, in this domain, only as learned symbols, rather than as an intellectual creative development (and possibly a sensory complexification). The images are attributed to visionary intuition, the psyche’s archetypes, learning of ‘sacred geometry’, or to dreams and shamanic or religious visions. To me, this is a mental-experiential activity that allows linguistic deconstruction of explanations and descriptions (see Spinoza 1901 and Husserl 1939). It simply is an algorithmic activity: patterns can be described by using information, colour, or sound in alliteration (see <EE9>), can describe harmonics, and both create transformations that can model animation. In archaic stories, model-making is a known technical function of the mythical builder of civilisation, of the socio-cultural innovator (eg agriculture, irrigation, religious ritual), of the hero who helps beat Nature’s disasters. For me, as for Korzybski, the ‘order of occurrence’ and representation are ‘non-objects’, neither real things (eg objects or human processes) nor ‘pure abstractions’. This is the basis of the nexial-topologic imaging I used in my study of the ‘global field’ of health (conventionally, ‘non-local’). The images are neither naturalistic nor realistic for human experience. They are just a geometry of changing shapes (I call this, ‘shaping’). Scribbling was not active only for theoretical work, or generalising experience. I made drawings of what my gestures showed when I spoke of the state of my health and life, or those of the world, and did the same for other’s gestures. I also used anatomical pictures to sketch sensations inside my body.
These sketches showed that human and scientific domains did not view things in the same way, although we ignore this because most of us have a bias to one of the two domains, usually developed from school years. This can be used to classify the general perspectives across both domains. For example to organise the varied interpretations of a general notion such as ‘symmetry’, I turned to definitions, but in words they are confusing, so I had recourse to definitions in geometry (table 4). This helped me organise the many notions derived from them.

<table>
<thead>
<tr>
<th>reflection</th>
<th>translation</th>
<th>rotation</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image1" alt="Reflection" /></td>
<td><img src="image2" alt="Translation" /></td>
<td><img src="image3" alt="Rotation" /></td>
</tr>
</tbody>
</table>

**Table 4: The 3 fundamental types of symmetry**

- **Classic symmetries in geometry:**
  - Reflection
  - Translation
  - Rotation

- **The symmetries and asymmetries in human thought and experience:**
  - Opposition
  - Complementarity
  - Inversion

- **The human-scientific complexes of symmetry and asymmetry:**
  - Symmetry, combination
  - Conversion equivalence
  - Circularity permutation
    - Transforms

**Circularity and symmetry**

I symbolise symmetry, as a general property, with the sign: \(\leftrightarrow\). It manifests, for example in the geometric symmetry of the notions used by L- and R- perspectives, whether evaluated as opposed or complementary: \(L- \leftrightarrow R-\). Another symmetry is simple \(\leftrightarrow\) complex, despite the evolutionary models that place one above the other. It also manifests in the practical cohesion between Explanation \(\leftrightarrow\) Experience. This is a fundamental duality that pervades languages and culture, but also science and daily life (eg the modern mind–body). This consistency also manifests as a logical coherence: what cannot be explained is sifted out of experience (selected perceptually), and what cannot be experienced is sifted out of explanation (biased interpretation). There is a circular consistency between explanation and experience that produces a logically self-consistent entity with a special bias – a perspective. Getting out of this circle requires deconstructing explanations and accessing aspects of experience that are not recognised. I express such circularity with the sign: \(\circ\), as in:

Explanation \(\circ\) Experience.
Types of perspectival models

There are many types of perspectives and of general models, and different ways of organising them into taxonomies and typologies. Some are presented below; others are represented as images, in <PPT2 Models collected>.

Taxonomies by the Name

In this category I place the general perspectives that arise from the dimensions defined in figure 7, and the classifications based on linguistics. The 3 categories of symmetry represent general categories, based on different logics, and offer a means to classify ideas and perspectives, for example the Left-Middle-Right basic distinction. The 3-modal taxonomy is as common as duality (eg body-mind-spirit, physical body -behaviour-person, within-between-without, square-triangle-circle in graphic models, the 3 stages of the General Adaptation Syndrome, 3 meals a day, percept-concept-recept [for ‘percept’, see Romanes 1888], etc.). This tripartite way of classification corresponds to three stages of my exploration of specific perspectives (of explanation, of experience) and of the models created by generalist perspectives (with their theories about observation, experiential or experimental).

One example of archetypal 3-modal distinction (figure 9) is found in all the general perspectives on human behaviour, whether physical (heath), mental or otherwise. It is particularly relevant to understanding explanations of the behaviour of the brain-mind (‘human’ and ‘not animal’), of the personal body (survival is ‘natural’), and of the internal-physical ‘body’ (animated with ‘life’ rather than being ‘dead’) – a body that is a lowly machine, vehicle, temple, or container for the ‘human’ nature or driven by the brain-mind. These definitions are domain-specific interpretations of ‘existence’ or ‘reality’ (eg survival of personal body belongs to the Sc-H- domain). They also vary in detail with each particular perspective (eg the philosophico-scientific problem of what it means to be ‘human’). These notions are an underlying basis of medical theories, practices for healing, and the clinical
encounter, whether in Western biomedicine, Eastern, ‘alternative’, or traditional core of clinical help.

Another very common approach to health is to ‘take to the power’ the fundamental parameter chosen. For example, seeking patterns of patterns lead to N2d-N2d- strategies of focused intent, lifestyle ‘choice’; seeking changes of activity leads to compensating reductions by a reactivation of N3p-N3p-willpower, spirit, or sexual drive. In practice, these representations lead to statistics of normality and probabilistic risk of disease, and leave many unexplored corners and anomalies. For example, the percentage of statistical error in medical trials is normalised rather than studied, and the failure of health strategies in certain improbable cases is simply ignored.

**Typologies by the ‘Number’**

Certain models represent dimensions, logical levels or orders, by the number of basic elements needed to represent them (eg 2 for duality or dynamics, 3 for circularity or boundary phenomena). For example, many models are quadratic (eg Wilber’s 4 quadrants, the 4 forces of physics, etc.) – see <PPT2 Models collected>, and triangles with a central point, related to a pyramid). These will be addressed differently in <Nexial-topologic deployment>. I symbolise the ‘Number’ of a model (eg number of categories) by calling the model ‘Mn’; for example, M2 symbolises a dual model, M3 a modal one (eg figure 9). In modern thinking, there usually is no conscious reason for choosing one ‘Number’ rather than another for a categorising model. In antiquity, however, this was an intentional practice (Feuerstein 1994). Some examples are: 2 for Male-Female (or dark-light), 3 for primary colours, Father-Mother-Child, sky-sun-moon and other trinities, the bodily systems (neuro-endocrino-immune) or the simplest Elements (Earth, Water, Fire), 4 for cardinal directions of the Earth (see chapter <Ancient Perspectivalism>), the Egyptian pyramid (square basis), and the quadratic models so common (see below), 5 for the senses, colours, tastes, the Chinese Elements, or the basic chakras (India), 7 for the stars (astrological cosmologies or chakras of the 'subtle' body) or the modern cosmetic ‘7 signs of ageing’, 8 for the 8 trigrams of the I Ching (Chinese ‘Book of Changes’). Other popular numbers are 9 (‘many rivers’ or colours),
10 and 11 (in modern physics), 12 (eg ‘twelve steps’ in AAA, twelve disciples), and even up to 64 (in Feng Shui). Knowledge of ‘Number’ is part of the modern ‘mysteries’ of culture and religion, but it is common and part of daily life in ancient texts:

‘...the Yi and the Ch’i, the four quarters, the five colours, the six pitch-tubes, the five notes [determined by them]. [...] I assisted in completing the five Tenures, extending over 5000 li; (in appointing) in the provinces twelve Tutors, and in establishing.’ (Legge 1879)

‘Number’ is an important element in esoteric knowsledges. Many have tried to explain the cultural developments from one model to another (with changing Number) in terms of combinations and permutations of 3 and 2 (eg 3 elements with 2 types, or 2 types and 3 stages), through geometry (sacred or not), or as certain special mathematical series. It seems that each system finds a block with one or another Number framework that does not fit. There is also the problem that ‘1’ appears as first, yet ‘One’ appears last. In any case, this approach confirms my analysis of perspectives in terms of N2d- and N3p- as the fundamental parameters of both explanation and experiential description. The mapping system in figure 7 is based on this too: 3 axes with 2 directions. The ancient Chinese already traced the historical development of their perspectives to them:

‘1. In ancient times the holy sages made the Book of Changes thus:
   They invented the yarrow-stalk oracle in order to lend aid in a mysterious way to the light of the gods. To Heaven they assigned the number three and to earth the number two; from these they computed the other numbers. [...] They put themselves in accord with Tao and its power, and in conformity with this laid down the order of what is right. By thinking through the order of the outer world to the end, and by exploring the law of their nature to the deepest core, they arrived at an understanding of fate.’ (I Ching, Shuo Kua section, in Wilhelm 1989 p. 262)

**M6, the ‘ideal’ model: perfection and completion**

The number 6 for modelling 6 categories or describing a single shape is a direct result of these parameters. It represents a ‘complete’ model (in the Human- domain) in which all combinations of 2 and 3 are represented. As such, it tends to be considered an ideal model, or a model of the ideal way of living. From a Scientific viewpoint, it represents ‘perfection’. 
Geometrically, it can take several shapes, such as two opposed triangles, or cones, a hexagram, a shape of star, a snow-flake, crystal, or a mathematical knot drawing. Some examples are included in the Power Point presentations, including some of mine. This model is of importance for classifications of details of physical-human realities such as the body (eg 3 systems, nervous, endocrine, immune, which interact between body and head). Here is an example of its appearance as an underlying structure of culture, not explicit for the writer (3 chains, left-right), together with some other developments (helicity, or chirality that will be explained later):

‘The synthesis and deposition of collagen is a critical event in the proliferative phase and to wound healing in general. Collagen consists of 3 polypeptide chains, each twisted into a left-handed helix. Three chains of collagen aggregate by covalent bonds and twist into a right-handed superhelix, forming the basic collagen unit. A striking structural feature of collagen is that every third amino acid is glycine. This repeating structural feature is an absolute requirement for triple-helix formation.’ (Romo & Pearson 2005)

**The (2,3) and (3,2) descriptions**

This notation comes from mathematics (combinatorics). I also use: N2d-N3p and N3p-N2d. The M6 models (discussed further in <Ancient perspectivalism>) are concerned with beginnings (or origins) and ends (think of ‘the alpha and the omega’), and so the order of the notation ascribes one parameter to beginnings and the other to completing to ends. The kinds of ‘big picture’ produced can display drastically opposed views, depending on which of 2 or 3 comes first, the other coming last. It is in this realm that sciences resolve mind-body problems by using the brain, and the human practices resolve brain-body problems by using the mind. These (2,3) or (3,2) descriptions are the fundamental structure of mathematical formulation, as well as words. They are, as far as I can tell, the source of ‘languages’. They are found in the highly simplified concepts taught at school, such as the 2 ends of a line, the 2 sides of an equation, equivalence or equilibrium, and the 3 basic forms of symmetry. Highly developed into topology (with higher numbers of dimensions than 6), they produce sweeping models of spacetime or of reality that claim universal application. The system of description based on 2 and 3 can be considered the simplest to describe all perspectives. The
human domain considers it ‘complete’, but not science (since Gödel’s theorem), which, on
the other hand, tends to see it as mathematically perfect. Either way, it is the basis of our
collective reality (see <Nexial-topologic deployment\ Virtual reality>), and it is no wonder,
to me, that it is ‘unreasonably effective’ (Wigner 1960) in describing its physikemorphic,
anthropomorphic, and systemic realities of ordinary and extraordinary experience, as well as
the fine-tuning of the body’s health. The appearance that this is ‘the’ best way to view what
is ignores that it is most ‘complete’ or ‘perfect’ only within the range of these common
ormalities, ordinary or not. Its validity depends on remaining, experientially, in that
sensory-based range. This leaves out, as ‘not well understood’, the aetiology of syndromes in
which ‘illness’ is difficult to pinpoint with either senses or to explain with N2d-N3p
concepts. Such modelling provides only two solutions: become normal, regulated, or push to
extremes and ‘subclimate’. If neither solution is practicable, a disheartening verdict falls:
‘learn to live with it’. These perspectival models leave a paradoxical situation in which
others’ human (subjective) and scientific appraisal (objective) of ‘sickness’, and the patient’s
are at odds. The latter feels a developing, progressive illness that appears non-existent to
others, and whose manifestations appear impossible to medical theories (eg extreme
difficulty in recovery from exertion while still being capable of great pointed effort, an
apparent healthy appearance with fast internal or systemic wasting and a greatly slowed
healing capacity.

Shapes: models by the Image

Intellectual development into meta-models and experimental development of pictorial
models come together in the M6 models that suggest many forms. Imaging is the third major
way of creating models. They are built by using N2d- as topographic synMetrics (1-way or
2-way oriented lines) and N3p- as nexion harMonics (eg sound-word, colours, song, etc.).
They are detailed in <Nexial-topologic deployment>, and constitute the underlying core of
modelling that governs developments of culture (see <C6>), mind and experience, and
civilised living. Imaged models are found in ‘advanced’ knowledges, whether scientific or
human. Most often, the image is a flat geometric picture, but sometimes it is a 3D-animation
that represents ‘the world in changing’. The most common types of topographic models produced are:

1. flows, whether directional (eg time, the ladder or tree of evolution) or circular (eg time, native spiritual wheel).

2. landscapes: The image is that of a flat land or ‘field’ (square or round), or of a ‘flatland’ with a depth (basin or pit) or a height (eg mountain, island, pyramid), in models of complexity (the topographic vocabulary of landscape is obvious in some section of the literature – see <F7\ Landscape vocabulary> and images in later chapters and Power Point presentations).

3. ‘onescapes’: The image is that of a circle, sphere, or cube (eg ‘body’, building, house, temple, experiential ‘world’…).

These models can also be viewed as the basis for our geographies of explanation, and our geometries of experience (see below). This imaging is apparent in the gesturing that accompanies speech, and constitutes a kind of ‘meta-space’.

The workings of perspectives: geometry

The following section would be easiest to formulate through images, but I will attempt to provide explanations as well.

Geometric properties of framing and conventions of representation

The Power Point presentation <PPT3 Geometry of perspective> is a collection of some discoveries I made, concerning all our perspectives, general or specific, which find their clearest explanation through geometry. Whether human or scientific, all our perspectives of explanation and of described experience are based on the two fundamental parameters. The descriptions they produce are related, geometrically, by a simple conversion of coordinates (see <PPT3\ slides 3 and 4>), yet such a shift in one’s experience or intellect can feel like a deep transformation. In describing, in <Validity and valuing>, the cognitive process of deriving representation and ‘valuings’ from observations involves a ‘frame of reference’.

This would be a familiar idea to a physicist: it consists in framing geometrically, using
coordinates relative to the self-centre. For a human scientist, this is related to the idea of ‘psychological projection’, but rather than from one person ‘onto’ another (which topologically is a ‘turn-around’), it applies to one person’s own various ways of apprehension and representation. The term ‘projection’, as I use it, refers to ‘projecting’ what is observed into ‘spheres’ of experience or explanation ruled by conventions such as time and space, or self and world, producing ‘conventionalised’ perspectives. This idea of perspectives as ‘projections’, can be translated in geometric term (figure 10).

I realised that the sketches I made to summarise essential notions, the drawings of theoretical models, and images such as in figure 8 constitute geometric 2D projections of what the 2 fundamental parameters are able to represent. The perspectival representations are naturalised, physicalised (‘physikemorphed’), or made real (realistic, ‘anthropomorphed’) by attributing conventionalised meaning to the parameters. This, however, also limits what they can ‘show’. One of my early ways of summarising notions of projection is shown in table 5:

<table>
<thead>
<tr>
<th>Framing:</th>
<th>Frames of Reference</th>
<th>Conventions: sensory coordinates</th>
</tr>
</thead>
<tbody>
<tr>
<td>L........</td>
<td>( L \rightarrow M \rightarrow R )</td>
<td>Integration &amp; differentiation</td>
</tr>
<tr>
<td>abstract paradigms: exPlanation</td>
<td>systemic COMPactions and division of ‘one’, multiplication to ‘many’</td>
<td>concrete world-views: exPERience or exPERimentation</td>
</tr>
</tbody>
</table>

The perspectives are mental, frames of reference in which the framing can be intellectual or perceptual, and require interpretation (with a bias). Their symmetries are similar, for example, to the graphic symmetry in architecture (Darva 2003).
Perception-based perspective: vision-audition-based models

The number of modes of ‘sensory perception’ varies in different cultures (3 to 6, usually). A textbook of functional anatomy (Marieb & Mallatt 2003) describes 5 ‘special senses’: taste, smell, sight, hearing, and equilibrium rather than ‘touch, which is a large group of general senses’ (Marieb & Mallatt 2003 p.466). The senses are governed by ‘special sensory receptors localised and confined to the head region’ (ibid. 5 p.466) ‘General’ visceroreceptors and other interoceptors and proprioceptors are considered ‘peripheral’ with respect to the head (ibid. 5 pp.337, 411), which interprets them. In other words, ‘sensory perception’ is ‘brain-central controlled’. It is also correlated with a self having sensate experience (psychic or psychological, constructed according to sensory modal parameters). As a result, our scientific and human models originate mostly with two senses, and which are constructed according to the corresponding ‘Number’: 2 for the stereo of vision and 3 for the volume-localising capacity of audition, or their combination.

The most general idea that pervades scientific studies of cognition and perception, as opposed to human cognitive sciences, is that scientific instruments are built on the model of perception (mostly vision and hearing), which we describe with geometry.

Moreover, the ‘geometry of experience’ (Husserl 1939), or cognition’ (eg CNRS 2006) is conceived as either a Euclidean geometry of normal perception (eg Todd et al. 2001, Todd et al. 1999, Baird & Noma 1978), flat or spherical (or geocentric), or as something closer to hyperbolic geometries for visionary experience. These correspond to ‘extra-ordinary’ perceptions, in shamanic or psychic styles of extra-sensory perception (eg Krippner 2000a,b and other authors in transpersonal and paranormal fields, who now use general, complex, systemic, and emergent approaches such as in Tart 1978). Yet the many studies are not put together to notice that both are based on what the brain-mind constructs on the basis of sensory perception, whether in the intellect or psyche. These are all located in the head and reflected directly in the geographies of our explanations, most visibly in our theoretical and experiential ‘landscapes’ (see <F7\ Landscape>). The mutual influence of mathematics and
word language and their relation to ‘advanced’ knowledge and refined experience is clear in
the following statement:

‘That this subject [imaginary numbers] has hitherto been surrounded by mysterious
obscurity, is to be attributed largely to an ill adapted notation. If, for example, +1, -1, and
the square root of -1 had been called direct, inverse and lateral units, instead of positive,
negative and imaginary (or even impossible), such an obscurity would have been out of
the question.’ (Quotations by Gauss 2006)

The very practical aspects of direction, inversion, and lateralisation are directly involved in
health (for example the mind-brain, vertical H-P-A axis and brain lateralisation) and do not
necessarily involve the habitual geometric descriptions.

**Framing systems: the view from the head**

The problem of the geometries of perception is that the origin of the objects, subjects, wholes
(complex or not) – in short, systems – that they see appears to be a great mystery to all but a
few. It has plagued both science and philosophy for centuries. Satprakashananda (1974
pp.163-70) summarised the problems of perception of wholes under the term of ‘non-
existence’. This can be (a) the absence of a thing to perception, (b) of a thing in its
components, (c) of a thing in a particular locus, or (d) a thing not being separate or different
from the not-the-thing. This is similar (and symmetric) to the Western notion of a ‘thing in
itself’… as a whole [This is a perspectivalist classification]. Satprakashananda concludes, as
does Spinoza (1901), that this ‘non-existence’ (or ‘existence in itself’) is known by
‘appropriate’ (or ‘adequate’) knowing that does not rely on the differentiating mind and the
locating sensory perception. But then, there is the problem of the seeming self-evidences:

‘It is a general conviction that geometry… is valid with unconditioned generality for all
men, all times, all peoples … The presupposition of principle for this conviction have
never been explored … But it has also become clear to us that every establishment of a
historical fact which lays claim to unconditioned objectivity likewise presupposes this
invariant or absolute a priori. Only through the disclosure of this a priori can there be an a
priori science extending beyond all historical faticities…Only on this fundament is based
the secured capacity of inquiring back from the temporarily depleted self-evidence of a
science to the primal self-evidences.’ (Husserl 1939 pp.179-180).
'Self-evidences'
The animation <trefoil> (see chapter <Perspectival observation>) helped disclose how perspectival viewing operate a framing that results in geometric projections. To oversimplify what this means, in the context of health, we could say that we look down on the body as an object, out onto the environment of the self-&-body through the senses, and inside our living existence through indirect operations of observation that frame various types of spaces, which we interpret mentally and perceptually. In other words, all the ‘aspects’ that we explain, experience, and describe with our various languages (including mathematics) are based on ‘systems’. For example our historical facts concern people, cultures, objects, countries, environments, and we even justify historical catastrophes and suffering (Eliade 1954). Our spatial realities concern objects, subjects, things, bodies, worlds, and other systems. One of them integrates both space and time, and is particularly the object of all sorts of justifications: the body’s ‘natural’ ageing, diseases, and childhood illnesses. The ‘existence’ of all these, proven or ‘self-evident’, is not primary, but relies on geometry and projections which, circularly, arise from our perceptions, abstractions and concretions with the self-centre of reference.

The result, for health, is the view of the lowly body, as a machine, vehicle, temple, or container for the self-mind-brain that is the centre of projection residing in the head. This view seems to transcend the boundaries and differentiations of culture and geography and to be universally accepted. Even when we praise the body, we anthropomorphise it as a ‘being’ that ‘knows’ and is not the self – it is ‘another’ self, still a system. The invisible activity of the head-centre transforms all observing into representations of systems with boundaries, of all kinds. In ‘advanced’ frameworks, the systemic notions are described more simply, through combinations of patterns and activities (the 2 fundamental parameters) that are directly related to the brain-mind and the various forms and images it produces. For example, Stanley Krippner (1996, 1998) discusses

‘shamanic epistemology’ in terms ‘neurognostic frameworks’ that can be viewed as “image-schemas” (see Mandler, 1988), a ‘calculus’ of archetypal processing’, ‘neuro-
algorithmic space-time simulations’. These are ‘needed to coalesce human neurophysiology with human epistemology. Now may be the time to reconsider…. their sources in imagination, intuition, visions, dreams, the senses, and the body.’

This sort of approach still assumes the separation of mind-body, even if it aims to integrate it.

The representations are algorithmic ‘image-schemas’, which come down to N2d- and N3p-parametrisation, and which, for all intents and purposes, can be qualified as ‘simulations’ (see <Nexial-topologic deployment\ virtual reality>). Whether they be mental or perceptual interpretations and constructions, their most abstract form comes as geometries. ‘Where’ the apparent universality of these geometries of perspective and framing comes from has been the object of deep questions, but no commonly acceptable answer has emerged.

The ‘idealizing primal establishment of the meaning-structure “geometry”’ (Husserl 1939 p.180) appears as the corner stone of the ‘problem-horizon of reason’ (p.180), but ‘what we learn [in text books] is how to deal with ready-made concepts… substituted for the actual production of the primal idealities’ (p.169). ‘This production is the ‘animal rationale in every man’ (p.180) and requires ‘the capacity for reactivating the primal beginnings… [which] has not been handed down with it [the learned geometry].’ (Husserl 1939 p.170)

**The animal rationale**

Geometry is sometimes considered as a realm of abstractions or primary ‘Ideas’ (referring to Plato), and sometimes as a realm related to the physical nature of the body, of the ‘animal body’ of ‘humans’. This ‘animal rationale’ is different from normal human ‘reason’, and what such an ‘animal body’ sees, it seems, is known only by imagining what and how animals can ‘know’ through ‘instinct’. Romanes (1888, pp.49-59) describes the ‘animal rationale’ as ‘recepts’:

‘[…] Recepts are received: […] How far this process of spontaneous or unintentional … combining go without the intentional co-operation of the conscious agent? […] animals display generic or perceptual ideas of Good-for-eating, Not-good-for-eating, &c.; […] How far, then, can this kind of unnamed or non-conceptional ideation extend? Or, in other words, how far can the mind travel without the vehicle of language?’ (p.49-51)

‘[…] these facts cannot be ascribed to “instinct”, seeing that tram-cars could not have been objects of previous experience to the ancestors of the ants; and therefore the degree
of receptual intelligence, or “practical inference”, which was displayed is highly
remarkable. Clearly, the insects must have appreciated the nature of these repeated
catastrophies, and correctly reasoned out the only way by which they could be avoided.’
(p.53) ‘ […] this practical knowledge in the case of animals enables them to form a
generic idea, or recept, of the equivalency between causes and effects….’ (Romanes 1888
p.59)
The ‘unnamed or non-conceptual recept’, as a ‘generic’ idea is here related to a location of
learning in the spatial environment, or in experience past, in time. This brings us back to the
two fundamental parameters that are the source of descriptions based on sequences and
‘spaces’. They primarily express geometry (of one kind or another), and develop into all our
other views, which are rooted in framing and perspective. The ‘recepts’, in this passage, are
‘received’, but they are also learned. There are various kinds of ‘received’ knowledge, in the
literature, all characterised by the fact that whence they originate is not clear. The notion of
‘recept’ does not suggest to me the same elements of experience as Romanes describes. In
my cognitive investigations, I have detected two sorts of ‘recepts’. To me, ‘recepts’ are
induced in my head, in various forms such as the automatic, learned reactions that are often
called ‘instinctive’ and considered ‘animalistic’ (eg habitual reactions), which I find driven
by brain-central-control, and knowledge, which involves the neocortex and thought.
• Sometimes they constitute simplified ideas that are related to solving thought problems
of abstraction, such as alliterations (see <EE9>), iconic images (see topographic dreams
<EE13> and <EE14>) and images related to numbers from 1 to 6 (beyond requires voluntary
and organised thinking, as do 0 and ∞). These are intuitive, and have guided my
classification work. In this case, I understand them as ‘my brain talking to my mind’: If the
manipulation of ideas is a construction of patterns of neural activity (Laughlin, McManus &
d’Aquili 1990), then the ‘unconscious’ work on thought problems during sleep translates
back into solutions coming ‘not from my self’ and received in the mind – recepts. This is the
best known process.
• The ‘recepts’ can also constitute practical warning or guidance (rather than ‘practical
inference’ – there is no ‘reasoning’ although it ‘makes sense’), often directly related to
health. Some dreams simply ‘show’ (eg <EE11\ Dream2: gluey road tar>). I construe them as ‘my body talking to my brain-mind’. Some of the visions of Teresa of Avilla (see <F20\ published EEs>) are an example that seems flagrant to me. Yet, they have been interpreted in psycho-spiritual terms, although her own first interpretation related to health and physical pain ‘here-now’. These sorts of recepts are governed by the separation self/not-self, of mind (identity)/body. The symmetry, appearing in the word ‘equivalency’ used by Romanes, relates to this separation. It is also linked to what I will call ‘covariance’ in my explanation of the ‘deployment’ of perspectives. This separation is, again, rooted in the 2 fundamental parameters of perspectival representation of experience, and in the major senses, stereo- vision (ruling N2d-) and hearing harmonics (ruling N3p-). The ‘animal rationale’ explanations, therefore often denote our own geometries of representation and the present study suggests that the geometries are the result the brain-mind-head basis of the perceptual and perspectival framing we use for rePresenting both knowledge and experience.

The problem of describing the undifferentiated

Describing another way of ‘looking’ that does not involve boundaries (structural, functional, connective, or operational), real or naturalistic space(s), and systems of various types, or repeated experience and recognition remains a problem. The N2d and N3p- parameters always result in some form of perspectival view, and pose an insoluble problem for the description of a domain that is undifferentiate. The term ‘generic’ is often used, but it does not resolve the problem because it still implies patterns (those of genera) and elements of geometry (types):

‘For a recept is the kind of idea the constituent parts of which – be they but the memories of percepts, or already more or less elaborated as recepts – unite spontaneously as soon as they are brought together. It matters not whether this readiness to unite is due to obvious similarity, or to frequent repetition: […] In animal intelligence… [observations] imply a faculty of forming generic ideas of a high order of complexity.’ (Romanes 1888 p.49-51)

‘To attain a general idea of causality …demands higher powers of abstract thought than are possessed by any animals, or even by the great majority of men; but it is no less clear that all men and most animals have a generic idea of causality, in the sense of expecting uniform experience under uniform conditions.’ (Romanes 1888 p.59)
The ‘native gauging’

The other somewhat global ‘looking’ is not a ‘general (complex) or ‘generic’ idea (stable forms), nor ‘a recept’ (received from whatever is ‘not-self’), because there is no part speaking or showing to another part, nor objects and relations. It uses imaging but is neither imagination nor geometry (classic, or hyperbolic…). It can arise from physical sensations but not from a ‘physical body’ (a spatial system), or from mental general or generic impressions (eg general mood), but it does not fit the definitions of ‘human thinking’ found in the literature (it is not algorithmic). I prefer to call it a ‘native gauging’. This mode of apprehension appears to govern the processes of apperception, induction, intuition, instinct, and global orientation, which are still considered obscure. I drew the description of ‘nexial-topology’ in <Nexial-topologic deployment> from a non-conventionalised, non-framing cognition (see <Endnote C11\ Non-algorithmic> that is this ‘native gauging’.

The problem of domain transfer (Sc-, H-)

The profound differences of interpretation of the graphic models we make and turn to scientific and human images, explanations, and experiences, leads to creating deep problems that involve anthropomorphism (a known issue) but also physikemorphism. I noticed such problems in comparing three things: the effects, described in the literature, of the strategies of ‘activating power’ in the physical body (eg hormones, or work); the vortex effects of adding more or less water in my kitchen blender when making the ‘Budwig spread’ (see <Appendix D\ Research materials & techniques>), and the effects of dehydration on my degree of feeling ‘in survival mode’ and my cognitive styles. I found the problem of domain transfer in many other situations, in which simplicity and complexity are evaluated in inverse ways. For example, a scientific Sc-broad approach to detail may be considered, by the human domain, to remain on the surface of things, ignoring general ideas and truths, or lacking in direction. Conversely, a human H-deep approach to internal subtleties may be considered by the scientific domain, to limit itself to a small core of self-centredness, ignoring many small empirical anomalies, or lacking in operational understanding.
Following are two other examples of the problem of transfer from the scientific or physical to the human and psycho-social, and vice versa:

‘The Ladder or Linear March of Evolution: …The most serious and pervasive of all misconceptions about evolution equates the concept with some notion of progress, usually inherent and predictable, and leading to a human pinnacle. Yet neither evolutionary theory nor life’s actual fossil record support such an idea. Darwinian natural selection only produces adaptation to changing local environments, not any global theme of progress. (Gould, 1995 pp.42-43)

‘Why do scientists grasp the importance of visual imagery, while most humanists accept the hegemony of the word?’ (Gould, 1995 p.40)

‘I know of no other subject so distorted by canonical icons [than] evolution and the history of life: the image we see reflects social preferences and psychological hopes, rather than paleontological data or Darwinian theory. This theme of constraint by standard pictures is particularly important in science, where every major theory has a characteristic icon… [for example] the Boor atom.’ (Gould, 1995 p.42)

‘The study of art has been plagued by our desire to see this essentially human skill in a progressive evolutionary context: simple artistic expressions should lead to later, more sophisticated creations. […] Yet… the evidence increasingly refuses to fit. […] for example,… from the first charcoal animal drawings to the more recent multicolour animals drawn with a clear sense of perspective at famous sites such as Lascaux and Altamira… And yet the beautiful multicolour horses, lions and mammoths at the Grotte Chauvet,… dating from 32,400 years before present, are now thought to be the oldest examples of cave art in the world.… The archaeological evidence is now forcing us to come up with new timescales for cultural change and innovation. This is a challenge that makes the smallest finds of archaeology as important as the largest.’ (Sinclair 2003)

**The problem of reification**

In science, model-making is viewed in two ways, as a basic activity of concrete modelling of physical objects or bodies, or as a creation of abstract models by analogy. The models are attributed to either something real to the senses, or considered ‘pure abstractions’, whether logic or analogic. In the human domain, models are mind representations, real to the mind or self, and represent objects or subjects that ‘exist’ in time, or are material or spatial. They can also be productions of the imagination, still real to the mind, or even real to the senses (eg visions). These views may be considered as sensory-derived (geometric) ‘projections’. The
are also ‘reifications’, objectifying or subjectifying what is observed, or turning it into entire worlds, all of which are systems. They are anthropomorphised (realistic or imaginal), or ‘physikemorphed’ (naturalistic), or considered ideal descriptions of the appearance, occurrence, or arising of these realities and spatialities. This requirement imposed culturally on imaging forces the models to make use of the 2 parameters we use to describe reality through the many perspectives that constitute culture:

‘The Googly problem: […] Although all this was remarkably satisfying, a definite problem began to loom large. The problem of introducing SD Weyl curvature into the geometry of twistor space has been referred to as the (gravitational) googly problem of twistor theory—in reference to the cricketing term “googly” for a ball that spins in a right-handed sense even though the bowling action suggests a left-handed spin. Taking the cricketing analogy further, I now refer to the original “non-linear graviton” (mentioned above; as given in (Penrose 1976) as the leg-break construction. […] If twistor theory is to be taken to be a physical theory, the gravitational field as it is actually understood, must be described by a (Weyl) curvature for a space-time which possesses both an SD (self-dual) and an ASD part [anti-self-dual]…’ (Penrose 1999)

Thus, the models and images can only build on previously accepted images, and become ever more complex—and oversimplified—, and cannot describe anything but what our biased perspectives apprehend. With this limitation comes the deepest failure of perspectival framing and geometry-derived mapping with dual and polar parameters: their incapacity to explain the origin of value and validity, which they define. Consequently, they ignore properties that can be ‘observed’ (but not described conventionally or described in the N2d- and N3p- terms), and in particular some that eventually lead to disease occurring suddenly, apparently ‘out of the blue’—one does not ‘feel it coming’. One such property is ‘swelling’. This results in the medical helplessness for sufferers of chronic syndromes, but also for all the ‘little discomforts’ and small deformations of the body that we habitually attribute to personality or body type, gender, ageing, or life stages. These receive no explanation from medicine, apart from ‘it is not going to kill you, so nothing needs to be done about it’. This attitude is difficult to accept for a mother who wishes to keep her children’s health, sanity, and life in the human world ‘on track’, and who senses physical deformations, personality
distortions, mental and social limitations that loom in a child’s young existence. A patient may also sense such small changes in their own health, although most do not. Another consequence of the ubiquitous hegemony of the N2d- and N3p- parameters and their imaged productions is the progressive deformation of new ideas or approaches to the realities they produce. These are evident when reading entries in an encyclopedia of philosophy. The explanations of the work of a ‘deep’ thinker shift the ideas through changes in vocabulary or definitions. This is visible also in the development of an author’s thinking throughout a career. One example of the effects of linguistic derivations is provided in <Endnote C12>, concerning aquatic biologist Rachel Carson.

**Implications**

The general approach of perspective cannot describe anything but what is conventionally framed as systems, represented in terms of time-space, or of self-world, with boundaries (of various perspectively defined kinds). Since boundary phenomena (eg reactions, extremes, recurrence) are a major aspect of the chronic low-grade syndromes, it is no wonder that conventionalised explanations in medicine cannot make clear sense of them, in particular, with respect to causality. Perspectival analysis and mapping also explain why the general-systemic and integral approaches to methodology were not sufficient to understand the syndromes. Even this most ‘advanced’ approach (combining Sc- and H-) does not allow the description of an undifferentiate domain (eg global correlates of health) and non-local phenomena. These can be apprehended directly through animated imaging, but not appropriately described with conventionalised means. In particular, using words to ‘lay out’ this undifferentiated situation, and its countless non-local implications, produces complicated texts, like this thesis. It also forces the reader into the details of unfamiliar fields that are unnecessary and which hide the simplicity of what the animated imaging shows more directly. Explaining my findings in words is inherently inadequate.

The present work proposes another way of interpreting the ‘animated geometry’ style of imaging that can be ‘sensed’, but does not involve sensory or ‘sensate’ representation. In chapter <Nexial-topologic deployment> I attempt to explain with images how ‘nexial-
topology’ provides a means of modelling an undifferentiated situation and its impact on particular conditions that arise anytime and any place in the ‘physical world of humans’, such as the syndromes studied. The impact also concerns all the perspectives we use in explanation and experience description, as do our cultures and civilisations in general. These are involved in the medical and body domains, but also in all the other aspects that influence our attitudes to health and body. This chapter is also fairly difficult to follow, because I am limited to flat images to convey my findings in general terms, with specific examples (perspectival limitation), as well as to give a sense to the non-specialist, of what ‘topology’ means.
Validity and Valuing

‘Particularly important is the notion of not blaming the victim.’ (Graham 2001)

The effects of attributing values to bodily and mental variables to evaluate ‘evidence’ of illness can be devastating. The issue of validity in research can also be distressing.

The notion of validity

During my Masters studies, I made a mind-map of many definitions of the word ‘science’, and of ‘scientific method’. I explored the criteria for ‘good science’ and what is ‘valid’ knowledge. Various writers have emphasised diverse aspects (eg logical rigour, empirical evidence, reproducibility…) What is valid for one perspective is not necessarily so for another, particularly in the mutual appraisal of physical and human sciences – a problem for the present cross-domain study. I was faced with dilemmas that contributed to motivating my analysis of perspectives. General validation strategies and what constitutes ‘evidence’ are contentious, and have been the object of large bodies of literature in both philosophy and sciences. They make it difficult to define low-grade medical syndromes and clarify their symptoms

General strategies for validation

Validation procedures differ across the various areas of science: proof is crucial in mathematics, and non-circular logic or reasoning in philosophy. In qualitative sciences, phenomenology of a human experience has to be reasonably widespread in the population, and this often requires long justifications about the existence and reality of experiences for some people. There are countless models for complex mechanisms of validation in qualitative science – almost one per new method formalised – and this causes distress to
many researchers, particularly for innovative approaches. This problem is also no longer limited to human sciences: nutritional research and clinical trials are rife with challenges to methodological validity. Some areas remain unexplored, such as the percentage of failure in a clinical trial, almost never investigated and rarely discussed. These problems are related to epistemology and theoretical assumptions, but also to ontology. Revisiting several times during this project, the diversity of perspectives on validity of explanation and experience did not clarify these problems until the less differentiated model, which provided a topologic meaning, was developed (see chapter <Nexual-topologic deployment>). The most general types of validity and validation strategies I found (not only in academia) can be classified as perspectives (table 6).

<table>
<thead>
<tr>
<th>Table 6: Validation strategies and perspectival validity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>generalisation:</strong></td>
</tr>
<tr>
<td><strong>internal validity (logical reason or intuition)</strong></td>
</tr>
<tr>
<td><strong>external validity (collective consensus)</strong></td>
</tr>
<tr>
<td>confirmed by</td>
</tr>
<tr>
<td>L-time--Prediction</td>
</tr>
<tr>
<td>reliable &amp; ‘pragmatic’ usefulness verified by M-Replication in spaces</td>
</tr>
<tr>
<td>justified by</td>
</tr>
<tr>
<td>R-time-honoured Tradition</td>
</tr>
<tr>
<td>substantiated existence of ‘evidence’ = localisation in a collective timed-space</td>
</tr>
</tbody>
</table>

| N2d: ‘eSTABlished’ validity                             |
| objectively true to brain-interpreted senses$^1$        |
| = found in the collective physical reality              |

| N3p: ‘STABilised’ validity                              |
| subjectively real to mental sense of self$^2$           |
| = found in the collective human reality                 |

| collective geoMetry of experience                      |
| collective geoGraphies of explanation                  |

Internal and external validity are abstract, generalised notions. The first requires non-circular explanatory reasoning, for a logical rigour that has its root in collectively accepted intuition (eg mathematical or spiritual principles). The second requires the consistency between experience and explanation. This is a basic circularity, although necessary for a coherent perspective and a collective consensus on what is ‘real’. The second line of the table is based on sequencing: time-prediction (of physical findings), time-series replication (to generalise), and time-honoured traditions (eg defining humans as emotional or energetic or material beings). These strategies aim to compensate for the unreliability of what the senses (outer or inner) show, which many know, can be deceiving. Scientists often speak of ‘establishing’

$^1$ The brain interprets sensory perception (5 senses in Western culture).

$^2$ Psychologically or subjectively real experiences are ‘sensate’: constructed mentally as sensory models that inform the self, sometimes with several ‘extra’ senses for the ‘psychic’.
scientific evidence or causal correlations, and philosophers of communal processes that
stabilise the evidence into a collectively agreed human reality (paradigm) – or unreality. All
these arise from and produce, circularly, our re-Presentations, the geoMetries of experience
and collective geoGraphies of explanation (see chapter <Many perspectives>). They are the
basis for cultural symbols and icons such as the head-centre. More developed forms result in
the complex landscapes, abstract and concrete that rule our lifestyles. They ultimately
produce ‘syndromes of instability’ (how is demonstrated in <Nexial-topologic
deployment>), and knowledges that cannot make sense of them. This project aimed to
address this by ‘going back to the drawing board’ for a fresh look.

Until such time as all this could be mapped or modelled, one way to avoid complete
paralysis and begin to experiment, was to reduce the complicated literature on validity to
something workable – a few key guidelines. The following three quotes show that even
guiding words do not necessarily express matching models:

‘The entire study’s trustworthiness is tested by four naturalistic analogues to the
conventional criteria of internal and external validity, reliability, and objectivity, which
are termed “credibility”, “transferability”, “dependability” and “confirmability”,
respectively.’ (Lincoln & Guba 1985 p.188)

‘Much has been written, especially within the positivistic paradigm, about the need for
empirical adequacy in all components of research. Definitions must be operational;
methods and conclusions must be objective, valid, reliable, and generalizable, and
theories must provide for the possibility of their falsification by subsequently collected
data.’ (Braud p.66).

‘…the various procedures that help ensure internal and external validity, generalizability,
and reliability, and on intellectual criteria for consistency,’ (Braud p.66).

Many such sets exist and could be devised, so I decided to adopt the simpler general attitudes
I had learned a long time ago in physics: Any hypothesis, ‘truth’, or ‘reality’ is a ‘working
truth’, liable to be reviewed if it is defaulted by observations that do not ‘fit’ or cannot be
explained. It is also only a ‘representation’, adequate ‘for all intents and purposes’ in the
situation at hand, until challenged. All evidence, ideas, experiences, models, and other
aspects, are explored systematically, with unbiased rigour, and failsafe mechanisms against bias. I added that findings must be consistent with the global store of both knowledge and experience, but not create self-consistent ‘worlds of the mind’ ungrounded in daily living and physical health. The ‘working truths’ drawn from my observations must account for other’s ‘truths’ and ‘realities’, but, inversely, those mapped and modelled from others’ views must also account for the local-case studied, and not exclude the non-‘Human’. All this within the measure of my limited capacities.

This general approach has served me well. It detected that, despite consistency, both internal and external, perspectival maps, as well as their nexial-topologic ‘deployment’ are incomplete. They ‘turn inside-out’ the ‘native gauging’ and do not map what it shows. Instead, they focus on finding arcane rationalisations for its being ‘invisible’, ‘hidden’, or ‘lost’ (or on creating correlate iconic experiences). Together, nexial-topologic deployment of conventionalised perspectives, and non-deployed gauging provided a new understanding of chronic syndromes, and answered my general research question. The approach also led to defining the domains of validity of the two forms of nexial-topology (see <Conclusions>).

**Types of ‘evidence’: ways of ‘valuing’**

Validity rests on criteria related to ‘evidence’, whether it is physical existence (eg symptoms, proof) or substantiation of human experience (eg pain, existing description). I approached this by exploring the variable nature of ‘attributing value ’. In the particular case of syndromes of low-grade chronic illness (not resulting in life-threatening conditions), some sweeping devaluations are due to the difficulty of ‘proving’ symptoms (signs of ‘illness’ far from evident to the clinician’s senses, medical instruments, and even to the social circle). These rely on the recognition of elements that can be measured, named, ascribed a valance (eg degree), or ‘valued’ in other ways. Perspectival analysis of these ways of ‘valuing’ produced the following table 7. This table can be read downwards, or upwards.

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3 The terms ‘deployment’, ‘conventionalised’, and ‘gauging’ are explained in <Nexial-topologic deployment>.
Table 7: Forms of ‘valuing’

<table>
<thead>
<tr>
<th>Form of Valuing</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$\Theta$ / $\Theta$ N2d-Binary value</td>
<td>(dualist valuing / devaluation) ‘good-bad’</td>
</tr>
<tr>
<td>N2d-N3p-Evaluation</td>
<td>(valance on a scale: usefulness in establishing / stabilising a desirable baseline)</td>
</tr>
<tr>
<td>N3p-Modal set of values</td>
<td>(‘value-based’ polarisation)</td>
</tr>
</tbody>
</table>

Substantiated existence: localisation in the human-physical timed-space (genera):

<table>
<thead>
<tr>
<th>Measured, Numbers</th>
<th>Naming, Word</th>
</tr>
</thead>
<tbody>
<tr>
<td>COORDINATES of experience</td>
<td>FRAMEWORK of explanation</td>
</tr>
</tbody>
</table>

**Explanation-down: collective ways of valuing**

In the down direction, ‘value’ can be regarded as a graded evaluation (eg of impairment, improvement, dysfunction), a binary sentence (eg ‘sick’ or not), or a modal value (eg polarised comparison to a statistical normality or a standard point or range). These values are based on measures and nosological names, and pose problems. Objective measures are often not enough for the diagnosis of a condition such as the FM-CFIDS-ME syndrome. Moreover, because the condition forces one to slow down (tension, fatigue, brain difficulties), the ‘illness’, in some ways, also feels like a return to some sort of behavioural sanity, making an illness name not quite appropriate. Yet, on the other hand the common verdict of ‘there is nothing wrong with you’ does not suit either, since integrity is drastically reduced and susceptibility is high. Simplistic values such as strong/weak create many paradoxes: reactions can be quite powerful and overwhelming in a weakened state. The forms of ‘valuing’ are inconsistent, and do not adequately make sense of the condition. This begged the question: whence does this confusion and diversity of valuing come from?

**Explanation-up: individual cognitive process of observing and valuing**

This, I explored by investigating the cognitive process of observing and ascribing value. The perspectival classification of table 7 brings out the process I found, which goes from a first logical step of ‘observing’ to ‘valuing’ in various modes. This can be apprehended by reading the table from bottom to top, following one persons’ cognitive deployment (the valuer). A previous step is the ‘native gauging’ that produces an animated-geometry of the situation. It is expressed in gestures (geometry-related) that tell of nexial and topographic elements. This develops into my referring to ‘me’ as a human-sensate observer, placed at the
centre of the ‘space’ observed (seen, heard: its centre is in the head). I also refer to this ‘world’ as physical-sensory evidence perceived at a moment in time. This can be represented with coordinates of experience (eg to measure an intensity or direction), and a framework of explanation (eg naming the origin or cause of my perceptions). Eventually, an evaluation appears (eg ‘this isn’t normal’, ‘natural’, ‘what it used to be’, ‘not good’)… that betrays an entire set of values... (There would be many other ways of creating a story out of this table, and it might be different for someone from another culture.) I summarise all these forms in the term ‘valuing’. ‘Valuing’ produces at once the ‘self’ that values, and the ‘evidence’ it uses to experience and explain. The ‘valuing’ arises from the brain’s interpretation of sensory perception and the concurrent localisation of the ‘observer’ in my head. This cognitive process is confirmed negatively by the wide acceptance of the necessity or inevitability of having a ‘self’ (an ego, soul, godly Self…). The vague sensations and ‘native sense’ do not involve a ‘self’, cannot be named, measured, scaled, or evaluated by these means. They have no recognised value or validity for health (or other spheres), are ignored.

‘Researcher bias’ and circumnavigating the perspectives

For perspectival analysis, I ‘tried on’ others’ ways of valuing. I circumnavigated their related abstract explanations of health, epistemological techniques, experiential styles, and ontologies of the body, attempting to ‘walk in their shoes’ as far as my limitations allowed. This was my understanding of the integral method on which I based my research design

‘[...] by privileging only certain ways and aims of knowing – and by ignoring or devaluing others – we are unnecessarily and unwisely limiting…’ (Braud 1998 p.3).

My analyses of these perspectives involved classifying them and critically comparing the eventual ‘valuing’ thus produced of physical ‘health’, to the global image given locally⁴ by the native animated geometry that does not use valuing conventions. In most cases, the result was the inversion noticed by Williamson and PEARSE (1980; also see <Health and illness>). The body appears healthy and to feel well while, in fact, affected by disease. Alternatively,

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⁴This ‘local’ gauging is related to a bodymind affected by chronic damage.
the body is devalued as ‘primitive’ or ‘animal’, compared to the mind or brain, because of its apparently inevitable endless demands for attention (food, ‘work at’ staying healthy…), inevitable pain, and disgraceful ageing. It is considered a mere carrier of its emotions and energies, or an imperfect machine-vehicle-container for the mind and brain.

I cannot embrace this, but always make a point of not devaluing any perspective and, instead, ‘place’ it in the global ‘space’ of the physical-human world-history (a topologic ‘space’ with a scheme of unfoldment and enfoldment). To me, such views come with a state of emergency, in which the mind-brain ‘drives’ hard and directs all; it is not a permanent state. I studied the progression into this state (through nexial and topographic indicators), and its stopping into ‘ease’ (more physical and physiological effectiveness). I compensated for perspectival bias by circumnavigating all perspectives on health ecology and body, by deconstructing the notions of anthropomorphic self, ‘physical body’, and their integration ‘as a whole system’ body-mind. ‘Gauging’ the perspectives (without measure, naming, or other valuings) showed them as ‘turned-inside-out’.

‘Soma-Analysis and the Vertical Axis

The ‘soma-analysis’ performed in Phase one brought to light the importance of the localisation of the point of reference in the head, brain, and mind, and the consequent dualism [brain-mind]→body. Many tend to consider that this dualism is characteristic of Western culture, but Eastern culture has its own version. The dominant Western version tends to be more structural and connective (self and body things), the Eastern version more functional and operational (energies of the emotional or sexual self and flows of life). All forms actually operate in both general cultures, some being more dominant. In Eastern as in Western traditions, from antiquity (at least about 650BC) to modern times, the collective ‘core’ framework of explanation and experience, including medical, always considers, it seems, that the mind or brain affect and control the body or fail to do so (see <Extract F6>): the head rules the body vertically. This view seems to be a collective constant in most stages of cultural / civilised development (reexpressed through long periods). It places more value
on the ‘life of the mind’, its social or mental self, its driving spirit for survival or sexual power, on brain-organised behaviour of person and ‘physical’ body-system, than on the brain-body’s insusceptibility (not needing to entrain these or, in turn, entrain aggressive-defence behaviour of the body-system – see <Health and illness>). This is not consistent with the basis of ‘native gauging’ in non-entrainment, nor with what some people actually do in their daily living in certain conditions.

In my experiments, the ‘needs’ of emergency/critical conditions entrain head control temporarily, for targeted benefit, but at a cost for insusceptibility and ‘ease’: There is hidden low-grade damage to ‘integrity under operations’ (an ‘exhaustion of resources’). In a few archaic remnants of earlier myths of ‘The East’ (see <Ancient perspectivalism>), the stories are less differentiated and mention the same global damage, affecting children most, and the baseline of critical response. This corroborated my sense of ‘turned-around’, and the ‘gauging’ for which this critical basis of perspectival valuing constitutes a modelling of ‘limit’ and extremes (small or large).

**H-‘researcher orientation’ and Sc-‘local orienting’ in observation**

[These two names are H- and Sc- interpretations of the same projection of the topologic ‘vertical axis’ (explained in other chapters)]. Both the critical benefit and devaluation of the body-container are valuings, and other practical evaluations are often justified by using them. They arise from the vertical axis, whether its ‘direction’ becomes set ‘up’ or ‘down,’ or both. Valuings are perspectival differentiations, related to the reference localisation in the head, and so to this vertical ‘orienting’ in critical state. They are ‘turned inside-out’ because they consider some degree of criticality as a primary baseline, and describe only deployments (eg nature ← nurture). The ‘self-evidence’ that philosophers who evaluate works in physics often mention, is of the same nature – an unchallenged acceptance of the baseline of critical deployment, boundary phenomena, definition of systems, and conventionalised valuing.
I construe this tendency to deploy as a ‘local’ topologic ‘orienting’ (creating an axis) of both observer and observed. In human terminology, it is a ‘researcher orientation’ to degrees of criticality. The H- and Sc- vocabularies are here difficult to manipulate. My own ‘researcher orientation’ is opposite. It acknowledges the mental realm (used to report on my research) and primacy of the head over the ‘physical’ body-system (used to make the body sit long hours at the computer), as deployments rather than as primary. It tends to stopping deployment, non-criticality, and not discerning mind from body or from world. The non-deployed state can be described as global ‘ease’, ‘integrity under operations’, ‘proto-health’.

I cannot change or compensate for my H-orientation as I can for bias, cannot ‘turn-around’ my Sc-‘local orienting’ (shifting my apprehension of spontaneous ‘ease’ into something to be worked at, grown into, chosen, deployed), but I observed it, and can disclose it. I did this by investigating experimentally the mutual ruling of brain-mind-head and rest of the body, and disclosing (a) <EES> concerning my experience related to criticality and lack of it, (b) a wholistic ‘view of the world’ apprehended locally – the phenomenological portrait ‘Physical wasting’ in <Conclusions> (obviously coloured by my current critical health ecology.), (c) the discussion of domains of application in <Conclusions> and (d) attempting to express ‘non-deployment’ or non-differentiation. What allowed me, however, to offset this H- ‘researcher orientation’ and Sc-‘local orienting’, was to take the ‘native gauging’ as a

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5 The following is unavoidably complicated (the imaging shows the same, more simply). My focus on physical health ecology during this project was placing primacy on the body. This bias was inverted during my Masters study of the mind. My ‘orienting’ is something different. It would be an inadequate conventionalisation to interpret my ‘local orienting’ or ‘research orientation’ as considering the physical realm (or ‘body’) as more primary than the mind realm. It just happens that ‘ease’ manifests more readily in physical sensations than mental impressions in my local case. The non-deployed state can be described as ‘ease’, but also translates as ‘physically insusceptible’, ‘mentally unaffected’, behaviourally ‘effortless’ (not straining or stressful, ‘easy’), etc. Such words are liable to drastic inversions and drifts of meaning rooted in conventionalised valuing: see ‘materially easy’ in <Conclusions> figure 44>, think of mental detachment, ‘follow your bliss’, ‘don’t work hard, work smart’, etc.). It is my current bias (health, body) that focused on the physical effect. None of these explanations make it clear that I cannot embrace criticality as ‘primary’ or as a ‘natural’ baseline of experience (eg the recurring but not quite permanent pains and instability of a female body-mind) – and this does not mean that I devalue critical phenomena altogether. Hence the necessity to use imaging rather than words to express such things.
permanent benchmark throughout the project. This paves the way for possible generalised
use of nexial-topology by others.

Rarely is the basis of criticality made apparent. In <F20\> Published EEs>, are examples of
disclosure, but these are not academic publications and do not make the ‘local’ orienting of
ideas clear. The non-critical in daily life is ‘invisible’. We dismiss many unremarkable
sensations and vague moods that are neither exceptional nor habitual. We simply tend to
consider them ‘natural’, universally ‘human’, ‘self-evident’, and ‘the same for every body’
as in ourselves, even though they may differ with individuals and groups (think of the speedy
physical healing in ‘primitive’ tribes, which astonished so many anthropologists). Yet, these
unremarkable ‘givens’ – the very practical basis of daily living, betray the unnoticed baseline
that remains unchallenged. Neither this baseline nor ‘researcher orientation’ are taken into
account in research. (The perspectival forms of ‘researcher bias’ are derived from this.)

Findings of research, I propose, (and those of daily life accumulated ‘experience’) are
relative to a domain of criticality that can be modelled through ‘researcher orienting’,
denoted by the ‘unremarkable’ of daily living. They are relative to this ‘local orienting’ and
state of criticality, to the observer’s state of ‘need’. The attendant generalisations and
specification of practices can have deleterious effects on daily living that is ‘oriented’
differently (eg non-critical, without special need or generalised survival imperative). This
remains a blind spot, and a hidden aspect of research.

**Predictable valuing and deployment**

Although details of valuing vary with context and perspective, ‘valuings’ have global
properties of deployment that are modelled by nexial-topology and therefore their deployed
‘placing’ is ‘predictable’ – that is, the ‘placing is a built-in part of deployment (see figure
11), For example:

(a) The scientific and human valuings are symmetric, viewed as either opposed (at order 2)
or complementary (order 3), and transfers between the two can create conflicts of valuing
that are endemic in all aspects of culture.
(b) At the order 2 in this image, a person whose perspectival bias is toward the Left- tends to collect intellectual information about what is wrong $\Theta$ (‘monitor our demise’, Hill 2001), and be pessimistic$\Theta$. A person biased toward the Right- tends to look for the ‘good side of life’ $\oplus$ experientially, and be optimistic. Resonance may be seen as R-creative chaos or L-catastrophe. I symbolise this as L-$\Theta$ and R-$\Theta$, in general. At order 3 in figure 11, the paradigmatic position shifts, devaluing the other side’s perspective as a ‘previous’ or less complete stage. In more developed stages, the positive and negative can be evaluated as complementary, and either a benefit or a hindrance. In ‘gauging’ these binary values are irrelevant unless there is emergency or critical conditions.

(c) A number of other remarks could be made, but these are sufficient to show that the deployments of validity and value are predictable. They do not, ultimately, alter the global course of deployment, but participate in it. They locate or place differently the causes and blames, solutions and improvements, only shifting them from one expressed sphere to another. The ‘orienting’ to criticality remains the same, and the conventionalised ‘valuings’ maintain the same baseline hidden costs to human physicality.

I will show that ‘valuing’ also interferes with ‘gauging’. Thanks to ‘gauging’ the perspectives globally, I discovered topology as a method applicable for a cross-domain study of health ecology and un-deployed nexial-topology to describe health without hidden cost. The account presented in these pages would not have come to be without my attempt, purposeful during this research project, at following in the footsteps of Spinoza:

‘I have made a ceaseless effort not to ridicule,

not to bewail, not to scorn human actions,

but to understand them.’ (Spinoza 1901)
Figure 11. Valuing
Nexial-topologic deployment of perspectives

The perspectives and models, previously classified in <Many perspectives>, can be organised visually, as a progressive change of shape, a ‘spreading’ that is also a ‘gathering’—a ‘deployment’. The following images are based on topology, but the topologic ‘space’ that alters is not a conventional physical space, although it is strictly grounded in the body (including sensations and the brain-mind). Nor is it an abstract, ideal, or theoretical space with distortions described by complex mathematics (eg knot theory or strings). This topologic space is an undifferentiated ‘nexus’ of physical human daily living, hence the descriptive method is called ‘nexial-topology’. Anything not directly relevant to this nexus is found to belong to conventionalised perspectives derived from the 2 fundamental parameters I defined. The present nexial-topologic description does not need to take into account whatever particular expressions are normally (or extraordinarily) derived from separating or combining the parameters Axis Mundi and Primus Movens. Doing this produces perspectives characterised by conventions such as space-time, systemic separation of body-environment or self-world, specific or generalised contexts, universals-particulars, or evaluations of ill or not-sick. In contrast, nexial-topology is a non-differentiating ‘situation modelling’ for a non-defined ‘situation’: for example, without defining a health case with causes for an individual body or personal history discerned from the global human world and history of the physical body. The following description may appear very abstract or general, but recalling iconic images, analogies, and metaphors of daily life can bring out the wide-ranging application and implications of the images. What the images ‘show’, or ‘lay out’, affects general ideas and theories, but it is also extremely concrete: I found the topologic properties I describe by
observing sensations, what others and I say when we speak of illness or stress, and the
human world in general.

**Materials supported by this chapter: Power Point presentations**

- The Power Point presentation <PPT1 Body> is designed to demonstrate how practical all
  this is for bodily sensation as well as general notions of health.
- The selection of imaged models gathered in <PPT2 Models collected> will help follow
  the developments listed in this chapter.
- The ways of framing described in <PPT3 Geometry of perspective> are presented below
  as differentiating expressions of nexional-topologic apprehension, and their apparently
  ‘primary’ nature as a topologic deployment.
- The images of <PPT4 Einstein> are included to relate the following explanation to both
  fundamental science (Einstein) and philosophy (Abbott), as well as daily life (my images).
- The diversity of images gathered in <PPT5 Nexial-topologic imaging> is aimed at
  showing various applications of nexional-topology, and various circumstances in which this
  kind of imaging is useful.
- The rules of thumb for geometric deployment are summarised in <PPT7 Three geometric
  rules of Nexial-topology>.

All these images describe general ways for creating models, from which the various types of
specific *perspectival* models and perceptions are derived, as will be explained. Perspectival
analysis can map and explain these limited *developments* into various types (as shown in
<Many perspectives>), but my interest in this chapter is not in the categorisation of models.
Rather, my aim is to describe the process by which the ‘apprehending’ through animated-
image imaging becomes expressed in and limited to ‘creating models’, general or specific
representations, and ‘manifesting’, ‘acting out’, or ‘finding’ the realities of our explained
experience. What these ways leave out is highlighted by (a) reducing the ‘animated imaging’
to flat images for the purpose of explanation, or description, and by (b) demonstrating
‘activity’ through 3-dimensional reconstructions of ‘movement’ or ‘motion’, which have
‘extension’ in spaces. Both are ruled by perspective (eg computer animation or perception),
and something is lost from the nexial-topologic imaging, in thus conventionalising, ‘reducing’ (Se-compacting) it.

The order of deployment presented here could be different for the derived general and specific models (for example, beginning with general duality and ending with modal perspectives on the body, but in reverse, beginning with activities of the mind to finish on the cognitive patterns and physical networks of the brain). The order of deployment of all derivations that I use for the following sequential explanation is what makes sense to me globally. That is, it expresses an undifferentiated apprehension of human living in general, and mine in particular, without ‘personal’ bias, but given the ‘human-physical instrument’ I have (a female body-brain) and its ‘orienting’ (see below, and <Validity and valuing>). The order would be inverted if the basic orienting made the head-brain-mind (eg consciousness, be it ‘embodied’, or culture) ‘primary’ and the physical-animal body-brain ‘secondary’, as is the case in most theorising in any field I reviewed.

‘Deployment’ of general perspectives: ‘unfolding’ & ‘enfolding’

The term ‘deployment’ is topologic, and so graphic, geometric in nature. It is sometimes used intuitively, without clear definition. Bohm (1980) used the linguistic split of ‘unfoldment’-‘enfoldment’ to express it in describing his ‘implicate order’, and ‘undivided universe’. To ‘unfold’ means to bring out, spread, develop, or grow, and to ‘enfold’ means to wrap up, envelop into a folded state (Macquarie dictionary 1981). A wholistic or integrative image often used is the naturalistic analogy of an acorn growing into a tree, which then produces more acorns, or a new acorn. The philosophical term ‘extension’ and the scientific notion of ‘localisation’ (see <Extract F5\ Gauging thinkers>) seem equivalent to the idea of ‘deployment’. In conventional contexts, ‘deployment’, is expressed as unfolding-enfolding, development-regression, generation-degeneration, abstraction-concretion, expression-manifestation, creation-destruction, growing-dying, etc. Unfolding-enfolding may be considered a device of the method of nexial-topology to explain in words or images, or ‘lay out’ the meaning of ‘deployment’ which, in turn, is a device to model, or extract and compact in image, the animated ‘likeness’ of the situation apprehended by ‘native gauging’.
This modelling (nexitial-topology) is not ‘precise’ in the scientific terms of calculation, nor ‘approximate’, but is a H-global, or Sc-‘non-local’ imaging and applies like a generic notion. The following images provide an artificial and necessarily partial breakdown of a non-differentiated situation. There are various ways of operating the descriptive breakdown to show different things. This particular breakdown may appear clumsy, to a geometer or topologist, and even inadequate at times, but my aim here is not exactitude in the particular details of the images or to mention all the specific associations with or expressions of the models. Rather, I am attempting to show how topology may underlie the geometries we use to create theoretical models and practical representations, and to build the icons that rule both culture and our ‘civilised’ behaviours. It is sufficient to see that the ‘deployment’ is both an ‘unfolding’ of generalities and an ‘enfolding’ of specifics, and how this works in creating all the particular systems of what we consider to ‘exist’. The list of models is far from exhaustive, and there are countless other variations and derivations, particularly as icons in the arcane or ‘secret’ knowledges related to religion, such as those found in Chinese inner alchemy or the Bible. Some words attached to icons are listed in the large table 9, and my study of them introduced there. Focusing attention on the inadequacies of my understanding of others, or on the details of my exposé in words, to understand my ‘original meaning’, would detract from apprehending the imaging and its global meaning. It will be more useful to the reader to sense intuitively the workings of topology in the global realm that can be apprehended locally, and that underpins his or her personal lifeworld and health

**Order 1: Two fundamental parameters and generic properties**

*Generic notion: Primus Movers and N3p-polarised activity*

*Generic notion: Vertical Axis Mundi and N2d-dualised direction*

The two fundamental parameters of perspectives, N2dual- and N3polar-, representing projection and activation, or direction and polarisation, are widely accepted meanings. In <Many perspectives>, the most generic names introduced for them are: *Axis Mundi* and *Primus Movers* respectively. ‘Axis’ and ‘moving’ are what I will call ‘global’ notions (in <Ancient perspectivalism>) are less differentiated than our modern ideas of direction and
activation. The latter are habitual ways to consider either ‘how it all came to exist’ or ‘what happened at the origin’ – appearance and occurrence, or cause and change – to separate and discern them. They are used also in combination and for integration. These distinctions are found in the writings of both those who enquire through scholarly tracing back to ‘deep’ or discerning philosophies, and through tracking forward subtle clues and precise details. They are however, conventions learned by collective ‘enculturation’ (intellectual, experiential, cultural habits), and just two separate ways of apprehending the same generic situation, or rather undifferentiated, which I image in figure 12. These two fundamental parameters (N2d- and N3p-) are symmetric, or equivalent, or ‘work the same way’, but lead to different ways of constructing both explanations and experience. To make this symmetry apparent, the 2 fundamental parameters may be considered as different generic properties of the same undefined or undifferentiated situation, and represented geometrically as in figure 13. These images are at the origin of the symbolic notation (presented as 2 and 3 points in <Many perspectives>):

(1) for Axis Mundi: N2d-orienting  (2) for Primus Movens: N3p-spinning-up.

![Figure 13: ‘Orienting’ and ‘spinning up’](image)

**Generic properties of the undifferentiated ‘situation’**

An ‘orienting’ (in the language of mathematicians) is different from a ‘direction’. What direction (eg arrow) is to ‘orienting’ (eg line or axis), is what one-sided ‘development’ is to ‘deployment’ that unfolds and enfolds. This ‘oriented deployment’ is a way of differentiating basic aspects of an undifferentiated ‘the situation’. For the ‘native gauging’, the most basic ‘deployment’ is a ‘swelling’ that ‘spreads’ at the surface, like a bubble welling up to the surface of a pond, expanding in size, until it bursts through the surface. (This will be
explained further below). ‘Spinning up’ involves both turning and increase, together. They can be imagined as a spiral of increasing diameter and speed, like a 3D-spiral. In figure 12, the two parameters of figure 13 vary concurrently, in the same way (named ‘covariant’, below), but they are usually understood as separate. That is, the ‘fundamental’ explanations of appearance and occurrence involve only one of the generic parameters. In more complex models, the one parameter may be doubled to describe interactive processes. I will now present in parallel, two ways of building deployments, one based on explanation, the other based on experience, and their integration, as a ‘framing’ that produces models. This will allow me to demonstrate the equivalence of the generic parameters and the consequences of the construction into general models. This ‘construction’ has two aspects that can be viewed as ‘unfolding’ and ‘enfolding’. The difference between unfolding-enfolding will appear more clearly with images than worded explanations. Distinguishing 3 orders in sequence, and then repeated steps can also show these constructions. Some general models, drawn from the literature, are presented in the Power Point presentation <PPT3 Geometry of perspective>, which it will be useful to peruse while reading this, and again afterwards. From the viewpoint of explanation, the fundamental parameter that is the most obvious is projection, and so the topologic or generic property to use is ‘orienting’. The other parameter of activation or ‘increase’ is more significant to experience, and the topologic or generic property to use is ‘spinning-up’.

Order 2: Flows: linear and circular

- The ‘orienting’, as topologists explain it, is difficult to represent without a surface. To show how this topologic property is involved in model making, I will reduce it to a double-version of the common notion of ‘direction’, which is 1-dimensional. It can then be developed into greater dimensions (or orders, in the jargon of human sciences). Hence, I represent ‘orienting’ as a set of two arrows in

![Figure 14. Directional flows and division](image)
opposed ‘directions’ on a surface or plane. This set (figure 14) operates a division of
‘orienting’ in two direction-arrows. When this orienting property is applied to an
undifferentiated or undefined situation, it ‘spreads’ on a surface and splits in two, thus
creating 2 ‘directional flows’ that separate. If the 2 flows, which are H-directions, are
interpreted as having one mathematical Sc-dimension, they define a 1-dimensional ‘line’.
Hence a ‘line’ of ‘transport’ is Sc-H- notion derived from topologic ‘orienting’, but the
topology has become a surface topography. In archaic literature, these ‘flows’ are often
named ‘rivers’. In modern literature, the bi-directional or double flow is understood as a
splitting or division, and associated, in complex contexts, with reductionism or linear
thinking, or with a re-integrating notion of interaction. Such splitting or spreading flows can
be gestured with a movement of the hands separating from each other, palms of hands up. In
this case, the topologic notion of ‘spreading into a surface’ is still there, whereas it is not in
the word ‘transport’. One crucial characteristic of these directional flows is that the most
basic way of construing them is as dual opposites, and to gesture or speak of going ‘left and
right’ (see text extracts in <Extract F10: Left- and Right->) (now the ‘spreading surface’
notion is gone). The directional flows of figure 14 can be interpreted in many limited and
conventional ways. As a duality – a single line of transport with directions–, they define dual
relations such as stereo vision, cause-effect, or symmetry (eg opposition, divergence,
complementarity, etc. – see table 4 in <Many perspectives>, which can then be differentiated
further into 3 fundamental types of symmetry). The
image underlies many binary representations such as
before-after, activation-deactivation, going and
returning, making and unmaking, etc., and the thinking
we call ‘linear’, from which all ‘patterns’ are derived.

- The typical image of an ‘increasing spinning’ is that
of a widening spiral-cone. The more it increases, the
wider the opening of the cone and the more the circular

Figure 15. Circular
flow and spiral cone
turning motion becomes obvious. This can be understood as a ‘circular flow’, and I represent it by the image of figure 15: The cone is a typical icon in modern theories and abstract models (Gould 1995 pp.37-68). The spiral-cone is a typical image in naturalistic analogies (see Nersessian 1995, and <PPT3 Geometry of perspective\ slide 12>). In archaic literature, it is associated with a twister wind, and is typical of the ‘East’ framework (see <Ancient perspectivalism, The Earth, and The East>). This moving shape is also common in gesture when we speak of stress or explain a cyclical ‘flare up’ in a chronic condition, of things ‘getting out of hand’, or a child ‘getting into a spin’. A crucial characteristic of this imaging is the notion of turning circularly – of cycle. This may be considered a basis for the idea of natural cycles of seasons, of time, of female menstruation, etc. In fact, in archaic literature, the framework of the ‘East’ is associated with the Female as fertile Mother, and with Nature, producing ‘Mother Nature’. In the chapter <Ancient perspectivalism>, I detail a few correspondences with colours and bodily states, to what came to be called the ‘East wind’ (see <Ancient perspectivalism>), used in the old medical idea of ‘wind disease’. Both the directional flows and the circularity, as images (reduced from topology to geometry), can be combined, into a synthetic model (figure 16), in which two sets of opposites, rather than one, are generated.

**The symmetry of explanation ↔ experience, and perspectival circularity**

This combination can also be understood in terms of abstract symmetry (↔) or circularity (🎯) (figure 17), which can be interpreted in various ways. The most fundamental consequence, for theorising and modelling, resides in the symmetry between the general
perspectives that we derive from this topologic ‘spreading at surface’, and in the circularity that exists between one’s explanatory framing and one’s experience, each reinforcing and validating the other. The first was particularly obvious in the symmetric vocabularies used by L-perspectives ↔ R-perspectives. For example, a L-transport can mean the same thing as a R-communication (and a M-interaction), with only a change of context.

The circularity is what makes any general set of explanation ↔ experience, any general perspective logically self-consistent, and a workable practical paradigm. Otherwise, observations would not match explanations, and theories could no predict experience. This makes it, however, very difficult, without geometry, to detect the biased internal logical circularity of a perspective, and its externalised duality (eg physical-human) that is considered fundamental. Without images, it is not easy to see that this self-consistency does not mean the general perspective is valid for all aspects of human living for everybody universally, or that it represents everything. This symmetry-circularity is used, in particular, to rationalise the necessity, or inevitability of many things, including for health (eg the self-world interaction for survival). The symmetry means that Left- and Right- thinking are most often considered opposite in the human domain, and as one shifts from one to the other (either way), the second usually appears better. Yet it also means that Left- and Right-derived specific perspectives are equivalent, at this surface, in the general shape. For example, science uses both structural and functional concepts for its explanations. This is equivalent to the human concepts of objective and subjective: they ‘work the same way’ (same rules) and give the same image, whether interpreted in human or scientific terms. The circularity, nevertheless, is becoming known in the human domain, through the study of theoretical assumptions and experiential biases, as separate bases for paradigms of research. An implication is that quantitative and qualitative research methods are equivalent in the models they produce, and arise from the same geometry, despite the many claims that put one above the other.
Order 2: The topographic ‘FlatLand’

From a topologic viewpoint, the ‘surface phenomena’ of directional and circular flows, described in figures 14 to 17, represent a single topologic situation. They are various aspects of how to define, extend, or localise a global territory that is a flat surface out of an undifferentiated topologic ‘space’. This generic flat surface, I call a ‘FlatLand’ (figure 18), in the terminology of Abbott (1884). The plane, surface, or FlatLand, is at a square angle to the Axis Mundi ‘orienting’ (see a summary of my geometric rules of deployment in <PPT7 Three nexial-topologic rules of deployment>).

Order 2 derivations: flows to establish or stabilise

The many possible combinations all have, however, something in common. They represent some kind of edge, or limit conditions that are valued in general culture. The combined image of figure 16 (or some related imagery), and the associated notions, are fundamentally put in correspondence with two ideas that rule all aspects of our lives:

- **Dual relations to establish.** For example, structural bounds establish mechanical integrity, knowledge recognised as valid is established, flows between the brain and body establish normal adult health. This occurs in particular during puberty.

- **Circular flows stabilise.** For example, scientific knowledge is stabilised by interactions in the scientific community, creating an accepted paradigm. In daily life, our cycles of work and rest, job and holiday stabilise both health and societal living. Regular eating is part of the basic body-training we undergo in childhood, and this is related to fitness, also called ‘physical conditioning’ that has to be kept stable (‘use it or loose it’, loosing it means illness). For women, cyclical menstruation is widely considered a necessity for stable female health (not menstruating is associated with disease, extremes of athletes, and infertility). The
importance of these notions becomes clear in perusing the literature (see the selected sampling in <Extract F8\ Establish and forms of stability>.

**Virtual reality: real to the senses and ‘sensate’ mind constructions**

The circularity (and circulation) introduces limitations on explanation and constraints on experience, and on lifestyles in which both reinforce each other, creating a collective ‘virtual reality’. Its existence is known by a few (see <Extract F15\ Virtual reality>). It ‘represents’ the world to the senses, whose perceptions are constructed in the brain, interpreted the mind and psyche, and real to the self [or else, it disappears entirely, for consciousness.]. This reality relates to the physical senses, ‘sensate’ imagination of real things, and ‘psychic’ senses. Several parts of this thesis address this sensory basis, and it is an association with vision that gave the generic name ‘perspective’ (for the set of our experiences, explanations, and other expressions). From a nexial-topologic viewpoint, a perspective, specific or general, is simply the self-based reality and naturalistic physicality produced when the body and lifeworld are ruled by the brain and self-mind, by sensory perception (or sensory shutdown), and the head, activated through the vertical axis.

**Stable ↔ Established normalisation**

Combining N2d-dualised establishing and N3p-polarised stabilising is what makes us ‘normal’. (Note that this word means ‘at square angle’ in geometry). These processes are also two different ways of understanding the same normality. Two consequences of normalisation, in health, are the compensatory adaptation noticed by Williamson and colleagues (eg Williamson & Pearse 1980), and the selective adaptation described by Selye (1976), named differently by others. These are known to rely on our neuro-endocrine systems (which ‘transport’ substances and ‘communicate’ signals). Stabilisation and establishment are the main goals of most medical treatments in our dominant culture, and of the larger part of practices in any domain. This framework is also the basis for the physical adaptive selection of individuals in other animal species (Gould 1995 pp.42-43, and Darwin.

There is, here a problem in the transfer of the idea to the human domain – see
<Conclusions>). The view of daily living afforded by frameworks of this kind is both limited and constraining. This is visible in particular in the over-simplifications of left-right thinking (L-linear and R-relational), and in the rejection of this normality and simplification in marginal circles.

Order 2: Flat geoGraphies and geoMetries

Interpreted in terms of patterns (Left-thinking), this ‘FlatLand’ produces the most enduring general model found in archaic literature, which we still use for both explanation and experience – that of the ‘4 directions of the Earth’ (East-West-South-North; figure 19a). Unlike other models, this one exists, it seems, in all traditions. It governs the world of normal living, the ‘natural’ or ‘physical world of humans’, in which we have body-object, self-subject, and other relations. It stood out enough for me to make a particular study of it.

![Figure 19a. East-West-South-North](image1)

![Figure 19b. Wet-Dry-Cold-Hot](image2)

This ‘FlatLand’ is, among other qualities, a geogGraphy of explanation of the objective ‘physical’. Strangely, I could find no logically valid explanation of the origin of this framework to represent the physical world we live in (see <Ancient perspectivalism>). Nobody seems to know whence it comes. It is taken for granted, and even spiritual frameworks explain only its developments into the traditions they carry on. This ‘FlatLand’ is the ‘Land’ or ‘Dry Land’ in the Bible. It is the basis or baseline of both representations. I gather this is a case of the incapacity of a framework to explain itself. This idea, usually attributed by philosophers to Gödel’s theorem of incompleteness (Weisstein 2006a), confirmed my findings. In such frameworks of ‘FlatLand’ notions of reality, the appearance and occurrence of reality, space, or the physical world, becomes invisible because the representations are geometric rather than topologic and cannot take into account the oriented ‘origination’ of ‘existence’, or the result of spinning-up (the surface-land they describe
comes by ‘swelling’ and ‘spreading’). This stage of deployment of perspectives is the basis for the quadratic models in many analytical frameworks (symbolised by M4, see <PPT2\Models collected\ slide 2>). One of these dominated Western medicine from antiquity to the medieval period: ‘Dry-Hot-Wet-Cold’ (figure 19b), and is necessary to understand old explanations of the syndrome of instability. This ‘FlatLand’ is a landscape, a limitation of topology to topography.

**Order 2 further derivations by repetition of details:**

*‘The Many’ in colours or spectrum*

The combination of linear and circular flows (figure 16) can be repeated. This produces models of ‘The Many’ in spiritual philosophies (many ‘particulars’, in philosophy.) They are often explained through specific models formulated in terms of colours, in both modern and ancient times (eg many forms, rays, rivers, or names, or colours, as in particle physics and ‘spiral dynamics [Beck & Cowan 1996]). This can also be formulated as a ‘continuous’ spectrum (as in Willer’s 1977 framework, or the continuous series of numbers). If the ‘many’ are mapped onto a FlatLand, they may be concretised into specific models (iconic images), as abstract modelling of transport, realistic models of flowing (eg physics of fluids), naturalistic rivers, or be interpreted as real spreading or expansion, as a multiplicity or multiplying (eg of languages), a complication, etc.

The notion of repetition in itself plays a major role in our lives. Endless repetition of details is the basis for the widespread idea that the reality of human living is ‘all a matter of repetition’, and for the maintenance of that reality itself. It manifests most visibly in our habits and repetitive or patterned behaviours, in the aimless repetitions of the ‘monkey mind’ (the ego’s unstoppable mental rambling or the echo of a song). In particular, in schools this transforms spontaneous and ‘organic’ ways of learning by active doing, into the drudgery of repetitive learning practices that kill the ‘love of learning’ they purports to encourage. In daily life, repetition is ubiquitous, in our lifestyles, in the endless stream of problems to solve, and obstacles to evade, in our attitudes to the body.
**Perspectival circumnavigation**

The ‘FlatLand’ imaged in figure 18 gives rise to many different perspectives, each with a theoretical and an experiential side, with a circulation. I circumnavigated these perspectives during Phase one of this research, and the entire circulation represents the exploration of the dominant paradigms relative to health (eg regulation, or ‘freeing blocks’ in alternative medicines). Dualisation leads us to view human reality most often in terms of a limited perspective, each associated with a set of problems-solutions addressed through a general strategy for improvement (eg illness-healing by selective adaptation). The perspectival circularity of explanation ➔ experience brings the consequence that we keep shifting from one set to another, each new solution creating a new problem and challenge with it. We just keep shifting problems from one sphere to another, to eventually come right back to where we started, the same first strategy, with a slight difference. This manifests in shifts between scientific and human views, between mind and brain views of health, always coming back to the basics; including the recognition that there are ‘problems’. This going around in circles is particularly obvious in politics, but has been noticed in ecology as well:

‘Rice is increasingly replacing traditional cereal crops. But the new rice fields are ideal habitats for the vectors of diseases like malaria and schistosomiasis. Changes in the size of livestock herds can, in turn, modify the population densities of biting and blood-sucking insects. The use of new pesticides entails new risks of poisoning. Sometimes we even go in circles. In South-East Asia, after deforestation destroyed the habitat of the most important vector of malaria, new plantations of rubber trees, oil palm, and fruit trees recreated even more favourable conditions. In the agricultural sector, the Ecohealth approach aspires to create synergy between the improvement of agricultural practices and the improvement of human health while ensuring the ongoing viability of agricultural ecosystems.’ (Lebel 2003 p.41)

**Order 3: Unifying diversity: ‘crossing’ or ‘passing’**

The diversity of models (and perspectives) produced by deployment to order 2 leads to a need to unify the diversity and multiplicity, or integrate the many aspects. One way to do this is to introduce bindings between the many parts. If these are lines or flows, the image that comes is that of a lattice, or net, with the lines ‘crossing’ each other. This idea produces
models based on net, mesh, network, braids, knots, etc. This seems directly related to inventions. For example, some myths from the archaic oral traditions mention such words. Archaeological objects from prehistory anywhere in the world (Mithen 2003, Rudgley 1999) also recall these shapes, suggesting that some such model-shapes in the human mind play a role in invention as well. A technical metaphor for unifying diversity is a ‘fabric with crossings’ (an expression from topology). Some such notions in medicine are the knots of ‘chakras’ the networks of our neuro-endocrine biochemistry, the mesh of connective tissues, etc. – these do not make sense of the syndromes of instability studied here.

More relevant is another meaning of the word ‘crossing’, as ‘passing’ or ‘jumping through’ (see the long table 9). Medieval and archaic texts are replete with images of jumping through or ‘passing through the Eye’ (figure 20), passing or crossing a ‘gate’ or door. These ancient images are interpreted as metaphors. A common symbol for this in human philosophies is the circle with a point that is a centre of emergence (figures 20 & 21).

The image can be sophisticated by using that of figure 16, adding the central point to the circulation, thus representing an ‘origin’ of the expanded FlatLand, or an ‘end’, a ‘completion’ by ‘returning’ to the origin (the point), or both, depending on the tradition. This is the basis for the spiritual models of ‘the native wheel’ (pictured in perspective, in figure 21), which helps the seeker circulate around the 4 cardinal points of the Earth and find the centre, which was their origin. The idea is to ‘undo’ what appeared-occurred, but it is only on that surface. This model (figure 21, a Right-thinking interpretation) also seems to exist in all traditions, with various attached words and meanings. It is still a basis of thought and experience in Eastern cultures (eg in China). If the centre is considered separately as both beginning and end, but separately, it effectively adds one point to M5 models, or two points to M4 models, and thus yields M6-models (see <Many perspectives>) that are understood as more ‘complete’ (see <PPT2 Models collected>).
**Order 3: Nexialist quantic jump**

Figure 20 suggests also another analogy – that of a ‘spring’ (figure 22a). This is a fundamental idea in pre-archaic frameworks of ‘The East’ (see <Ancient perspectivalism>), and is related directly to water (and later the fountain of ‘Life’). ‘Spring’ is also another way of saying ‘jump’ (a metal spring, for example). From a topologic viewpoint, the sudden ‘passing’ that integrates can be imaged as the reduction, focus, or convergence of a spiral to a point (red dot in figure 22a). Modern terms such as ‘quantic jump’, ‘chaotic emergence’, or ‘sudden shift’ would be adequate to name it, and the colloquial ‘coming to a head’. This particular expression, together with the image, recalls a totemic story of the Dreamtime in Aboriginal Australia, that of Snake who comes out of a water hole (figure 22b). (‘Dreamtime’ or ‘The Dreaming’ is a ‘global notion’ as discussed in <Ancient perspectivalism>, and may be approached as a conventionalised interpretation of an undifferentiated or topologic ‘place’ – see also text extracts in <F9> and <F12>). Figure 22a, however, poses some difficulty in modelling with flat drawings, because the spiral is inverted, compared to that of figure 15 (circular flow), and yet what it represents is the result of the same ‘activation’ (eg a striking snake) as expressed in figure 15. One simple way to resolve the difficulty is to not differentiate the processes presented in figures 15 and 22a, and represent them with the same spiral, for a single topologic property (figure 23).

The notion of vortex is a common one in daily life (water swirling in the sink), and in ‘advanced’ science. In abstraction, the vertex represents well another notion common in the human domain, that of focus, convergence, or targeting. Together they image two of the ways for
‘boundary phenomena’ to happen (circulate – figure 15 –, or hit, invert, and jump – figure 23). The second is of interest next.

**Nexial ‘turn upside-down’: critical point of inversion and chirality**

The point of inversion of the direction is a discontinuity, a singularity. It represents a critical event, and this is of relevance to daily life and health. For example, we say, ‘I have *hit* rock bottom, but I kicked back up’, and, ‘I am so weakened that the slightest noise makes me *jump* right out of my skin’, we speak of a breakthrough, or hitting a wall or ceiling. (Turn the spiral image to match the analogies.) A number of related iconic concepts are discussed later.

**Nexialist1 derivations:** The nexial spiral-cone in figure 24 is turned upside-down, compared to that of figures 20, 22a and 22b. In conventional terms, this, too, is an inversion of the geometrical projection of ‘twisting’ or ‘spinning-up’.

Such inversion is found, in particular, in linguistic meanings associated with historical periods that are wide apart, or considered different eras (eg from archaic times to antiquity, the gender of ‘wisdom’ changed – see <Extract F13\ San Jiao & inversion>). An etymologic dictionary can show this: if one tracks all the developments of a particular root from Indo-European, at some stage, the positive or negative value (or male-female) is inverted, bringing a new set of meanings. The nexial inversion gives rise to various ideas, such as ‘rise and fall’, ‘dexter and sinister’ characters, (drawn from archaic texts – see <PPT5 Nexial-topologic imaging\ slides 8 & 9) and derives into dyads (see slides 3 & 4) such as ‘rise-and-rise again’, strong and Great, human and ‘Fully Human’ (or ‘Real Human’ in Chinese culture), Earth and Heaven, high mountain and highest mountain (or ‘most high’, in the Bible). In <Appendix A\ Table 9: Nexial-topologic vocabulary>, I have gathered a sampling of quotations, mostly from archaic texts, and a few others, in which key words can be interpreted by using nexial-topologic properties such as those described here. The meaning of such texts is often considered

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1 ‘Nexialist’ designates conventionalised interpretations of ‘nexial’ changes of shape or activation.
'obscure’ and subject to many biased interpretations. Nexial-topology gives them a clear and definite meaning, although it is not realistic or naturalistic, nor related to geometric measured precision.

The words ‘sinister’ and ‘dexter’ may be considered derived from the geometry. The shift or inversion in figure 23 can be seen as a change of direction of the spinning. Ignoring the vertical axis (up/down) leads to the nexialist distinction of Left-Right (in 3D, ‘going left’ is different from ‘going right’). One scientific topographic term for this is ‘chirality’ (the inversion of the twisting produces still images that do not coincide). This is differentiating the shift into 2 directions, and laying them out sequentially (‘going’) or spatially (chiral images). The result is a model that can evaluate differently the 2 directions (eg right as better than left – see <Extract F10\ Left-Right>). This produces many different derived models (eg direction of folding in proteins, and the ‘right hand of god’ – see <F10>). Some of the most common related iconic images are imaged in <PPT5\ slides 8 & 9>. In the chronic syndrome studied experimentally, there was chirality of pain: it appeared left or right (this phenomenon is known among physiotherapists) correlated with a degree of activation or stage of vertical projection (I have not read or heard of such observation).

**Order 3: Topography: integrative completion**

The generic directional parameter (vertical axis) produces a topographic image of this nexial-topologic order 2: The interpretations of both flows of figure 14, as a one-directional line, only works if the plane is considered limited, finite – that is, if it looks like a flat square. If one wants to take into account the bi-directional flows then, automatically, this plane has to be seen as expanding, and the square is not quite flat. Taking this to its conclusion means that the square spreads over the surface of a sphere, since the original ‘spreading’ was bent (figure 12), until it closes in on itself, thus completing the sphere (figure 25). (The sphere, of course is an idealisation – see figure 30 and 31 below.) This ‘completion’ occurs in an integration ‘event’ when the spreading flows meet, and the original vertical axis of deployment is ‘restored’. The completed sphere is the source of a number of models derived from spherical geometry. Some of them are discussed below.
The problem of One and 1

There are two conventionalised interpretations of the completion.

- In the human domain, the sphere can be viewed as the ‘One’, a name given to non-contained and non-dual global cohesion of the world (including oneself). The name ‘One’ is not quite adequate, but it is the positive label that seems to most easily come to mind to say ‘not-separated’ into many things or aspects, ‘undivided’, or ‘undifferentiated’. This is also a human state (non-deployed), in which there is a sense of ‘unbounded’ freedom, ease (‘effortlessness’), including physical (see <EEs> in Appendix E), no particular pain (or pleasure) or ‘need’, no ‘oriented activity’ (targeted ‘want’). It occurs spontaneously, or happens as a result of stringent practice, can appear triggered by body, mind, or circumstances. The experience does not last: the experiential literature confirms that it seems to last on average six or eight weeks before a more normal state returns (I could find no formal study of this delay). It would be an ideal state if it were not so unstable (this, however, is known in spiritual circles: the ‘EE’ has to be stabilised by repeating it). There are, of course, other interpretations of ‘The One’, but none relevant to modelling: they are either anthropomorphic or physicalised.

- In science (specialised papers in physics), ‘one’ is the numerical value ‘1’. In relativity equations it leads to a ‘badly behaved’ solution that has to be eliminated, or to representations of the world that ‘do not make sense’, and are ‘counter-intuitive’ to the ‘self-evidence’ of the philosopher of science (see ‘the Below’, further down).
Topographic reversal: bubble-skin containment, ‘bubble-world making’

After the ‘completion’ in figure 25, the process restarts again. The square (at the top in figure 25) that spreads, and unfolds, reaches completion by creating a finished boundary (the spherical surface). The spreading then resumes, restarting a second process of spreading, but this time, of enfoldment, from another square that has an inverted bending (bottom left of figure 26).

![Diagram showing topographic reversal]

Figure 26: ‘Tearing the fabric’ and ‘bubble-skin’ making

The best example of this undoldment-competion-enfoldment is the development of our models of ‘the earth’. The first square (unfolding) looks like the archaic model of ‘The Earth’, with includes a 2D space (of 4 diRections) and circular time (green square). The ‘completed sphere’ looks like our modern geographical ‘planet earth’ (completed 3D sphere), which is defined as a surface for the purpose of calculating coordinates. (Think also of the spherical models of the cosmos in antiquity). The second square (enfolding) looks the same as the shape of the ‘4D curved spacetime’ (mauve square, and figure 28 below) of modern physicists, a 3D space that is a flat square, with a perpendicular line, direction or ‘arrow of time’ (geometric ‘normal’). In sequence, these 3 frameworks of ‘the earth’ are governed respectively by flat, spherical, and hyperbolic geometries. These 3 ‘possible geometries of the universe’ (<PPT3 Geometry of perspective\ slide 6>) appear like a development of dimensions (2D, 3D, 4D), yet, they are equivalent for nexial-topology. The old framework of ‘the Earth’ develops the outside surface, and the modern framework
redevelops, the inside surface of a spherical ‘skin’ (a word found in some ancient texts). The two frameworks are the outside and the inside of a single spherical 2-sided bubble-skin. The second, enfolding, is ‘turned outside-in’ with respect to the first unfolding one, in the same way as this first unfolding surface is ‘turned inside-out’ compared to the undeployed image (figure 31 below). This unfoldment-enfoldment is what I call ‘bubble-world making’ because the bubble-skin contains an ‘inside’ surface. This process creates containment. The stages are presented in sequence here, but in some contexts, they are simultaneous. Either way, they are symmetric: one does not occur without the other, if the situation is taken globally.

I understand this ‘turn outside-in’ of the second square as geometrically like (a likeness of) a 360° turn that does not result in no-folding, because the surface is not just flipped over, it is shifted from the top to the bottom of the spherical surface. It is flipped over, and flipped over again. In the literature, this ‘turn outside-in’ is understood as a ‘reversal’.

I could not find a satisfactory computer-generated animation for this ‘bubble-world making’. Those I found are very complex deformations in succession that look nothing like the simple way I ‘see’ it. One animation (<Bubble up-down>, <PPT5\ slide 16>), based on ‘statistics of shape’, can represent half the process (part of ‘turn inside-out’, then part of ‘turn outside-in’). (See also <PPT4 Einstein\ slide 5).

This bubble-making, surface hole (‘return’ in figure26) and ‘turn outside-in’, constitutes the limit of nexial-topology, the limit it cannot ‘pass’ (break or make). It is the end of its relevance and of its capacity for description. It can model no further than order 3 and the other images I use are only different geometric projections (see <PPT5\ slide 2> for examples of such ‘projections’). The animated imaging only describes the approach of boundary, or formation of topologic surfaces. Once reached, analytical topology, topography, nexialism, and other conventionalised analytical means such as linguistics and mathematics, take over. This limit corresponds, in figure 30 below, to the green dotted lines reaching back down to form the shape of a drop of water (or an idealised sphere in the present explanation) – a critical point. Nexial topology could not deal with a virulent disease,
a volcanic eruption, a life-threatening defect, colonisation, etc., but I find it far more
effective in understanding *most* situations of daily life, and the syndrome of instability, than
any framework I have reviewed and tried.

**Inversion – reversal – return**

In terms of modelling, this stage (order 3) corresponds to the step in which a theorist or
philosopher thinks, “Too many models, the understanding is completely opposite to the
original meaning (‘oneness’), we are getting caught up,” An integrative model – a ‘onescape’
– must be created to ‘restore’ the ‘lost’ meaning, subtle enough to account for contemporary
complexities. The new model ‘inverts back’ the H-meaning, to ‘reverse’ (retrace) the Sc-
effects, and allow to Sc-H-‘return’ to what was not fragmented This translates into
philosophically driven experiential practices based on a paradigmatic integration via the new
world model. Sc-Reversal and Sc-H-return are cognate, and with the H-inversion mentioned
for figure 24, each in different conventionalised terms. In the arcane technical knowledges of
core culture (eg alchemy), it is a ‘return to Below’. The world model is a logical abstraction,
rooted in *patterns* of geometry. It is therefore derived topographically rather than
topologically. The result is that, despite great care to ‘go back to origin’ (which is a ‘trace’),
it is *only approximately equivalent* to what was being represented (non-fragmentation). From
a topologic viewpoint, its re-integrative role makes it, create a ‘bubble-world’, a *new*
containment, as in figure 26. Something important is lost in approximating, which
conventionalised representations cannot model (even measured topology): non-
fragmentation and non-containment (neither parts nor ‘whole’). I have found this confusing
difficulty expressed in both the Bible (Old Testament) and Chinese texts which both use the
term ‘return’, as well as medieval and modern literature. Paradoxically, this is how some
great ‘new advances in understanding’ have been made, soon corroborated by proofs of
existence in our realities (eg particles of physics, DNA, the self), and new real things
(inventions). H-Inversion, Sc-reversal and Sac-H-return are conventionalised forms of what I
call (not respectively, and in various conditions) ‘turn around’, ‘turn inside-out’, ‘turn
upside-down’.
**Onescapes, wholes, and systems (worlds, selves, bodies… ‘things’)***

One form of the sphere (spherical geometry) is an integrative ‘onescape’ model (a ‘-scape’ projected as a flat representation), usually involving an origin and an end that can be made to coincide to represent ‘One’ (eg ‘the alpha and the omega’). It takes into account both outside and inside spherical surfaces of figure 26, but only topographically, as separate spheres (eg objective ‘without’ and subjective ‘within’ in the New Paradigm, or H-‘depth’ an Sc-heights [eg skill or power], and in medicine: the mind inside the physical body-machine/temple [both sensory-derived and at the core of the ‘external world’]). Usually, in the human domain this is envisioned iconically as a geometric sphere with an outside-surface (FlatLand of normality), and an ‘inside’ (volume) that is full or empty (valued in spiritual circles, devalued for dominant normality). Such onescapes can be very confusing if they are used to describe the non-deployed state that feels like ‘One’, which is usually the case. A ‘one’ or ‘whole’ is a *self*-contained entity [circularity in definition], far from a sense of no-containment and no-constraint. The difference is similar to that between a surface-sphere (1 or 2 sides) and a mathematical ‘ball’ that has no surface-sphere edge at all. Because of this, such onescapes are not equivalent to the state of no-deployment (inadequately named ‘One’).

Instead, they describe critical phenomena (in 2 orders if there are 2 separate sphere-surfaces), which go through a ‘zero-point’. Topologically they describe ‘surface phenomena’ rather than no-surface. Onescape models are inclusive, perspectivally self-consistent (symmetry and circularity), and considered ‘complete’\(^2\) (in H-terms), but technically, they are ‘approximate’ (in Sc-terms). They are only a half-story (of double-surface, of high and low criticality).

Onescapes have a clear tendency to anthropomorphism, to what I call ‘physikemorphism’,\(^3\) and to be self-fulfilling prophesies (new property of self-organisation). Much of their scientific and human inquiry aims to demonstrate the necessity or inevitability of the

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\(^2\) They represent adequately ‘Human’ exPERIence (this script is explained in *<Ancient perspectivalism>*), but not all that our living can be.
properties we ascribe to ‘Nature’, physical and human. I came to understand this self-
fulfilling and critical nature of onescape models by observing the effects of the last two years
of writing in detailed words and of the related necessity to seek the graphic vocabulary of
archaic and core cultures related to onesapes and their derivations. This led to my
developing\(^4\) more advanced symptoms of three physical diseases\(^5\) now diagnosable.

*Further derivations and perspectives:* In frameworks further derived, the full or empty
geometric sphere of the onescape may be drawn as 2 spheres (in alchemy – see <PPT5\>
slide 11\(\geq\)), or half-spheres (alchemical crucible: container and lid). The numbers 0 (for
‘empty’) and \(\infty\) (for ‘full’) are often used to represent the ‘integrated one’ or ‘un-bounded’
(reversed boundary), and words such as symmetry (for non-dual), harmony (for non-polar),
and even (for no L-R- twist), or completion, perfection, and ‘advanced’. As collective
paradigms, they prescribe practices that can be beneficial in human terms and yet, result into
the Sc-technical disaster of instability and ‘bad behaviour’.

It is these numbered or named frameworks that produce the abstractions of the 2 parameters
– N2d-duality and N3p-polarity – that are fundamental for the perspectives and generic for
topology (separate and describing critical surface phenomena). They produce the simplest
but most generalised perspectives: M2 models of duality (eg creation-destruction, female-

dale, which denote the vertical axis as a *single direction*: ‘up’ evolution, ‘down’ source,
origin to end, below to above, female as \(\preccurlyeq\) male); M3 models of modal polarity (eg structure-
function-operation in the Sc-domain, subject-relation-connection in the H-domain, L-
Human/M-Nature/R-Life in daily life and medicine – see <Many perspectives\> Models ‘by
the Number’\(\rangle\)). They produce the topographic mapping ‘of everything’, ‘of all ways’ (see
<Ancient perspectivalism\>), or ‘of all perspectives’ that left unexplored areas in my
research. These are (N2d-, N3p-) or M6 ‘world-models’ (like my perspectival maps: see

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\(^3\) Physikemorphism is attributing ‘physical’ form, ‘spatialising’, localising in physical space,
one degree remote from a ‘physicalist’ attitude.

\(^4\) Not willingly: it is a ‘badly behaved 1’ side-effect.

\(^5\) Chronic Pulmonary Obstruction Disease, Fibrocystic Disease (breast), Spondylosis (spinal
growths); others are not yet diagnosable, plus ‘WasteLand’ aspects (see <Conclusions\>).
Further derivations transform them into ‘stories’, as Sc-cosmologies and H-cosmogonies, eschatologies, and views involving a catastrophic doomsday (often characterised as dark, black or red) or a chaotic emergence (yellow, gold, silver, or white: light or energy).

- The onescape model type seems to also be the basis for notions of ‘system’, which appear only in ‘advanced’ frameworks, although they are then ‘fed down’, taught to learners as obvious and ‘basic’ truths about ‘wholes’. The multiplication of real ‘systems’ and systemic true explanations is related to repeated re-deployments (see section on this, below), which ‘return’ only to the FlatLand of habit, in which systems, objects and subjects, become the norm. Physical ‘bodies’, anthropomorphic ‘selves’, concrete ‘worlds’ such as the physical planet-home of humans or a ‘private world’ home, and the integrated ‘body-mind’, are ‘systems’, which is a fancy name for complex ‘things’ and ‘bodies’. They are ‘bubble-worlds’, large or small. A linguistic problem with them is that a ‘many’ is required to add everything up into a ‘whole’ in words or experience, and vice versa to multiply a 1 into many in numbers or explanation. Hence an ‘undifferentiated’ cannot be called a ‘whole’, a ‘system’, and the label ‘One’ produces unnecessary confusion. This multiplication of worlds (and perceived systems) results in all the spaces in which we are ‘encultured’, such as cities, walled buildings, bordered countries, fenced fields, private room, etc., and into the objects of civilised living, such as the physical object-‘human body’, which is ‘skin-encapsulated’ (Watts, undated). Its only ‘immunity’ operates as an extrinsic ‘immune system’ of ‘self-defence’, resulting in intrinsic ‘immune’ auto-destruction and wasting away to one degree or another. It seems to me that our mechanisms for representing ‘the world out there’ or ‘the self in here’ play tricks on us, but also have dire actual consequences. Many of our models, including closed and open systems, are an expression of ‘bubble-world making’ (and ‘tearing the fabric’, as we see next). Yet, this is what we teach our young children (eg object-body, subject-self, and defence against ‘colds’). Is it any wonder we ‘wear and tear’ physically from birth?
**Breaking-making boundary: topologic ‘tearing the fabric’**

The ‘turning outside-in’ in figure 26 is a singularity. The conical development from the ‘passing’ in figure 25 is contained in the sphere, but that sphere only has one surface-side. There is not really (except in the imperfect picture) an ‘inside’ to ‘contain’. Looking at the more complete imaging of figure 26 (looking from both the inside and the outside), this singularity, or turn outside-in, breaks the boundary (in a nexial process) to restart a new boundary (topographic inside) to create a double-surface skin, a bubble-world. In fact, it makes and breaks ‘boundary’ (according to 2 different parameters): it makes a hole, and so ‘tears’ the 2-sided surface or bubble-skin. With this imaging, the singularity no longer appears contained. In figure 25, the hole appears to not be a tearing only from the viewpoint of either one of the outside or inside. It seems to be a coming back together, a return, a mending of fragmentation, or correction (both ‘return’ and ‘correction’ are found in the biblical Old Testament) or an opening, an expansion.

A common image for this hole in physics is the wormhole. A prehistoric image would be puncturing a hole in a 2-sided material object that has a flat thickness, or (with some distortion) the tubular entrance of a cave – an image also common in arcane knowledges (eg a bottleneck). Topographic images of cylindrical tube or tunnel, rod, staff, pole, or line, are limited derivations. My observation is that any perspective (modern theoretical, experiential, and practical) that is a further deployment beyond order 3 is longer topologic (although they may use the mathematical geoMetry developed for Sc-topology), but topographic (or ↔ ‘nexialist’). The notion of ‘critical boundary’ can be expressed (among other ways) as ‘crossing’ or ‘passing’ a boundary, ‘reaching’ boundary-surface (rather than ‘approaching’), making a ‘hole’ that is also making a ‘whole’, breaking-and-making boundary or a bubble-skin, ‘bubble-world making’ (and destroying), and ‘tearing the fabric’ of a topologic surface. Judging from the literature concerning the difficulties experienced with models of spatial reality created with modern mathematical topology, it seems that the tearing is a point of contention among mathematicians and theoretical physicists, as the following statement shows.
'At present [1933] it appears that two other very general mathematical disciplines will be used increasingly in the future. One of them is the *theory of groups*; the other is *analysis situs*. In the latter we study only these characteristics of figures that are unaffected (invariant) by continuous deformation produced without tearing. Two structural points are relevant for us in this connection: namely that the analysis situs is fundamentally a *differential* and also an *ordinal* discipline, based on asymmetrical relations. In the next chapter, as an illustration of the actional, behaviouristic, functional operational, differential, contact method a short account will be given of the way Einstein structurally treated “simultaneity”.' (Korzybski 1933 p.658)

**Shaping, not shapes: ‘geometria situs’, not ‘analysis situs’**

There is a major difference between nexial-topology and complex modelling. Complex models use analytical mathematics, and represent reality as topographic ‘shapes’ that “transForm” according to dual and polar, or statistical and probabilistic principles. Nexial-topology shows a ‘likeness’ to the ‘shaping situation’ as it ‘presents’, and is purely an animated imaging (no measured size or number of named shapes or of their motions). As such it fits better the oldest name from which topology derived, ‘geometria situs’, than the later name ‘analysis situs’. Nexial-topology is a global ‘situation modelling’ that does not differentiate analytical parts or *genera*. It just ‘images’, ‘shows’ the situation ‘as it presents’, rather than ‘rePresent’ it. The problem of our deployed, measured and named perspectival deployments is that the shapes they show are those of our own sensory modelling rather than the ‘shaping’ of the situation:

'The ruler is the bowl; when the bowl is round, the water is round. The ruler is the basin; when the basin is square, the water is square (12 Jun Dao p.162).’ (Allan 1997 p.49)

This ‘shapes’ both the physical and anthropomorphic realities we perceive – and which become our ‘home’ and imprisonment, including the very real unstable ‘health’ of ‘wear and tear. This has a number of implications. In <PPT1 Body>, I gathered intuitively (before I wrote the complicated explanation in this chapter) some pictures to represent the various notions that the medicines have of ‘fluids’ in the body, and of the role of water. The simplest, and most obvious to me, simply is not there at all. The following sections will
justify my empirical observation of the fundamental implication of water with respect to our notions of gravity (in daily life, it is what we feel when not in ‘ease’).

**Global covariance versus N2d- ⊫ N3p- compensation**

In perspectival analysis and geometric mapping (fixed images), generic or H-global parameters are discerned separately. In contrast, to see in this a ‘situation in shaping’, one must remain aware that, not generically separate, the Se-non-local properties necessarily vary in the same way and so cannot compensate for each other. Yet, in conventional views, this is the dominant strategy used in many spheres of human existence. Direction is often used to compensate for extremes of activation (eg ‘sublimation’), and activation (eg hormones) is used against lack of brain directive orders to the body (eg to trigger breathing). I represent such compensation as $N2d- \leftrightarrow N3p-$ and $N2d- \Rightarrow N3p-$ (depending on how it is applied). This is the source of many cycles deemed vicious or virtuous, including addiction and habit. This is not valid in nexial-topology, because it assumes that N2d- and N3p- can be separated and used as counter-variants. They can, in conventional terms, in bubble-worlds, but in nexial-topology, this creates the bubble-worlds. Varying and deploying the same way is the general (a)symmetry of both that is modelled as Korzybski’s ‘asymmetrical relations’, using topology. The global properties are not separable but ‘covariant’, just as the explanations of animation <1 Trefoil> do not split the animation itself. Separating the parameters is the ‘beginning’ of the mechanism of ‘deployment’ (‘stirring’ in archaic terminology). I use the 2 generic parameters merely to provide different ways of looking at the same situation, not to reduce it to parts and systems, and justify the compensations that give rise to the syndromes of instability.

The covariant N2d-direction/N3p-spining-up is an imaging of orienting-at-boundary (‘swelling’ and ‘spreading’). A graphic interpretation (figure 27) of this covariance would represent it as the ‘integration of the 2’ general parameters into the idea of an oriented-at-boundary (a compaction, limitation, or reduction of ‘swelling’ to ‘spreading’).
A number of dyads of general notions are deployed in covariance: unfoldment-enfoldment, N2d-synMetrics and N3p-harMonics, differentiation-integration, degeneration-generation, time-space, exPlanation-exPERIence, left-right, up-down, brain-mind, intellect-psychic, visual-auditory sensory perception. The meanings do not necessarily correspond from dyad to dyad, because they belong to different frameworks, different conventions of framing and represent different contexts. The ‘spreading’ at the top of the image on the right, can be limited further, and ruled by Flat symmetry and circularity.

**Deploying again & again: derivation of infinite variations**

The deployment can be summarised into a scheme of appearance of perspectives and complex models, by both unfoldment and enfoldment involving quantic jumps in various ways. Further derivation occurs by re-deployment. The latter may be construed as repetition of deployment, or as reversing deployment. Either way, the resulting models are not equivalent to non-deployment or to undifferentiated deployment of the 2 generic properties.

The word ‘quantisation’, used by Saunders (1991), seems adequate, geometrically, to cover nexial ‘jump’ (boundary breaking) and topographic boundary making (or normalisation, establishment, stabilisation), and their repetitions, because ‘quantum’ can be interpreted as a N3p-process (eg electrons jumping orbits in the atom) or a N2d-system (eg a ‘quantum’ of light that is ‘a photon’), and as a N2d-singularity or N3p-discontinuity. The resulting models are governed by flat, spherical, and hyperbolic geometries. All three ways are sources for the basic icons of culture (three different domains of culture).

**Repeated quantic jumps: ‘thick’ landscapes**

The ‘quantic jump’ effect (nexial: figure 24 or topographic: figure 25) seems to be automatically produced by combinations or permutations of previously derived perspectives.
It is intrinsic, built-in. For example, strategies of stabilising and establishment, are only effective ‘for a time’, and have to be repeated, and eventually the system ‘reset’ (eg thyroid control of body temperature). The complex models, here, describe bound, constrained, entangled systems, with boundary phenomena as a recurrence rather than occurrence. This is the basis of many modern views, and is fast becoming the standard of enculturation in thought and experience, including physical ‘health’. In the chronic syndromes, repeated quantic jumps are far from feeling like a positive emergence. Recurring acute crises and events of metabolic shut-down that force sleep, sometimes almost instantly (one of my correspondents called this ‘pay back’, after activity she found exhausting), are a plague of instability, and make it impossible to predict one’s own behaviour or mood next week or next year (a problem for appointments).

One positive term used by theorists for this is ‘punctuated equilibrium’. This is represented with the image of a ‘landscape’ with a ‘mountain’ (eg epigenetic landscape; Waddington 1975 – see <PPT2\sl line 13> and examples in <Extract F7\landscape vocabulary>). I call such models ‘thick landscapes’ to discern them from the FlatLand landscapes of order 2, which describe a baseline (a basis with nothing ‘below’, like a limit-ceiling in coming down). Such deployments describe statistical but approximate normality and probabilist chance or risk (of disease, for example), which require periodical ‘resetting’. The stability is ‘punctuated’, rather than permanent (eg alternative or alternation, oscillation). A mathematical form comes as ‘best fit’ models. A human form of this exists in the complex dreamscapes of the mind or ‘inner eye’ (see <F20\published EEs>). Thick landscapes are double-sided, have an ‘oriented’ surface (two sides: top & bottom of mountain). Thus, they have a vertical dimension, but it is a one-sided diRection, which manifests as a preference for H-‘up’ or Sc-‘ground’.

The most obvious such ‘thick landscape’ is the quadratic representation of the modern space-time (figure 28). The ‘arrow of time’ is equivalent to the direction bottom-to-top for the mountain, and corresponds to the ‘orienting’ of the ‘bubble-world making’ in figure 26, from ‘outside’
to ‘inside’. For nexial-topology, this bent ‘space-time’ and the other ‘thick’ landscapes models, are a reformulation of the basic space-and-circular time of ‘The Earth’, but with a crucial difference: the containment, and the critical jumps. This is more complex, but more limited. In figure 26, it is the bottom square that is contained inside the sphere. One image (<PPT2> slide 11\ folding into critical>) shows the correlation between topologic surfaces and criticality: if they fold to touch (or make a hole), this corresponds to a critical event (a ‘catastrophe’). The models of this stage represent a reality of repeated critical events: patterned stability alternates with nexial instability (in whichever dimensions chosen to formalise). They invert the bending of the surface (refer to the squares in figure 26) rather than unbend it. Figure 29 is an extension of previous figures. Repeating the process (going from outside to inside to outside, etc.) can be interpreted as an endless cycle, an endless path, endless refinement or fine-tuning, or an ‘eternal return’.

**Endless fine-tuning & refinement ad infinitum**

With repetition and redeployments, thick landscapes become derived into models of fine-tuning and a refinement of detail that never ends. This is often useful in understanding highly specific circumstances or to simplify a problem. Sometimes, however, the endless complication is pointless (eg <PPT2> slide 22>) and may even confuse the situation as in this study of daily life health. For example, the workings of immune defence are detailed according to which inflammation-promoting substances and killing cells affect which tissues in which organs. These details are of little use to deal with a condition in which the entire body-system hovers between a pre-inflammatory ‘swollen’ state (congestion) and intermittent localised inflammations (eg boils, or brain infestation), with correlates in the lifeworld (eg all-inclusive urgency). In a textbook, out of 15 pages, of highly detailed
description of the immune system, only one and a half are devoted to inflammation, and the
‘first line of defence’, the non-specific immune response, is awarded twelve lines, less than a
quarter of a page (Baynes & Dominiczak 1999 pp.435-449). Water is not even mentioned
except as an effect of inflammation. Increasingly small types of ‘attacking bugs’ (viruses,
bacteria, mites, parasites, etc., and in the archaic literature: beasts and locusts) are being
found, involving increasingly complicated mechanisms of immune aggressive-defence and
critical containment. Yet, specifically focused treatments based on this tend to have systemic
side effects that produce ageing-like general degeneration related to dehydration. The
systemic damage causes later focusing of other symptoms somewhere else, into worse
diseases. Globally, the refinement of our techniques and drugs is correlated with the
appearance of new ‘big diseases’. Globally, this endless approach only shifts the problem,
even if localised improvements are more obvious. Size reduction and increase – ‘the small’,
‘the large’ – is significant in both the abstract and concrete manifestations of deployment
(this is related to seeing ‘outside’ of bubble as big, ‘inside’ as small). For example: larger
and smaller systems, more inclusive and more abstract models, miniaturisation and
impressive building or machines, small clues and ‘big picture’, smaller ‘causes of disease’
with bigger effects on the body, size of animals and plants after prehistoric domestication
and shifts in human size [Mithen 2003], shrinking size of the urban house block in bigger
cities, shrinking ageing body that also grows fat, etc.). Endless refinement has the down side
of making constant work necessary for fine-tuning, of increasing work and making it
inevitable, for little added benefit in most cases. The models of repeated deployments are
ruled by an analytical geoGraphy of the inevitable necessary that appears well tied
together, a representation of the way ‘everything’ is. The consequence, however, is that such
models tend to justify that their description ‘best fits’ the way ‘everything’ is (Wigner’s
‘uncanny fit’ 1960, see ‘A simpler view’, below), and circularly, that everything is ‘best’ that
way, or even has to be that way. They end up imposed on every ‘body’.
Endless paths, endless cycling

From a geometric viewpoint, endless fine-tuning is an ‘endless path’ (think of the constant small corrections of a plane’s autopilot to stay close to a direction). It never quite reaches the goal, or the target of ‘perfect’, ‘finished’, ‘complete’; it is only ever ‘advancing towards’ them. It is an asymptotic direction rather than a topologic ‘orienting’, and this is very different from ‘not reaching boundary’). Many human philosophies involve endless paths (eg Romanes 1888, line-ladder of evolution, ‘the important is the journey’ of the ‘spiritual path’, endless series of ‘mountains to climb’, endless ‘stream of thought’ in consciousness). Many technical and practical models involve endless expansion or growth (eg economic growth, expansion of the universe, increase of physical, mental, social, or machine power). This is the basis for the ‘expansionisms’ of our world (eg sprawling cities, swelling wealth and power, overpopulation, expanding empires, globalisation, cultural colonisation…). It also manifests in reality in our endless population growth. This causes problems with infinites: ‘where does the expansion stop?’, ‘how much growth is ‘good’?’; ‘where is the final end?’ and ‘where/when/how did ‘it all’ begin’? In physical health, infinite growth is not necessarily good (cancer). The problem of diversity is replaced by that of having no grounding in reasonable limits, no clear idea of what ‘enough’ looks like, and no means of stopping ‘the race’: ‘increased productivity… knows no limits [and leads] to the degradation of person and planet’ (Hill 1985). Notions of infinite, absolute, ultimate etc, are derived from the iconic H-image of an endless path – that is, of a Sc-approximation, the asymptotic approach, but the full image (a H-‘big picture’) of approximation-probability given by the Sc-models is a cup or bell, mountain, valley or cone with two asymptotes (see <PPT2\ slides 8, 10, & 13>). In other words, repeated deployments are ruled by a hyperbolic geoMetry of expansion ↔ shrinking, or of ‘the large’ ↔ ‘the small’, whether this is an alternation, oscillation, or concurrent aspects. An endless path can be an overwhelming practical impression: progression from unease to stress and degeneration, illness and disease is such a path. The increase in global struggle and necessity of effort with age is another. Endless cycling, the polar version of the dualist path, is addressed later in the section on ‘The Below’).
Combining the ideas of endless path and cycles produces knots related to the M6 models (eg the Tibetan *shirivasta* ‘endless knot’ – <PPT2\ slide 5>).

**ReFormulated perspectives**

A major consequence of the endless cycling is that we keep deploying and redeploying our explanations and forms of experience, into endless paths, cycling, and perspectively biased bubble-worlds. When these run their course, we start the whole thing all over again, without ever coming any closer to resolving the most basic of our difficulties or even just doing something about it. (See ‘eternal return’ in section ‘Grav-wave’, below).

**Ultimate end of deployment: haze, glue, & endless-scattering-wasting**

The ultimate end of this deployment of models and perspectives into the oversimplified complications of too many limited perspectives, seems to always be some kind of amorphous or ‘discontinuous continuum’ (imagine many droplets). It comes under various guises, which all have in common that there is no longer any clear shape (eg chaos is ‘formless’): there is scattering. In explanation and experience, it is a haze, mist, cloud (in archaic literature), or vapour (in Chinese inner alchemy: the spirit-body). These remind me of the cognitive dysfunction event, common in CFIDS, that is often called ‘brain fog’ or ‘cotton in the head’, in which one can no longer remember names, find words to speak, make a decision, or think effectively, and feels disoriented. The complex details of human and scientific realities come to look like an impenetrable and unmanageable bag of knots. This can also be a jumble, tangle, or foam of rings, that no longer has any physical reality (see <PPT2\ slide 23>). These can be very concrete experiences: ‘being in a tangle’, a ‘jumble of problems’, a body full of ‘trigger points’ that are ‘knotted’ muscles. In modern terminology is a soup (eg quantum soup, the water soup of the origin of life), or simply a mess. Haze, considered ‘formless’ but material also takes the name of amorphous glue (eg glue of the universe). It is significant that ‘amorphous glue’ (or jelly) is the quality attributed to the most basic, and all pervasive, connective tissue in the body, the ‘ground substance’ (see <PPT1\ slides 27 & 28). It has become non-existent to the ‘physical’ science of medicine to such an extent that it does
not enter into accounts of health at all. It seems to be considered mostly irrelevant, as is water (only an ‘inert carrier’). It is little studied, except in jellyfish, too far from the status of ‘Human’ to be considered. Another form of this stage of scattering is ‘wasting’, which is discussed in <Conclusions>. In health, it manifests in the ‘wasting away’ of the body in a chronic syndrome (most visible in the face), its falling apart after menopause, its ‘melting away’ in profuse sweating. The endless-scattering-wasting is a non-local property, and so its ‘manifestations’ are global, any-‘where’ or ‘when’, not just in the body or any other kind of place. From the local-viewpoint of a person, the ‘wasting’ affects all aspects of the personal ‘lifeworld’, from bodily health to material living conditions (eg what happens next door, wasted money), to human events and behaviour (eg wasting food, wasting time, wasted potential, a wasted life), etc. Even what is ‘seen locally’ of ‘the world’ in general takes on this property: consumerist waste, human lives wasted throughout history in slavery, disease, war, work drudgery, or marginalisation), wasting planetary resources, wilderness wasting away now again as it did ten thousand years ago (Mithen 2003). This is the situation in which we say, “It is all falling apart”. One can no longer manage the scattered waste, and cope with the complications of life, whether physical (health) or material-human, and it becomes impossible, practically, to ‘keep it all together’.

Other problems and implications of deployment

The problem of periodic instability

The concern with establishment and stability (<Extract F8>) mentioned earlier demonstrates a widely spread need to counter instability in many spheres of culture and civilisation, including theoretical modelling and health (see <Extract F4\ Syndromes of instability>, which addresses various related issues). The simplest image to demonstrate this is figure 24, in which there are 2 critical ends to the spiral. This can be experienced as alternation between limits, oscillation between extremes, endless cycles, functional constraints, edges of containment, etc… or endless deployment and redeployment. It ‘looks like’ an orb of universal bouncing chaos. In many
cases, such instability is considered a ‘mystery’ whose origin is unclear, or even ‘The’ origin of all things. This is the case in some cosmologies, and for the ‘illness’ syndromes that have a characteristic of instability. It takes forms that can be classified. For example, according to the scheme used here, as ‘low-grade’ (eg allergy), ‘normal’ (eg invisible ageing), and ‘high-grade’ (eg cancer). In other words, the ‘shaping-up’ of instability can be imaged, as a deployment, although the particular spatio-temporal form it takes cannot be predicted. These 3 orders are related to the ‘stages’ defined by various authors (in <Health and Illness>). They can also be interpreted as 3 orders of ‘gravity’ (see ‘Grav-Wave’ below). The Sc-‘solution 1’ is one of its forms. Nexial resonance, chirality, the ‘Below’ (addressed next) are some of its less known forms. Deployment makes instability a self-fulfilling prophecy, in whichever order it is pushed to. It shows it as built-in the techniques of conventionalisation, and an automatic consequence of the practices regarding the conventionalised body in certain circumstances (eg triggering birth, stimulating food given habitually to children).

The ‘hidden’ – invisible – lost, ‘The Below’, and the sub-‘Human’

The ‘inside’ of the bubble-skin in figure 26 is the object of a large variety of names, in the iconic culture, invented by the many makers of onescape models. They are, however of a few basic types. This ‘inside’ is the ‘source’ of phenomena ‘not well understood’, unclear, ‘mysterious’, or the ‘origin’, ‘lost’ or ‘forgotten’, of global phenomena such as writing, drawing, geometry, language, the contentious localised origin of humans). It is ‘hidden’ or ‘invisible’ to physical and human realities such as the cosmic universe and humans themselves. Physics has its ‘hidden variables’, humanities their arcane ‘forgotten knowledge’ and the elusive universal ‘Mother tongue’, and medicine its invisible ‘unfounded’ illnesses ‘without physical cause’. Physics also has a whole range of names directly related to those found in archaic texts (dark or red, colours, etc. – some shown in the slides.) Physics, archaeology, anthropological studies of the history of religion and spiritual practices, and medicine, are royal routes to understanding such notions. ‘Advancing’ by breaking-making the bubble-world ‘unveils’ all these ‘hidden’ aspects. Related terms are ‘covered’ and
‘uncovered’ (in the OT Bible) [apparently removed ‘cover’ of FlatLand: order 1 deployment is a ‘covering’ surface].

‘The Below’: The form the most relevant here, because it is expressed in image as often as word, is ‘The Below’. In Chinese inner alchemy, there are practices to ‘return’ to ‘Below’ (or a ‘valley’), a process in which men seek in their mind to restore ‘The Female’ in themselves, to undo duality, or turn back time. In myths, the ‘Below’ can be a ‘Beyond’, or a ‘behind’. In the core of spiritual traditions, its characteristic of endless cycling makes it a hell of endless suffering (eg in the cycles of reincarnation that are an imprisonment keeping us from peace, happiness, freedom from suffering). The ‘Below’ is also a reformulation of an archaic notion of the dreaded ‘The Pit’ (both Old Testament and Chinese), or ‘bottomless pit’ (represented as a cone – see <PPT2 \ slide 10>) related to the fear of ‘getting stuck there’. This is a powerful cultural icon that still belongs in modern vernacular (‘pit of depression’, ‘dark hole’ of pain). Mostly, however, it is not conscious in most of us, and is at work in devaluation based on associating a particular person’s behaviour, physical or mental, or of their lifeworld (that is, conventionalised) with this image instead of understanding the phenomenon of instability without distinguishing and ascribing ‘valuings’. The implications are so generalised that the entire person’s life can be invalidated as belonging to a ‘lower order’, a ‘sub-human’ order. This is the case for some behaviours deemed ‘animalistic’ (eg violent reactions, but also instinctively eating mineral substances needed for nutrition) or ‘weak’ (eg having a little nature’, being ‘too sensitive’). This is at work in the hidden cultural association of ‘The Female’ with the ‘Deep’, the ‘Abyss’, the ‘Dark’, or a status of ‘dangerous nature’. Childhood in general is afflicted with this hidden ‘sub-human’ status until education channels it, the body stabilises when ‘hormones kick in’ (Western culture) or ‘kidneys mature’ (Chinese acupuncture), until puberty normalises its brain-central-control and establishes its self-control (see <Extract F17\ Anatomy notes>). The cultural basis of all systematised medicines, it seems, contains, hidden within its system of standards for normality, this assumption that child physiology and psychology is not quite ‘adult’, an unfinished adult-‘Human’, and sub-‘Human’. Another modern example is the exhaustion of
compensatory sexual drive or of brain function with ageing and dread of these losses. Consequently, the head/sensory defined ‘physical body’ itself is an ‘imperfect vehicle’ and ‘machine’ that requires constant repair. It is only ‘mammal’ or ‘animal’ (rather than ‘human’) – and ‘below’ the head-brain–. It is deemed ‘lower’ on the evolutionary scale of complexity than the human mind. The female body is affected similarly (weakness in the ‘gravid’, pregnant woman, ‘female problems’ of health and mental instability, etc.). These learned attitudes to the body, child, and female (their conventionalised forms), are carried on a daily basis in everyday living. Ultimately, ‘The Below’ is the ‘inside’ of the bubble-skin, and is an order 3 approximate formulation of properties of order 1 deployment. This explains the many names in the literature of all times, the confusion regarding these properties, and the built-in manifestation of such feared and even despised qualities. The main difference between order 1 and order 3 is the introduction of N2d-containment-N3p-constraint, and so of ‘self’-organising instability, uncontrollable completely. These pattern-based (topographic) and activation-based (nexialist) limitations produce, the iconic sets that are deeply ingrained, ‘hidden’ in culture, and which affect profoundly medicine, our definitions of ‘health’, and how the health ecology of low-syndromes is approached (as order 1 ‘low-grade’ and non-local properties, or as order 3 incapacity to ‘complete’ the bubble-skin of ‘defence’ and adaptive compensation). Two of these iconic sets are used openly or not, to deal with low-grade syndromes:

**Primary and secondary:** The ‘inside’ and ‘outside’, variously expressed as dyads such as ‘within’-‘without’, ‘Above’-‘Below’ ‘small’-‘large’, also produce ‘primary’-‘secondary’. They are used in particular in psychology and psycho-somatic medicine to differentiate types of syndromes (see <Extract F4>), but also other fields (see <PPT5\ slide 11> and <Extract F12\ Mysterious Pass or Place\ primary & secondary>).

**Normal, super-normal, sub-normal health:** The 3 orders of deployment can also be expressed as 3 ways of being ‘not diseased’: (a) *Normal or ‘natural health’*, the adapted, compensatory state ruled by brain-central-control, self-control, aggressive-self-defence,
selective sensory perception (head-based), a chronic state of strain-stress, ‘survival’ alert (attention); (b) Super-health (or super-body: Murphy 1992), highly brain-mind driven and ‘spirited’ (includes the ‘extremely healthy’ child that only evades bacterial disease); and (c) Sub-health, characterised by instability, criticality, and various grades of dysfunction (eg normal childhood illnesses, ‘female problems’, chronic syndromes). Whichever order of topologic deployment, it is taking us to critical defensive containment, with correlate constraints and limitations. All 3 forms have an assumed ‘natural’ baseline of low-grade criticality, and do not model non-deployment, or non-criticality.

The iconic notions just discussed influence treatment, the ‘illness’ label (both validating and invalidating), and through cultural practices regarding the ‘body’ and ‘person’, participate in the ‘causing’ of syndromes of instability. Yet, these non-local expressions are routinely dismissed in psychology as ‘in your mind’, in medicine as ‘birth weakness’, and almost never addressed in H-research on health and Sc-medical research. They remain a conventionalised puzzle to medical anthropology (eg the meaning of ‘embodiment’ and views of the ‘body’).

‘Not from self’ and ‘non-local’

In the human domain, the boundary is a crucial notion in the definition of the ‘self’. It is just as important in defining the ‘not-from-self’ as a source of what happens ‘to’ the self or ‘within’ the self (eg from environmental influence, to involuntary and induced reactions, ‘acting out’ behaviours, and other phenomena, and many religious experiences, such as ‘activating the Goddess’ [in Despeux & Kohn 2003, hearing a voice, or being ‘taught from inside’]). Other forms are ‘Exceptional Experiences’ of ‘no-self’ and ‘no-world’. They are more difficult to express because they break down boundaries, and no longer discern scientific and human shapes. Some examples drawn from my observations are: ‘spontaneous yoga’ (or rather Dao Yin – see <C8\ Spontaneous yoga>) that serves no improvement purpose, ‘nexial resonance’ (see <Endnote C9\ Nexial resonance>) in which no cause, mental intent or influence, by contact or at a distance, is involved in material effects, the non-deployed state often called ‘One’, and the nexial-topologic ‘native gauging’ as a lived
imaging that involves no ‘system’ of any kind, and apprehends an undifferentiated situation without conventionalisation. In matters of culture, the ‘source’ of some of the icons of culture (eg shamanic, magic, religious symbols and rituals), and of general inventions (eg the wheel, baskets, fabrics, language, certain stone tools of prehistory) does not seem to be localisable and remains a puzzle. Physics also has a problem with experimental non-local effects. All these are not described adequately by words, numbers, or other conventions, and I designate them under the label of the ‘undifferentiated’ (for theory) and non-deployed (for practical experiment). The Greek, pre-Socratic word ‘apeiron’ might have been an attempt at designating it negatively as I do here [a-peiron, without boundary], albeit mostly understood as a chaos (of the ‘Below’) that needs ‘taming’; a derived term in philosophy is ‘indeterminate’ – see section ‘Loss of physical grounding’ below).

**Hidden implications for health ecology and daily living**

**‘Drift’: going ‘off track’**

The end of redeployment ‘path’ can be viewed differently – as a ‘drift’. Showing this requires a different geometric projection than the yellow spiral in figure 29, which does not display appropriately the directional and asymptotic element (endless ‘path’). In figure 31, it corresponds to the axis that goes ‘off-track’ [on the left] (see also <PPT5\ slides 15 & 17). The most common name for this is ‘drift’. Some examples are: the ‘semantic drift’, the cosmic ‘red shift’, the statistically drifting age for the onset age of puberty (currently two years early) and its acute power (often resulting in stunted growth and adults forever looking like youngsters), and very slow or invisible progressive degradations such as degeneration of ageing, the deterioration of the planet and of human sanity and health (eg spreading of auto-immune disease), and the progressive complication and oversimplification of our explanations and experience.

This drift is known specifically, separately, but it is not formally described or mapped as a general phenomenon across fields. It remains unexplained, justified as a ‘remnant’ of some
hidden or mysterious phenomenon, some kind of inevitable ‘end’ for the physical world of humans and its bubble-systems, or simply by notions of chance, or fate:

‘In ancient times the holy sages made the Book of Changes […] By thinking through the order of the outer world to the end, and by exploring the law of their nature to the deepest core, they arrived at an understanding of fate.’ (Wilhelm 1989, I Ching- Shuo Kua p.262)

‘Drift’ is among the most difficult of phenomena to actively ‘counter’ or understand. Yet, if modelled with nexial-topology, it has a clear meaning – of ‘going off-track’. This can be understood without the complexities of all our models and perspectives, and can simply be ‘undone’, by ‘not going’ off on the tangents of deployment.

‘Grav-Wave’: gravity–graveness and ‘stopping’ critical deployment

Who says ‘final end’ says ‘start all over again’: at some point the ‘drift’ exhausts itself and stops, only to restart. This happens over a long-period cycle (a meta-cycle), in which the deployment of geometric icons runs its course. Reaching the endless-scattering-wasting breaks the very ability to deploy and endlessly redeploy into ever larger and smaller bubble-worlds. A pause of non-deployment intervenes, before the whole cycle starts again. This occurs in civilisation/culture (millennia of many human generations), and a ‘restarting’ is characterised by the same underlying iconic shapes but completely new conventions. This could be related to the ancient notion of ‘eternal return’ (refer to the notion of ‘Great-Time’ in Eliade 1954, and spiritual notions of ‘Great Cycle’) and modern ‘zero-point’.

This restarting occurs also for the body/mind/lifeworld. The self-exhausting (re)deployment ‘looks like’ a wave of waves, comprising a number of repetitive activation-projection that reaches its end in scattering-wasting, before restarting again. It is not just ‘instability’, but a compound wave of instability that occurs at long intervals (at key turns of the lifespan). It is expressed in health and body sensations, and concurrently in the events of the lifeworld. It can affect directly ’health’ and sanity, but also the living conditions, the ‘whole world’ as apprehended locally, and even safety. It also appears inevitable (it is built-in). Therefore, being subjected to this gives a sense of despair or ‘graveness’, a strong physical sense of weakness (exhausted ‘bodily reserves’) and heaviness (gravity, difficult to stand). For this
reason, I have dubbed it the ‘grav-wave’. The reader can gain a sense of the properties of such a wave by viewing the animation <9 Grav-Wave>. The animation is drawn from a General Relativity website, in which it is called ‘gravity wave’ and is the only formal model I found. On the other hand, there is a sense that it does not have to be inevitable, because using ‘native gauging’ to ‘stop’ deployment shows a state in which it does not exist.

**The cost of (re)deployments:**

‘Drift’ away from ‘ease’, rather than getting closer

Deployments, redeployments, and reformulations give us control over our ‘health’, behaviour, and degrees of specific freedom. They provide us with high specific-general knowledge, human-mental greatness, and creativity in invention and in dealing with emergencies, but there is a cost: the ‘drift’ effect. Whichever the conventionalised interpretations we use, the ‘advanced’ frameworks Sc-‘reverse’ iconic images, by differentiating the 2 generic parameters and putting them in compensative circularity N2d-  N3p- (interaction, interconnectedness). The H-‘inversion’ of the effects of this chronic compensation create endless paths of ‘completion’ that are asymptotic approximations of the nexial-topologic vertical axis. The lack of ‘gauging’ (that is, observing without discerning the 2 symmetric Sc- and H- domains [Sc↔ H-]) allows constant transfers between them that reinforce each other and do not take into account the ‘drift’ effect. The Sc-result is not reducing instability, but rather ‘turning it out’ into waves and cycles. The H-result is a semantic drift by reification from undifferentiated ‘ease’ of daily living into specifically ‘easy’ tasks, treatments, compensations, and the ‘easy’ general explaining away of instability by devaluation and unknown causes. In such deployments, the nexial-topologic vertical axis of ‘off track’ orienting is ‘completely turned around’ (360°, topologically) into many deployments of the endless asymptote of assumed ‘getting on track’. This ‘oriented’ asymptote denotes boundary conditions that do not stop, but when their grav-wave exhausts itself and reaches its ‘end’, whereas in ‘native gauging’, the approach of boundary-surface is a nexial-topologic ‘orienting’ that intrinsically ‘stops’ the
deployment (refer to the green dotted lines in figures 30 and 31, below). One is auto-
‘pushing’ and increases deployment, the other auto-limiting and stops it. Deployment yields
an ever-increasing requirement for more physical or human work, just to approximately
‘keep on track’ automatically and ‘keep [separate] things together’, just to preserve our
living environment and our bodies so they only ‘survive’. It maintains, sustains, and
recreates constantly the baseline of critical effort, strain, and stress and its correlate
deployments (do we not speak of ‘deploying efforts’?).
In practice, this is taking us away from ease rather than towards it, and although it remains a
potential, it is made a practical impossibility. Instead, it is making certain aspects ‘easier’,
but certain others more difficult, and altogether, daily living becomes complicated and
uneasy. It took me about 40 years of hard learning and much bodily hidden damage to
understand, in far too much detail, what my down-to-earth mother used to say: ‘Tu te
compliques bien la vie!’ (You so complicate your life!).

**Loss of physical grounding and the critical baseline of ‘health’**
The ‘grav-wave’, ‘drift’, and ‘endless-scattering-wasting’ are different ways of expressing
‘going off track’, which also means ‘loosing ground’. I will illustrate this loss through
modern science. The two images in <PPT2\slide 23> are models of ‘space’ created by
theoretical physicists. They are self-consistent and mathematically valid, but what they
predict cannot seem to be found in physical nature.

‘We do not know whether this theory is physically correct or not. Direct or indirect
experimental corroboration of the theory is lacking. This is the case, unfortunately, for all
present approaches to quantum gravity. The other large research program for a quantum
type of gravity, besides loop quantum gravity, is string theory, which is a tentative
type as well. […] Nature does not always share our aesthetic judgments, and the history
of theoretical physics is full of enthusiasm for strange theories turned into
disappointment. The arbiters in science are experiments, and not a single experimental
result supports, not even very indirectly, any of the current theories that go beyond the
Standard Model and general relativity. To the contrary, all the predictions made so far by
theories that go beyond the Standard Model and general relativity (proton decay,
supersymmetric particles, exotic particles, solar system dynamics) have for the moment
been punctually falsified by experiments. Comparing this situation with the astonishing experimental success of the Standard Model and classical general relativity should make us very cautious, I believe. Lacking experiments, theories can only be compared on completeness and aesthetic criteria.’ (Rovelli 1998a)

Derivations beyond order 3 (especially ‘haze’-like models) have lost even the access to sensory physicality. The basic presumption of containment is challenged, in physics (Hawking’s ‘No Boundary proposal’, Hawking & Penrose 1996 p.79) and, separately, in the ‘advanced’ experiences of spirituality. The presumption of constraint is challenged, again separately, in philosophies of Nature (non-inference, non-action), in the mental realm (intuition of the gauging sort) and the physical realm (non-reactive, non-extreme spontaneity). The baseline of criticality and instability never seems to be considered in research. It is present in a Darwin who has chronic illness, loses a daughter, and produces a theory of the ‘preservation of favoured races in the struggle for life’. It is visible in a Kant whose body is bent, prisoner of gravity, and who finds that freedom is impossibility. I could find no modelling of the physical-human situation that included both without involving some sort of boundary, constraint, baseline critical effort (or choice), diRection or activation to deal with instability, in one form or another. Presenting human physicality as these ‘surface phenomena’ (‘oriented-at-boundary’) is profoundly biased. This does not fit some of the ‘non-deployment’ states I consider as supportive of ‘proto-health’ (see <EEs>). Boundaries and constraint make for hard learning in childhood, which is not necessarily plagued by them and by instability. A well-known image encapsulates a view of the entire ‘deployment’ based on such assumptions.

The caduceus, symbol of medicine, is a series of knots, along a vertical axis with a winding path that returns. Its shape also expresses an idea of beneficial mind-head-brain control. It images what emergency medicine knows and does with extraordinary success, healing and curing when necessary. It does not, however, image the ‘ease’ of ‘proto-health’, in which there is no necessity or emergency. It cannot ‘gauge ease of health’.
The medical and clinical frameworks derived from such an icon, with their assumptions of necessary mind-head-brain control, and experiential suppositions of constraint-containment-criticality, are no longer grounded in the physical health of a body-brain that is not split (eg by neuro-endocrine activation-projection and immunologic defence), not permanently ‘deploying critical efforts’ and ‘drawing on its reserves’ to cope and ‘work at it’, and not chronically supported by the stimulants, calmants, diets, and addictive habits that allow this deployed state to be maintained… until exhaustion stops the deployments (in disease). They do not model ‘keeping health on track’ as a ‘ground state’ not requiring work, in a lifestyle that is not a permanent physical or human emergency of some degree, A human-physical interpretation of deployment leads to statements concerning ‘taming’ the instability side effect:

‘It was therefore imperative for them [the Greeks] to tame apeiron, […]. Achieving this end essentially has meant containing what at first appeared uncontrollable: the boundless apeiron. […] Merleau-Ponty speaks of “brute” or “wild Being” (1968, p.170) – meaning organically grounded, primally embodied […] Conventional thinking will need to be turned upside down and inside out. […] we require, an …“epistemotherapy” that …regrounds us in the lived body.’ (Rosen 2004 pp.3 & 6)

Understood as a ‘physical’ grounding of the ‘human’ or the mind in ‘the body’ causes perspectival clashes and the paradigmatic shifts that have been played out for at least five thousand years of our history, and possibly in prehistory. They have not helped. The ‘ground’ could also be understood as a nexial-topologic ‘ground state’ that does not require work or interfering compensation in most non-critical conditions, does not have a. ‘baseline’ patterned activation. In this case, the ‘regrounding’ is a ‘gauging’ of the tendency to deployment, which gives the capacity of ‘not going off track’. Gauging the ‘going off track’ is particularly accessible through the local sensing of ‘swelling’ (undifferentiated meaning of this word, as well as physical), as follows.

Cohen (1955) describes a little experiment of Einstein’s in which throwing upwards a tube containing a free-moving ball shows the covariance of motion and weight. This evokes much in my experience of health and body. The feeling of gravity (a precursor to the ‘grav-wave’)
is covariant with activation, and with ‘swelling’ – physically and otherwise (see figure 31 below). These are directly related to a degree of physical dehydration, and to sensing gradients at body surfaces, and in the mass. With these come an existential sense of having to ‘spread thin’, and of approaching a critical breaking point. The sense of lightness, like a happy ‘flying’, that one can have in dancing, or hopping up a mountain slope like a goat, is gone, as is the sense of ease, replaced by ‘need’. ‘Feeling unwell’ (physiologically and behaviourally ineffective), ‘down’, tired, and in struggling low-grade pain, is the result of keeping this up (eg internal activation of non-specific and systemic ‘defence’ brings little pains related to histamine, cytokines and other inflammatory substances). ‘Illness’ is its ‘setting’ into the development of fibrous-dry rigidity. If this is deployed further, recognisable (diagnosable) disease occurs. These sensations, and understanding of them, could be used for many aspects of current global problems. They do not appear to be specific to my local-case: some archaic texts mention this ‘problem-making’ (sometimes clearly related to health-sanity and feeding behaviour). Their meaning is also expressed in daily life statements such as, ‘you work too hard, you will make yourself sick’.

A more basic view of deployment

I would have liked to limit my presentation to the images included above, together with this section of the chapter, with only scant comments on the images. The details and implications hide the basic nature of the ‘turn-around’ between deployment and non-deployment. An animated and oral presentation would show that the imaging is much more basic to apprehend and use than it seems.

For example, figure 42, at the end chapter <Methodology> provides a ‘complete’ map, which although integrative, is nevertheless complicated and only approximate. The research process simply followed the nexual-topologic deployment to its conclusion, modelled it, and I lived locally its global effects at the same time, in particular, ‘driving’ constraint, critical instability, and swelling. Most of the long-term historical problems with human nature and nature, and the spreading problems of normal, super-, and sub-living that I tackled, are
inherent in representations and action strategies derived from the ‘built-in’ properties
described here. It seems to me that this impression is present in the following passage:

‘The definition of the “preferred basis” (the class of projections) at each time, is the
business of decoherence theory. […] Evidently further pursuit of this question will
require a much more systematic discussion of the criteria that motivate medium
decoherence in the first place; it is clear that on any evolutionary approach to the
specification of a decoherent history space, constraints on what is to count as an
information processing system are also constraints on what can reasonably be understood
as an “epistemic community”. In other words the objection must be ceded, but the
epistemological contrast at issue is actually built into theory ab initio, as constraints on
information transfer and stability; if we are to live in Plato’s cave, at least we can
understand how it is that we are confined there.’ (Saunders 1995 p.26)

One of my motivations in writing this thesis is to show that the icons of culture and their
conventionalised topology of change affect H-globally (Sc-non-locally) the baseline physical
experience of human daily living. Although the researcher’s assumptions and suppositions
are now routinely mentioned in published research, I have not seen in the literature the
‘orienting’ of physical experience considered ‘locally’ in the researcher, as a background to
the research. Another motivation was to show that being able to see how this ‘effect works
and orients findings to criticality, does not require very complex or over-simplified ideas
such as direction and spatialised movement.

**Dual-polar deployments**

In the many conventionalised models that I call perspectives, duality and polarisation are
developed, in one form or another, separately or in combination, in two basic ways:

- **Sequential or 2-nodal deployment**: the animation <4 Linear development> (of a 3-10
torus) can give a sense of how the nexial-topologic deployment can be
projected as a three-stage development, followed by an inverted de-
development. Models of unfolding and enfolding are based on this,
which is the way of patterns or of the ‘Left-’.
• **Simultaneous or 3-modal deployment:** the animation <5
Rainbow-fountain> can give a sense of how the same nexial-topologic deployment can be projected as a simultaneous development of three modes. From the viewpoint of physical experience, this relates to sensations of flowing, movement, activation, increase (etc.), and to archaic notions of ‘Life’, the medieval ‘fountain of life’, Neolithic notions of ‘the Wet’, and the prehistoric notion of ‘Wind’ (H.-‘global’ and Sc-non-local). On a more abstract note, the animation is suggestive of the models based on colours, which can be multiplied, as can the ways of spatialised motions and of the ‘Many’ aspects that arise from the ‘Right-’ perspective. Their combinations automatically produce acute shifts, localised in one way or another. This is evident in many forms: sudden N3p-impulse, thresholds, no time, zero or point shifts, discontinuity, critical events, singularity, quantum jumps (involving both boundary breaking- &-making), physical catastrophic near-destruction, near-death, emergence, experiences of no space, no existence, no more recognisable N2d-pattern (perceptual), etc. Such ‘boundary phenomena’, or critical instability, are built into the representational conventions, in most cases, rather than necessarily being inevitable.

**‘Boundary’: a third, hidden parameter of ‘oriented-at-surface’**

Both sequential and simultaneous views ‘deploy’ detailed views of ‘oriented-at-boundary’. They describe the phenomena observable if boundary conditions are reached. The being ‘oriented at boundary’ constitutes a hidden baseline: of perspective. For example, an emergency focuses senses and attention onto ‘outside’ or ‘inside’ and raises adaptive response, and shifts the observing into perspectival mode. Effectively, the 2 parameters produce constraint and containment, or ‘orienting’, which constitutes a third generic parameter that is hidden (built-in). It can be clarified and given the same status as the other two parameters. It is the basis for the third ‘mode’ found in modal logics. ‘Boundary’ can be interpreted as ‘boundary conditions’, in operational or connective terms, the two most abstract ways of thinking, related to general-systemic or organismic thinking and experiencing. This third parameter is governing (driving and directing), most often hidden
and widely accepted as a baseline for normal experience (eg stress), or believed inherent in ‘nature’ (eg survival, limit of light speed). The models thus produced are unduly generalised as explanations of all daily life, and give rise to an interest in extremes of experience. From these are derived systematised methods and practices, which are often indiscriminately recommended. Conversely, their consequences of containment and constraint, and lack of limits, constitute an accepted ‘human’ and ‘physical’ reality. ‘Boundary’ is also interpreted as boundaries, functional or structural. All these types of boundaries automatically come with representations derived from icons and words, and from mathematics, as is the case for the analytical topology (calculated dimensional geometries) used in natural sciences. Poincaré (1854-1912) thus formalised kinetics into ‘dynamic qualities’, but also recognised that the duality inside-outside, inherent in structural notions of boundary, is a measure:

‘Outside and inside are the two different values of a measure called parity’, on which depends on the ‘number of boundaries crossed’, thus ‘changing the connectedness changes the parity’. ‘By fixing the starting-parity as outside, you can easily, by "evens-and-odds", tell "where you're at".’ (Britton, 2006)

These means of rePresentation leave no room for states not ruled by ‘Boundary’ (not governed by critical states), in which boundary is not reached, established (structural, connective) or stabilised (functional, operational), states that are not ‘at’ boundary surface [topologic], but only approach it, and this not permanently. Nexial-topology describes, instead, a gradual ‘orienting-at-boundary’ that may yield deployment but may also result in ‘un-orienting’ (stopping deployment) and ‘non-deployment’. Since orders 1, 2 and 3, are only a sequential analysis of the animated imaging, all 3 describe, in different ways, the same approaching boundary (I could have explained them as 3 modes, or 3 phases of criticality). The approach of boundary or surface phenomena is ‘gauged’ by an apprehension that does not use measured or calculated geometry, or conventionalised ‘valuings’. For the purpose of the exposé, the images used here are limited reConstructions derived from perspectival framing, and so are related to the senses (five or more). Not separating the parameters to recombine them (not reConstructing in computer animation) leaves the
animated imaging, for which the fixed images and ‘boundary’ are, rather than a baseline, an
*extreme* of deployment, and therefore a ‘state’ rarely reached in daily living. There is a ‘turn
upside-down’. For visual and practical sense of what this ‘upside-down’ means, see <PPT1>
slide 7>, ‘Female mountains and valleys’. I will now attempt to show this in other ways.
All the perspectives and models deployed beyond order 1 (starting with FlatLand) have
overall characteristics that correspond to (are ‘like’, operate the same way as) those of post-
modernist relative truths for the human domain, of special relativity for the scientific
domain, and of general system theory for their integration into ‘advanced’ models (similar
fundamental rules) They are well described by perspectival framing, both explanatory and
 experiential, and by our symbolic languages (including codes, geometry, and icons). The
connection between these expressions, as well as symmetry and circularity, ensure the
 logical consistency of our practical paradigms. This also explains the ‘uncanny’ fit of
mathematics to describe ‘Nature’ (Wigner 1960) and what we call ‘natural’ and ‘human’,
which baffles philosophers of science. The correlate ‘hidden’ or ‘mysterious’ domain and its
related questions (see <Extract F9> Deep confusing questions>) are explained by using the
same conventions (eg space and time), separately in terms of origins or ends, of ‘Where this
is going’ (development) and ‘Whence from’ (source). These are usually characterised as
catastrophic, chaotic, or ‘endless’ – all boundary phenomena. ‘Boundary’ in general, and the
‘spreading’ (eg ‘the earth’ and spacetime) in particular, are either simply assumed, or are
modelled by perspectival unfolding and/or enfolding, as an inherent or immanent, hidden
 third aspect of our realities that somehow causes arising or directing, occurrence or
 appearance. There is, a global asymmetry: nothing models the plain non-existence of
‘boundary’.
Nexial-topology models this situation as it ‘presents’: as an asymmetric, covariant
‘deployment’, a one-sided ‘swelling’ that keeps deploying into unfolded and enfolded
perspectives, and never ‘stops’: perspectives remain ‘oriented-at-boundary’ and deal only
with the topologic ‘surface’ of critical phenomena. Portrayed this way, what is not modelled
by our conventional topologies is that the deployment does not have to ‘come to’ a
‘boundary’ state, and also can ‘stop’ to ‘unfold-enfold’. With it, boundary phenomena and
critical instability disappear. The animated imaging that can model this seems to have
similarities with general relativity if the animations are not interpreted in physicalist or
spatial terms or as realistic rePresentations, and are not divided analytically or reconstructed
wholistically, but understood as the undifferentiated ‘shaping’ of ‘Perspective’ and
‘Boundary’. The mathematical form of general relativity applied to spacetime is an
‘advanced’ framework, and judging by the relevant literature, it seems to have little
grounding in the ‘physical world of humans’. The covariant deployment, however, can be
considered as a ‘global notion’ (see <Ancient perspectivalism\ Global notions>) that does
not discern the many exPLANnations, exPERiences, and other sensory-framed
exPRESSions, all derived from the 2 basic parameters and their hidden counterpart of
‘boundary’. If the covariant deployment is apprehended as an undifferentiated ‘shaping’ of
the above situation ‘as it presents’, then a similarity exists between the animated or lived
imaging and the general relativity.

I will now present nexial-topology in terms of basic geometry, in order to highlight (a) the
fundamental difference between deployment with its resulting asymptotic ‘drift’, and
‘gauging’ with its ‘ground’ that is ‘on track’, and (b) what ‘stopping’ deployment may look
like.

3 simple geometric rules: 90°, 180°, and 360° turns

In manipulating concepts, and comparing them to my benchmark ‘native gauging’, I found
what I express as ‘turn-around’, or as ‘turn inside-out’, ‘turn outside-in’, and ‘turn upside-
down’, depending on the situation being imaged. In playing with scribbles drawn from the
analogies and metaphors in texts, and developing the sequential explanation for this chapter,
it appeared that these could also be expressed as 3 basic rules of thumb based on changes of
graphic orientation in shapes (icons). The easiest way I could find to formulate them in
geometric terms, is as the’ rules of 90°, of 180°, and of 360°”. They are summarised in
images in the slides of <PPT7 Three geometric rules of Nexial-topology>. It seems to me
that these imaging rules are, in a way, known to the thinkers in whom I recognise some sort of ‘thinking in images’ or ‘gauging’ (see <Extract F5\ Gauging thinkers>). I have gathered from their works some text extracts that seem to be attempts as formulating these geometric rules in words (<Extract F18\ Rules of localisation/extension in the literature>).

Following, are three ways to detect the difference between conventionalised perspectives or geometries and nexial-topology.

**As basic as inside-out**

The difficulties of perspectives derived by dualising and synthesising can be resolved by simply noticing (1) that our representations are *under operation of conventionalised* observations (sensory, sensate, psychic, or with the senses shut-down), and (2) that the ‘turning outside-in’ and ‘turning inside-out’ into topographic surfaces are modelled as FlatLands, whether externalised or internalised.

**As basic as upside-down**

The difficulties of perspectives derived by polarising can be resolved by simply noticing (1) that the activations we observe occur or are represented as being *inside systemic frames*, and (2) that the perspectives are a ‘turned upside-down’, or inverted modelling of nexial limit conditions that are ‘downside-up’ geometrically.

**As basic as intervals**

The difficulties of perspectives derived by conventionalising (dualising and polarising, combination or ‘powering’ of one of the two parameters, and other ‘valuings’) to model deployment, can be resolved simply. One can notice (1) the mental or physical nature we ascribe to N3p- ‘activation’, ‘Life’, and our concerns for survival or unease (what ‘saves’), and (2) the generic ‘orienting’ (see <Validity and valuing\ Researcher ‘orienting’>) of our interpretation of the notion of boundary. This is also detectable in the preference in what a viewer ‘sees’ in a drawing of intervals:

- a ‘one’, ‘whole’, or ‘1’,
- a dual left-right (or up/down), or beginning/end,
- a ternary one-side/inside or middle/other-side,

[Compare this to <PPT4 Einstein\ Slide 2 and 8>]

- a topologic containment, a ‘bubble-world’ [nexial-topology] (eg a notion of ‘island’).

The notion of ‘boundary’, just as the global notion of ‘water’, can be interpreted according to any of the (many) perspectives. Attached to them, are completely opposite evaluations in the Sc- and H-domains, and yet another in the combined or integrated Sc-H-domain. All of these are often ‘turned around’ in the daily living domain (what some of us actually do).

Figures 30 and 31, discussed next, are geometric projections (fixed) of the animated imaging. Their aim is to show the difference in another way. The properties of these images are topologic, not geometric: how exactly I draw the changing shape of a drop does not matter. In some conditions, it may be almost a round bubble, or close to a flattened ellipse.

The terms ‘almost’, ‘near’ and ‘close’ are crucial, but they do not imply approximation: they mean never reaching a fully formed bubble or ellipse, and only ever approaching criticality. The axis never becomes a disconnected asymptote, or an arrow drilling a hole in the surface. The bubble-drop never tears off the ground line, which never rises to a sharp point. Nexial-topologic images take on their meaning only in animation, so details of fixed images have only limited significance and cannot fully render what the gauging shows. This is a downside to presenting nexial-topology in the form of a written work:

‘Rendering the concepts sensibly intuitable by means of drawn figures is substituted for the actual production of the primal idealities.’ (Husserl 1939 p.169)

**Global view of dual-polar deployment (figure 30):**

In figure 30, the 2 global parameters (vertical axis of orienting, and spiral of ‘spinning up’ or ‘increase’), and the (no longer hidden) are integrated with that of boundary (topologic orienting-at-surface) in a form that suggests ‘swelling’ (imagine a bubble welling up in the pond). The ‘spreading at boundary’ modelled in this deployment (a welling-up bubble) only describes the extreme of a nexial-topologic ‘swelling’. In the physical realm, this images a low-level criticality with undesirable (valued) signs and signals more obvious than mere (unvalued) sensations. It is characteristic of vertically entraining the brain and the ‘alert
Figure 30. Global view of dual-polar deployment

mode’ (in mind and immune ‘defence’). The top of the axis images the separation of the parameters. The outcome of conventional topologies and modelling is an endless, approximate or probabilistic, risk or hope phenomenon, which has an asymptotic axis and a direction, ie an oriented axis. After deployment (up) and redeployment (down, or ‘back to Below’), the split axis is reintegrated, but it is asymptotic, and invariably manifests in scattering and wasting (reduced here to spreading along the bottom line). That is, on its ‘way back down’, the directed axis is asymptotic to what is a ‘raised ground’ (figure 31 below). The twisting spiral of deployment (‘drop’ outline in figure 30), and the bottom of its vertical axis, never quite ‘comes back down’ to a non-raised groundline. ‘Health’ is never quite stable without keeping the body-brain-mind on alert, repairing, or ‘working at it’. This is the permanent ‘baseline’ of work that is critical to maintain health, and which we generally consider ‘natural’ and necessary to ‘survive’.

*Global view of ‘gauging’ the deployment (figure 31):*
Figure 31 is a fixed image, a flat projection of ‘native gauging’. The ‘oriented activity’ of ‘swelling’ that creates heaviness and dehydration is best visualised not as a directional increase, but rather as a ‘starting to twist’.

Figure 31. Flat view of non-deployed nexial-topology (‘native gauging’)

The spinning-up and axis (at an angle in the image) are beginning to separate, and are starting to ‘deploy’. This does not exist in deployed perspectives that are conventionally framed (figure 30). The ‘swelling’ comes ‘off the ground’, and goes ‘off track’: it rises, bends, tends to twist and spread-at-boundary (or as boundaries). Viewed in directional terms figure 31 would rePresent a ‘coming back on track’. Seen this way, it would be almost equivalent to figure 30, with only a ‘pre-deployment phase’, and the axis would ‘eventually’ be a ‘drift’. Thus, to oversimplify the meaning of figure 31, we could split the image roughly
in two, and consider it to display two conditions simultaneously: deployment (top) and non-deployment (bottom) (see icons in <PPT5\ slide 28\ simplified comparison of ‘early’ and non-deployment>, and in <PPT5\ slide 29\ orienting and notions of fluidity>). The deployed section in slide 29 (right) could then be interpreted in terms of *degrees or phases* of deployment of the gravity of the critical state. Although this could be useful in decision making, it would miss my point. Without visual direction to interpret the image, the swelling simply is a ‘raised ground’ that *is also* on track (remember the exact fixed shape, straight, curved line, or almost a drop, is irrelevant because this is not a timed series of shapes). In figure 31, the bottom of the axis is not asymptotic, and it images *both* ‘going off track’ and ‘coming back on track’, *without* inversion, reversal or ‘returning to normal’. Words fail, here, as does the flat geometry of my images, to explain that this is because there is no direction in the line, and so no logical sequence. As a double-timed series (2-directional), this would rather be like a self-limiting process: at the *approach* of Boundary, the nearer to the boundary state, the closer to ‘being back on track’. I prefer the less differentiated expression ‘auto-shaping’, which does not involve any direction or orienting

**Gauging ‘turn-around’:**

**Deployments do not quite ‘turn back’ to no-deployment**

The notion of ‘turn around’, and the difference between the ‘on track’ ground and the asymptotic ‘global drift’ is the most difficult to explain or show with images; I realise that my pictures for it are not quite adequate. Neither is the use of capital letters, hyphen and quotes truly effective in denoting what I call ‘global notions’ (explained in <Ancient perspectivalism>: neither definite nor indefinite) and their non-local properties:

Figure 30 images the deployment *at* boundary and is *not* equivalent to figure 31, which images ‘*near* boundary’. The bottom of the axis, in figure 30, *is* asymptotic to a *raised* ground, and can be read as directional or bi-directional. It lowest order is only an *approximation* of the nexial-topologic ‘ground’. It appears to approach a ‘track’, *after* a modelling inversion (eg reversing a direction), but it is also never quite ‘on track’ (as in endless fine-tuning). The track, as an end of deployment, remains raised or bent (at an
angle). In <PPT5\ slide 29> I separated the 2 directions of the line to reintegrate them into a single line that is directed ‘up’ (on the right side of the slide) to show ‘deployment and redeployment’. The end track is an asymptote and not ‘like the ground’. Being an asymptote, and having an inverted curve, it constitutes a ‘drift’, a going ‘way off track’, and the curving has undergone a ‘turn-around’.

‘Turn-around’ between deployment and non-deployment (figure 32):

This ‘turn around’ is shown in yet another way in figure 32, in which some details are eliminated to compare the orienting of the deployed track and non-deployed ‘ground’. In this

![Image of orientation diagram]

Figure 32: ‘Turn around’ in orienting

*Deployments do not quite ‘turn back’ to no-deployment.*

‘Orienting is a crucial question: deployment can lead to the critical and going off track.*

image, the ‘ground’ of figure 31 and the ‘almost on track’ of figure 30 are both shown, in parallel, to highlight the changing shape that approaches them. On the left, the (nexial-topologic) ‘ground state’ images the non-deployed state of health, ‘unaffected ease’, or
‘proto-health’. This state is not a ‘baseline’ (established standard, stabilised normal to ‘return’ to, or ideal ‘responsivity’ or ‘inter-connectivity’), but a non-deployment that stays close ‘on track’, flexibly ‘shaping’, while keeping ‘integrity under operation’. The ‘swelling’ (the drop to the left of the ground) describes a ‘twisting’ related to dealing ‘locally’ with the situation and its global (non-local) properties. This twisting ‘turns left’ because this corresponds to the empirical observations I made locally (the vertical axis entrains the physical left-brain). The right of figure 32 images ‘deployment’, in which, experimentally, I found that the right-brain is first entrained (before a unified down-projected redeployment occurs). With deployment and redeployments, come the endless small corrections of ‘fine-tuning’ in the many aspects, orchestrated like a plane’s autopilot that controls staying close to a diRectioN (as the brain-head-mind does). It never reaches the target and is only ever ‘advancing towards it’. It is also subject to critical instability (failure of this automatic directing by the brain-mind can be catastrophic, as medicine and psychology tell us). This is very different from the nexial-topologic ‘being on track’, which is non-oriented, and it is a poor rePresentation (topographic) of the nexial-topologic situation that ‘presents’ as ‘not reaching boundary’. The latter does not need to be ‘directed’ because conditions are rarely critical enough to require deployment (unfolded-enfolded) and the differentiated rePresentations of ‘reaching boundary’. The most practical way to express the ‘turn-around’ is this: In allowing the refining and many redeployments necessary to produce this written thesis, I learned many vocabularies and sophisticated definitions, to discern new generalisations and to represent topographically the very ‘small’ and ‘large’ (or ‘above’- ‘below’, or inside-outside, etc.), in particular in sensation – in other words, I increased my mental capacity for manipulating ‘œ-details’. This corresponds to the most commonly sought benefit of ‘pushing’ deployment: an increase in sensate refinement and mind power(s). Nevertheless, this has also been accompanied with a dire physical loss for daily life: my once better than normal eyes can no longer see detail (blurred sight), cannot distinguish colours (especially night vision), cannot read near, or discern clearly very far. Both of these are
expressions of ‘fine tuning’ (the ‘endless’ and ‘scattering’), and both make living difficult.
As a whole, they are ‘turned around’ compared to the ‘ease’ of the non-deployed ‘ground’.

**As basic as ‘stop’: stop deployment**

Ultimately, ‘gauging’ is a simple ‘apprehending’ or ‘sensing’ that is not based on iconic
fixed images conventionalised according to senses. It does not make all the formalised
distinctions, especially not the normal evaluations of ‘health’ and complex defining of
boundaries in various forms. It is understood through basic ‘global notions’ (conventionally
simple or primitive). In the clinical encounter, the patient’s listing of ‘bad’ and ‘good’
symptoms (pains and improvements), and the clinician’s valuings, filters, perspective, and
differentiate vocabulary, as well as his/her own baseline state of health (regarding the
normality of criticality, immune activation, and orientation of the brain), lead to biased
evaluation and a drift that prevents a ‘gauged’ understanding of the global health state. A
visit to ask questions and discuss ‘where this is going’ can lead to treatments that may
alleviate pointedly some pain, compensate for dysfunctions, or improve subjective well
being. They may, at the same time, be deeply counter-productive for the physical ‘integrity
under operations’ (eg promoting water swelling and hidden wasting), and even disastrous in
other places of the body or lifeworld, or in the long term. The fate of the average patient
‘without diseases’ is witness to that; examples include the medicated elderly fed with ‘easy’
foods, children under brain-activating diet, chronic patients, etc. Moreover, the gauging can
only be done ‘locally’, by the patient whose situation is under scrutiny. An ‘external’
other cannot do this gauging because such observing goes through the senses. Neither can
an ‘internal self’ whose representations are ‘sensate’ (derived from sensory images). Sensory
specialisation produces narrowed, limited, perspectival representations (whether divided or
divided-reintegrated) that are indirect. They are also dual-polar and can only produce
reconstructed motion, rather than a topologic animated imaging. For ‘gauging’ the topologic
properties of a nexial ‘health situation’, therefore, sensory information and the valuings
derived from them must be given up while observing (ignored, not attended mentally,
constructed, or interpreted) because they interfere with an undifferentiated apprehension.
— One cannot ‘gauge’ if engaged in any sort of ‘valuing’ —

The best known way of doing this is to be ‘non-judgemental’, or to ‘not put a number value on things’. These limited ways do not prevent the anthropomorphic attributions and ‘physikemorphic’ projections, materialism, and other discerning specifications using general conventions. A more generic and more basic way to do it without these is to:

‘Stop what you are doing, take a deep breath, stop the mind’…
and sense what ‘the world’ is like from ‘here’.
Ancient perspectivalism, ‘The Earth’, and ‘The East’

In reviewing the literature concerning health, medicine, healing practices, and the body, medical theory cannot be considered a single entity; as many theories and models of the body have been developed. Understanding the oldest requires turning to ancient texts, some of which are difficult to understand.

*Reading ancient works: Words, syntax, repetition, and semantics*

The problem of rendering in modern language the meaning of archaic texts is common to both Western and Eastern cultures. It is often difficult to make even basic sense of some sections of text, or of the widespread habit of repeating a story with slight differences. For example, there are five versions of the same story in the oracles of Bil'am (Numbers 23:1-24), and many reformulations in Amos (eg 1:5-7, 5, 4:2-3, written circa 760-750BC). This scholarly problem is not limited to mere translation, nor is it only a modern problem. Many reasons are invoked. For example, such works are often edited composites (eg Genesis), collated from several different authors who are often unidentified, and who came from different periods of history:

‘It may be impossible to separate what is old from what is more recent – to distinguish what the compilers added of their own’…’ (Waltham 1971 p.xiv).

The rewriting of lost texts by new authors also causes controversy about authenticity. The loss is attributed to various events such as a burning of books (eg in the Ch’in dynasty [221-207BC] or the library of Alexandria). After such episodes ‘scholars who had memorized…rewrote the documents from memory or dictated them to recorders’ in an ‘atmosphere of restoring the learning of antiquity’ (Waltham 1971p.xv; about philosophers and scribes restoring archaic compositions). Dating each part of compound documents to determine a chronological order of production can be done on literary and historical grounds, but
sometimes chronologies have been deliberately altered by ancient editors, and even inverted. Such an inversion is usually ascribed to a need to fit a mental organising model or an abstract theoretical framework, whether implicit or explicitly stated, in order to produce a new synthetic compilation. The ancient compilers often also added introductions or (later) commentaries, in an effort to clarify the new understanding of the then already obsolete language of bygone eras. The lack of syntactic separation, in such ancient works, makes it often difficult to know how to attribute these added pieces, or even differentiate them from the original text (for example adding ‘he said’). Such texts may also be considered part history and part exposition of views, and they can be read with a wide range of interpretations. This is reflected in both ancient editing and modern translation, multiplying the sources of shifted meaning and of misunderstanding. This idea of ‘misunderstanding’ is also rampant in philosophical discussions of previous authors, since antiquity. It is directly related to historical ‘tracing to origins’ (see chapter <Methodology>) of a unitary ‘original’ meaning:

‘An analysis of the early forms of a Chinese character may reveal the history and semantic associations of the word for which it stands. Furthermore, the imagery contained in a written character continued to influence the manner in which people thought about a word in later times. This was true even though the imagery was sometimes misinterpreted by later writers who no longer understood its origin.’ (Allen, p.33)

Since antiquity the original meaning is attributed to an author, and the distortions to the mental ‘filters’ of a reader, translator, or compiler: ‘… it is because we intellectually distort or misinterpret…’ (Braud 1998 p.216). This explanation involves evaluation: a wrong understanding of original meaning. Considering ‘filters’ of ‘mis-’interpretation as expressions of a perspective makes evaluation and judgement unnecessary. It removes the value of ‘truth’ in the ‘original’ meaning, which is also a perspective. If a perspective denotes a ‘way of looking’ at things, a geometric interpretation of it explains easily the related biases in both original and interpretations. There simply is a different a centre of projection for ‘looking’ (see <Perspectival observation>). For archaic myths, however, this is

\[1\] References styled with italic small capitals relate to the books of the Bible.
not a sufficient explanation. Archaic myths are collectively carried stories so the ‘original meaning’ reflects a global ‘culture’, including attitudes, but also behaviours (eg burial). It expresses a practical worldview or paradigm, using a certain vocabulary, and this does not fit an idea of mere ‘mental’ individual meaning. Other texts appear to not be composite and so the above reasons for the puzzling repetitions with slight differences give little clarification. In such cases, the common rationalisation ascribing an intent to re-express the same message with added detail for better reader comprehension involves an individual writer and so is not useful. Another explanation is that the repetitions correspond to subtle layers of meaning in a single story that is retold (eg the ‘codes’ found by some in religious writings). Often, the problem is even simply ignored: the several versions of the same story are interpreted as a series of entirely different stories, or as developments of the same story. For example: in The oracles of Bil’am (R. Abbott 2006b), the text uses several different ‘divine names’ (R. Abbott 2006a), and:

‘The text describes a series of visions received by Balaam son of Beor’ (R. Abbott, 17 June 2005, personal communication)

**Language: meaning shifts and archaic expression**

These various kinds of explanations do not always take away the puzzle. In some cases, it is the archaism of the language itself (little differentiated), and the vocabulary, that are problematic:

‘The vowels [used in the translation] here are conventional, since the dialect, like the original Biblical Hebrew, only shows consonants.’ (R. Abbott, 17 June 2005, personal communication)

‘In addition to the fact that the genuineness of certain documents has been challenged, there is the inherent difficulty of the text. As Karlgren states, the Shu “...through its lapidary style and archaic language, is often exceedingly obscure and frequently offers passages which, from the point of view of grammar, allow several widely divergent interpretations...”. Here and there in the text are Chinese characters that even the great native commentators have found inexplicable and have passed over – even though their lives’ work had been writing commentaries on the classics [...] Chronologic sequence is mixed here and there.’ (Shu Ching, Waltham 1971 p.xvi)
Translation from archaic to modern languages is greatly complicated by the increased complexity of modern grammars and the increased limitation of the meaning of words (obvious in definitions in specialised knowledge). The meaning loses something in the rendering of archaic text in complex modern forms. Often, the little-differentiated meanings of archaic expression seem to hold little meaning for the modern thinker, who is dependent on the refined, separative distinctions we make (eg the distinctions body-mind-behaviour, or individual-collective). Adding syntax to create fully formed modern sentences comes, in particular, in the form of little words: conjunctions (eg ‘on’, ‘in’, ‘at’...), pronouns (eg ‘it’, ‘he’), expressions containing small words or verbs (eg ‘person’, ‘and he’, ‘that... did’). It also comes in the form of quotes for speech (non-existent in the oldest texts, hence, uncertainty about who said what). Often this is deemed necessary just to make sense of the text. These linguistic elements can be helpful, but they can sometimes fundamentally change the meaning, and not do justice to the ‘undifferentiated’ thinking that produced it. Of course, there are also semantic shifts of meaning resulting from ‘natural’ linguistic development or growth (Romanes 1888 pp.238-245 – this can be seen in the several meanings of a word in a dictionary). There are even outright reversals of meaning (visible in an etymological dictionary; see also <Extract F13\ San Jiao & inversion>).

The diversity of interpretation may also be partly due to the transfer of oral tradition between orator and listener, and into written texts: deformations in spelling (in lettered languages), or in calligraphic copy of characters (in Chinese in particular), and regional sound variations (in Chinese). It seems to me also that, in listening to oral teachings, in Chinese, a very small sound variation (alteration of intonation), rooted in a general meaning interpretation with a different bias, can result in an entirely different specific meaning that is rendered by an entirely different character. Meaning changes also happen in shifting from a naturalist to a mentalist or anthropomorphic interpretation. For example, Wilhelm (1989) and Jung have been criticised for having psychologised the I Ching. Such changes can reflect an interpreter’s limited understanding (eg: ‘Water of purification [lit. of impurity]’; NUMBERS
19:9). A different way of approaching some of these ancient texts is proposed here, related to a writing style called ‘syncretic’.

**Syncretic writing**

Time evolution or developmental schemes of perspectival classification are well known, but have their problems (eg elitism, and origins). Modal schemes (eg multiple intelligences), also have their problems (eg paralysis of action due to post-modernist relative truths and incapacity to evaluate). They are also less well known or understood, as a theoretical structure. Integrating the diversity of views (perspectives) is often either glorified as ‘wholistic’ (all-inclusive ‘theories of everything’) or afflicted with the terms ‘bricolage’ or ‘syncretic’. We leave bricolage aside because it is applied to pragmatic or experiential spheres, which are not the focus, here. Syncretism, however, affects generalist texts whose views affect attitudes to the body and health. The term ‘syncretic’ is applied to certain texts that appear ‘confused’ and susceptible to just about any perspectivally biased interpretation. If such texts are approached without a relevant classification technique, or analysed according to the above schemes, they appear to have no logic and, by extension, are assimilated to confused thinking. This judgement is inadequate in the cases considered.

The term ‘syncretist’ has various definitions, depending on sources and fields of application, but they all relate to some form of integration or unification that is considered too partial or biased. The term is used, in particular by Graham (2001), to qualify certain Chinese texts that are ‘multiple but rooted in the oneness’ of the ancient tradition of Taoism, and whose purpose is ‘to sort out the... five major schools, in order to recover the integrity of the complete tradition.’ (Note that the words ‘five’ and ‘complete’ are consistent in representing a stage of nexial-topologic ‘deployment’ by integration. The ‘oneness’ and ‘integrity’ constitute assumptions, consistent with this stage.) This writing style reviews the [claimed complete] range of schools of thought by quoting from them certain fragments that are most significant to represent each a school. This produces a multi-school or multi-perspectival account reminiscent of a modern philosophical review of cultural history. Le Blanc (1985) describes a similar format in the *Huai-Nan Tzu*, where the connection between chapters and
parts of chapters is not obvious. Such a connective review describes multiple perspectives by sampling the way they work in the culture in general, or in a particular area (eg spiritual practices). This is similar to the ‘circumnavigation’ of perspectives (explained in chapter <Methodology>), and can be used for perspectival analysis (for a meta-analysis of many perspectives).

Tedlock (2000) describes a similar writing style in the accounts of female ethnographers, feminists authors, and critics, which are neither chronological nor progressive, but seem disjointed, fragmentary. They are

‘organized in self-sustained units rather than connecting chapters, […] constructing their texts of fragments: letters from the field, diary extracts, musings, poems, dreams, drawings, and stories.’ (Tedlock 2000, p.468)

This multi-contextual approach using ‘separate vocal registers’ presents various views on the same field observed, ‘by contrast to masculine ethnographic and autobiographical narratives’, which are 'unidirectional' and 'have harmony and orderliness'. This female approach allows one to circumnavigate various aspects of an issue to bring to light a core of human experience.

**Syncretism as multi-perspectivalist circumnavigation**

The female ‘vocal registers’ might be organised or derived in the same way as the several voices of the prophet Bil’am (R. Abbott 2006b), and as the changes in vocabulary found in certain archaic texts such as the *Shu Ching*. The two approaches, the Western ‘female style’ for human, experiential purposes [a Right-style], and the Chinese style of antiquity for analytical, explanatory purposes [a Left-style], both do the same thing: they circumnavigate various perspectives. This ‘looking at all aspects’ can be construed as general (explanation and interpreted general ideas), or specific (experiences in various spheres of existence). The archaic texts do that at a lower order of differentiation or specification, and this translates into more global descriptions (eg not differentiating personal behaviour from bodily patterns of activity, or scientific health from human sanity, or the individual from the collective).

They seem to deal with general world-models of the ‘physical world of humans’ that have specific applications in various aspects of living. I explored this style of writing by practicing
it (a paper studying views on water throughout world history and from different viewpoints).
I did this partly to test its suitability for communicating my generalist review of perspectives,
and partly to explore the idea of water as an undifferentiated ‘global notion’ (see below) that
can be explored through any perspective of the entire possible range (one of only two notions
allowing this, the other being ‘gravity’).
All the above ways of interpreting, changing, and shifting meaning are not so surprising: we
operate such shifts constantly when we ‘colour’ what someone else says, rephrase a story
heard from someone else, or reformulate according to an abstract framework of
understanding. Doctors do this systematically with a patient’s ‘illness talk’, for the
professional purpose of naming medical elements such as symptoms and diseases.
Sometimes, in the process, the meaning is distorted or even completely inverted. This can be
the result of introducing a causal link, an inside-outside relation, or a physicalist or mentalist
interpretation into an account that does not differentiate these aspects. For example, a
stressed-sensitive-allergic ‘state’ can be shifted to ‘stressors and reactions’; a ‘general sense
of ‘strain’, ‘damage’, and ‘feeling not well’, ‘something wrong with the patient’. It can be
shifted into a psycho-behavioural ‘maladaptation’ or a physical failure of the brain’s central
control. Furth (1999) notes this problem of specification in the clinical encounter
communication:

‘Cheng’s stories [physician practicing in the 1610’s and 1620’s]... exposed a gulf
between one expert’s readings... and sufferers experiencing these in terms of a [learned]
phenomenology... or sensations. [...] Illness, as experienced and described by the
sufferer in the language of symptoms, had to be renamed – converted through pattern
analysis into “disease”, a medical diagnosis that unlocked the key to a therapeutic
strategy.’ [Note 14 by Furth:] ‘Here I am applying the medical anthropologist’s distinction
between “illness” as a subjective-experiential perspective and “disease” as an expert’s
‘She [Tan Yuxian, a female physician] addressed symptoms directly, and her
explanations of etiology avoided pattern diagnosis. [...] In prescribing she followed no
school but selected eclectically from both Song and Ming models. [...] Cheng’s cases
show male learned medicine as focused on crisis management and on internal medicine,
especially epidemic disease and acute fevers.’ (op. cit. p.296) (‘internal medicine’ specialises in diseases, as opposed to the GP who treats persons in their life).

Patterns of activity are ruled by the N2-dual and N3-polar (or 3-modal) parameters, which I derived from language, through the study of words and vocabularies for explanation and experience (see chapters <Many Perspectives> and <Nexial-topologic deployment>). It is fitting to use perspectival analysis to understand ‘illness talk’ and ancient texts as well. Classifying sets of vocabularies found in different sections of text according to a taxonomy of perspectives helps detect logical consistency within each section. It also allows one to discern shifts of perspective between sections, and so to find a logic in syncretic texts. The shifts appear through the vocabulary rather than being named as a philosophy or theory or separate aspects of experience (the word represents a generalisation). Thus, one can also distinguish the biases introduced by later compilers, from those added by commentators, those of translators (and of interpretive exegesis, but I did not study these). I worked on the texts directly with this method, in parallel to taking into account the scholarly dating of texts because chronology is a sequential projection, one more way of mapping.

In archaic texts such as the Shu Ching, and the (historically) oldest texts of the biblical Old Testament, this unrecognised form of syncretism is habitually interpreted as prophetic or kingly views on the history of the world (Shu Ching is translated as ‘Book of History’). Already in the past they were thus interpreted and reformulated. This prompted most modern interpreters to consider them, most conventionally, as mythologised interpretations of ‘real’ history (temporal, sequential developments of humans, validated by physical archaeology), or as religious prophecy (temporally projected to the future, predictions). This does not clarify why such texts are nearly always anthropomorphised, psychologised, or spiritualised – ‘the world’ is that of ‘humans’ –. More recently, ecological interpretations have been proposed (related to climate change), based on a material (eg economic) and physically external view. Yet interpretation by using a grid of convention related to the physical body is extremely rare, relates only to named diseases, and never, as far as I know, to internal sensations and health changes. Such a physical interpretation was intuitive in me because the words used in some texts correspond to some of my experimental observations. Moreover, I
was not yet aware of the accepted approaches to interpretation and exegesis. The resulting physical meaning is surprisingly useful for the study of the syndromes of instability.

**Confusion about the Elements and ‘correspondences’**

These habitual interpretations leave unexplained the difficulty or ‘obscure’ vocabulary and of the expression in some of the texts that even specialised scholars find ‘difficult to understand’, as well as the confusion among all the models of medicine. This is not a new problem: Hippocrates himself had to contend with the latter:

‘As for the doctors, some of them claim that man consists of blood, others that the consists of bile, while other claim that he consists of phlegm.’ (Mattock, & Lyons 1968 p.2) […] For they say of the thing which they each call by a (different) name that it is one and that it necessarily changes its form and its power as a result of what is hot and what is cold, and that it also becomes sweet, sour, white, back and whatever else is like that…. In fact, though, we now find in the body many things which act as causes of disease when they heat, chill, dry or moisten one another unaturally and, as a result, there must be many types of pain and many methods of treatment.’ (op.cit.p.3)

‘It must inevitably be that the generation of what comes into being does not come from what is single.’ (Mattock, & Lyons 1968 p.4)

‘Hippocrates’ Book On the Nature of Man – He said: In discussions on the nature of man there are those who […] All of them make use of one and the same notion without making the same claim; but the proof that they advance for their notion is, in fact the same. Their assertion is that what exists is a single thing, which is “the one” and “the whole”, but they disagree with one another about the names (to be used). For, according to some of them, this thing that is “the one” and “the whole” is air, while others claim it to be fire, others water and others earth. […] their claims differ while their notion is the same… My own view of these people is that they confuse their own theories by the words they use because of their ignorance, and they approve the doctrine of Melissus.’ (Mattock, & Lyons 1968 pp.1-2)

Many modern alternative views of health make claims about ‘the origin of all disease’, placing the problem in lifestyles and food, or in impaired internal functions. The first advocate healing practices inspired by tradition. The second use the medical views from antiquity. These physical explanations, external or internal, (there are also the mental ones, not our focus here) all appeal, at some stage, to descriptions according to ‘the Elements’. For example, the solution or cause is in breathing (Air) (eg from exercise), in thyroid,
temperature and digestion (Fire), in posture and nutrition (Earth), or in fluids such as blood and drinking water (Water). Understanding these explanations requires one to understand ‘correspondences’ between them and items such as body types, seasons, plant types, colours, smells, tastes, (ignoring here the psycho-spiritual aspects: planets of astrology, musical notes, numerology, stones and crystals, animals, etc.). The diversity of models and associations is overwhelming, as in other areas of knowledge. Most people, it seems just choose a particular system of correspondence and learn its interpretations according to a particular tradition and school (a perspective). A more wholistic approach is to collate the specific correspondences, meanings, and interpretations into an integral meta-map of ‘The Elements’ across cultures. I tried this, but there can be 3 Elements (Earth, Water, Wind or Fire), 4 (Earth, Air, Fire, Water), or 5 (with a mysterious ‘fifth Element’ or ‘centre of the world’ or, Wood, in China – see Suwen in Ni, Maoshing, 1995 p.16), or even more. The countless ways to organise correspondence details do not match (recall the experiment <B2\3-stars experiment>), and the interpretations are inconsistent, and even sometimes contradictory. White can be yellow in a system that does not have the colour white; and another system that has both colours may associate white and yellow correspondences that are different or opposite from those of other systems. To the question, ‘why 3, 4 or 5 Elements?’, I only found answers that sent me back to tradition and to the framework of ‘The Earth’. Each general model can be represented as a square or a circle, and the explanations, as in linguistics, are most often psychologised, mentalised, or spiritualised (eg the ‘medicine wheel’ of traditional education, which is still taught: Livingstone 2005, National Adult Literacy Database and e-Learning Design).

The Elements are also associated with the 4 directions or cardinal points of ‘The Earth’, East, West, South, North (and intermediaries in the Chinese system). This causes some organisational problems and many questions. How is ‘the body’ related to ‘The Earth’? What do these ‘directions’ mean for the body? ‘The Earth’ always has 4 directions (or 8, with intermediaries). Why is there preferentially 4 directions, not 3, 5, or 6? (The number of Elements has no such preference). How do 4 directions of the space of ‘The Earth’ relate to
the 6 directions of the senses, up, down, left, right, front, back? (See <PPT3 Geometry of perspectives>.)

**Tracing the origin of the 4 directions: East, West, South, North**

The diversity of the Elements and correspondences makes them good candidates for perspectival analysis of the associated words. The universally preferred number of directions of ‘The Earth’ (4) could not. It is these questions on the numbers of dimensions, directions, and Elements, that forced a study of ‘models by the Number’ (see <Many Perspectives> and more detail below). The usual explanation for the ‘4 directions’ is that 4 directions is how our body relates to the planetary geography (right-left, front-back, up-down)… but one needs an existing physical world, a globe surface, to define both body and land geography. This superficial technical explanation is circular, in the same way as Human-based explanations involving a self and creation are. How did we invent the 4 directions? I turned to the most ancient texts, the archaic myths that explain how ‘the world’ came to be, and the later texts that discuss them, to trace the origin of the directions.

Beyond the wholistic, anthropomorphic explanations of modern thought, or of antiquity, before about 500BC, the descriptions of the directions become partial, containing only 2 or at best 3 of the directions (South is often missing). Often, even the term ‘The Earth’ disappears, replaced by the creation of ‘the world’ (later interpreted as ‘Nature’), and the apparition of ‘Humans’ or the occurrence of ‘Life’ (both of which are later interpreted as ‘temporal existence’ or ‘when Time began’). The notion of correspondence disappears as well, replaced by certain properties, and methods (see below, the ‘conveyances’ in the quotation from the *Shu Shing* [Waltham 1971 p.31]), which the archaic texts already present in sequence, as a history. It soon became clear that ‘The Earth’ is a super-framework, a meta-model. The origin of this framework considered as a reality is often attributed to the writer’s own culture (or mind, these days), or located in his country or its capital city. Viewed as a perspectivally integrative framework, each ‘direction’ becomes a sub-model, a perspective that takes on a theory-name: ‘the East’, ‘the West’, ‘the South’, and ‘the North’. These sub-models can be viewed sequentially as ‘previous’ models, developed in previous history.
Each is preferentially related to women (East and South) or men (West and North), and has a focus more on body and health (female), or behaviour and sanity (male) – this is consistent with modern interpretations and habits. Historically, they can therefore be construed to arise in women or men, or in matriarchal and patriarchal cultures. This is the source of a controversy in archaeology, concerning Neolithic cultures construed as governed by a ‘Mother Goddess’ religion. For example:

‘The record of contributions of women to Chinese civilization goes back… to the legend of a certain female tribal leader of high antiquity who is said to have “patched the sky with five-coloured stones” at some remote time when the pristine completeness of human life and harmony with nature had been lost. […] The use of traditional keys to Chinese symbolism, according to which the sky stands for the mind and the number five stands for the center, suggests that the origin of the doctrine of the “five forces” or “five elements”… is mythically associated with a prehistoric shamaness.’ (Cleary 2000 p.380)

It seems reasonable to infer that these frameworks developed over a long period before archaic history. There seems to be no logical or structural reason to consider that one precedes the other, historically, except our current biases may favour one over the other. They could be construed as arising concurrently in social groups, but each ascribing different properties as ‘fundamental’ to ‘reality’ and to either males or females. Cultural location and shifts can account for one or the other realm becoming more dominant in society at different period or in different places. Such a double-arising (covariant) is consistent with certain archeological hypotheses related to the symbols of snake and antlers (assimilated to horns):

‘John O’Shea… and Marck Zvelebil… claimed that the society [of the Oleneostrovski Moginik people] had been divided into two lineages, one marked by the use of elk effigies and the other by those of snakes.’ (Mithen 2003 p.170)

(These symbols seem respectively associated with East and West frameworks – see section ‘Wind as topologic notion’, below.) ‘The Earth’, then, appears as a collective, cross-cultural paradigm that integrates genders in various ways. It flourishes in texts from the time of the appearance of reason and logic (around 5-600BC) in both Western and Eastern cultures (Greece, China, and India). Each of the 4 sub-models (East, West, South, North) is a ‘previous’ model (less developed or deployed) to that of ‘The Earth’. Each is a practical
paradigm and a perspectival world-model in itself. It has its own biased developmental story for the appearance of ‘Humans’ (the name is language bound) and of ‘the world’ (with various names for it, now ‘reality’, ‘spacetime’ and ‘nature’). The name ‘The Earth’, on the other hand, seems to always be the same, in any culture of the archaic period. The corresponding perspective is a wholistic or integrative 'FlatLand' (flows) and correlates with human experiences that did not occur in the earlier stories. The Bible mentions several times ‘falling on his face’ and in ‘deep sleep’ (a ‘mystic brain’ triggered experience), and a Chinese text does. This suggests that the new model of ‘The Earth’ spreading (or the more primitive form of a 5-point flow to ‘patch’ a ‘sky’ surface) is symptomatic of a global increase in criticality of daily living. This increase, the experiential symptoms, and the ideas of flow, arise recurrently in long periods in human development. (There could be several thousand years between the Chinese shamaness and the later 5 Elements.)

As far as I could gather from the most ancient myths, the female ‘wisdom’ is derived from ‘Naming’, a cognitive capacity ascribed to women in the ancient texts, and not described in modern psychology, but related to alliteration (see some of mine in <EE9: Alliteration>). It is also related to dancing and movement, which are involved in inventive craft and ceremony, but also in healing (see <Endnote C8: Spontaneous yoga>). The ancients ascribed male ‘knowledge’ to ‘Number’, measure, sound and song, which are related to pattern, and are involved in creative imagination and improvement (material, personal, and cure). All these develop culturally into patterns of ritual and practices, and collective notions of fixing or improving human behaviour and condition.

One way to construe the ‘origin’ of ‘the world’ is encapsulated in the Western (male) spiritual notion of ‘the Word’, equivalent to the Indian notion of ‘seed sound’ (as used in mantras for example). Scanning, as a whole, the cultural history and records of health-sanity since late prehistory necessarily involves understanding overt cosmologies and world-models implied in human practices and technologies, which change with epochs. The notions of ‘the

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2 I recognise this as a more critical form of the CFIDS related bodily ‘shut-down’ that brings on suddenly an imperious and irresistible need to lay down and sleep, wherever one is.
world, ‘the earth’, ‘the universe’ or ‘nature’ seem to be always directly related to definitions of ourselves (eg ‘human’, ‘man’, ‘intelligent’, ‘not animal’). Their characteristics are similar in any epoch and suggest that the framework of ‘The Earth’ is also a recurrent development, periodically reformulated (for example, currently, ‘globalisation’ is related to trade between humans over the entire ‘face of the Earth’). Mostly, in the health systems, the ‘physical body’ is treated through the meta-model of ‘The Earth’ (even now), with its rationalisations about ‘not-human’ behaviours. The actual sensations are approached through similarities, analogies and metaphors (which are also correspondences) rather than as a ‘likeness in shaping’, which is the approach proposed in this work.

‘Obscure’ vocabularies

This perspectival understanding of the many medical theories and models of the body and its behaviour still do not give clear meaning to the ‘obscure’ vocabulary used in some of the oldest archaic texts, in the ‘dark sayings’ that puzzled ‘antiquity’ writers. This too, Hippocrates had to tackle, and his own work contains such obscurity, which may have been interpreted in the process of reporting his views (notice the ‘Hippocrates said’, and the reformulation in the following quotation):

‘Both works [Book on Humours & Book on Nutriment] are among the most obscure and difficult of the Hippocratic corpus. (Mattock, 1971 p.ii) […] The English translations of the two works presented here will… frequently appear nonsensical. It seemed better, however, faithfully to represent the Arabic… than to attempt to produce a more comprehensible and less literal paraphrase.’ (op.cit. p.vi)

‘The first chapter of Hippocrates’ Book on the Humours – Hippocrates said: The colour that the humours have, when there is no state of ebb of the humours, is like the colours of the flowers. They must be sent in whichever of the suitable directions in which they tend, except for those of them that are not concocted. Concoction takes place only in the course of a period. […] That which occurs spontaneously from above and from below, and that which is beneficial of this and that which is harmful. You must investigate the generic type, the country, the habit, the age, the time of year, […] Deviation, cessation of the flow to the head, to the sides, where the thing especially tends. Drawing in the opposite direction what goes upwards and downwards; or drying these things; or with [1.scribal error] that with which washing is done, from below and from above; or that with which soothing is effected. Do not imprison inside, …, what runs from the seat, from whatever
thing it flows, ... from some humour that has coalesced, ..., from wind, ..., from inflammation or from some other cause.

‘You must look at and investigate these things: what ceases spontaneously, what things are harmful or beneficial after what things, shapes, movement, rising and settling down afterwards, sleep and waking or getting up. What things must be done or prevented. Winds, ..., an easy life, body, intellect, learning, memory, voice, silence. [...] what flows from the sides, when you investigate the ease or difficulty of bearing it before the onset of danger. What does not proceed as it should must be prevented.

‘Concoction, the flowing of what tends downwards, the ascent of what tends upwards; that which comes from the womb; [...] it must be changed to the opposite. That which is evacuated by excretion, where it tends; foamy, concocted or cold, crude, mixed with winds, diffusing an evil odour. Thirst that was not there before, no burning or any other ailment, urine, moisture of the nose.’ (Mattock 1971 pp.1-6)

‘The second chapter of the Book of Humours of Hippocrates. Falling down [1. the sense of this word is uncertain], emaciation, swelling, fresh breath, hypochondrium, extremities, injured eye, change of skin, ..., ease and difficulty of bearing; smells of flesh, mouth, ear, excrement, lower wind, urine, sores, sweat, sputum, nose; salt flesh or sputum or nose or tears or another humour. That which is beneficial and that which is harmful are similar in everything.’ (p.8). (Mattock 1971 p.8)

‘Number’ analysis: 2, 3, & 6, and systemic thinking

To understand ‘whence from’ come all the frameworks used in medicine (and other fields) and their relevance to non-sensory sensation deemed ‘internal’, and to the syndromes studied, I analysed more particularly the three ‘Numbers’ 2, 3, and 6, which are directly implicated in sensory-based, perspectival description.

The dual and modal (or polarising) parameters (see <Many perspectives>) are not new, although I could find no academic works using them both, together for meta-analysis. The most complex or inclusive perspectival style of typology related to Number is found in ancient literature, and is based on combinations of the numbers 2 (dual, binary, or nodal) and 3 (polar, ternary, or modal). This is used to describe the fundamentals of reality. Combinations produce up to 6 nodes integrated into ‘M6’ models that are meta-‘maps’ (the imagery of the models is flat). The most obvious example of an ‘M6 model’ is found in the I Ching trigram: a set of 3 lines (ternary), broken or unbroken (binary). Each of the trigrams is associated with a meta-correspondence (a correspondence to a correspondence of the
directions in the Earth model – See endnote <C14> Study of Trigrams and Elements>: The 4
of directions in the Earth model is here doubled by mathematical combination of 2 and 3,
producing 8 trigrams that can be matched to sets of correspondences through a complex
reasoning). Such M6 maps may describe 6 different forms, perspectives, types, stages, or
styles, on an equal par (eg the 6 lines or ‘positions’ of change in the trigram). Sometimes
there is a clear desire similar to the post-modern aim of modelling great diversity and to
offset the devaluation of some styles or stages to the benefit of others. Sometimes there
seems to be an aim of integrating both the ‘advanced’ and the ‘primitive’ together with a
diversity of other intermediary ‘forms’, into an integrated whole, or to simplify. Such a
whole is often viewed as still having a beginning and end, but where these are placed in the
model depend on perspectival bias (eg individual type, or general conditions as in the I
Ching). Sometimes, the ‘6’ appears to be a later addition. The following example is a
modern rendering of a myth probably derived from oral tradition. It includes a vocabulary
that is not so ancient (eg ‘small’, ‘bottom’):

'We will have to have land.' Then he called k'uik'u, a small duck. He said to it: 'Dive
down and bring up earth.' The duck dived, but did not reach the bottom. It died. The eagle
called another kind of duck. He told it to dive. This duck went far down. It finally reached
the bottom. Just as it touched the mud there it died. Then it came up again. Then the eagle
and the other six....' (Myth from the Yauelmani Yokuts in Eliade 1996 – full text in
<Appendix F1>)

Frameworks including the 6 (symbolised here as ‘M6’ models) appear to be of more recent
vintage than those not involving 6. They are ‘advanced’ models that allow complex
structuring or functionalising, integration or unification, and conventional logical reasoning.
M6 models do not seem present in texts written before about 500-650 BC. Frameworks
based on only 2 and 3 (without 6), are more widespread in the oldest archaic records of then
current thinking, and in texts related to what was already ‘ancient’ in archaic times:

'The ancient sages made the Book of Changes thus: [...] To Heaven they
assigned the number three and to earth the number two [...] By thinking through the
order of the outer world to the end, and by exploring the law of their nature to the deepest
core, they arrived at an understanding of fate.' (I Ching, Shuo Kua, Wilhelm 1989
p.262)
The geometric source of my notation ‘N2d-‘ and ‘N3p-‘ (see <Many perspectives>), compared to the graphism of the I Ching, can help to understand the value of imaging in such models. The ‘2’ that I modelled with 2 dots and a line (geometric orientation) can also be represented as a line that is broken or not (a logic viewpoint of the I Ching). The ‘3’ that I modelled with 3 dots and a circle (geometric circular motion), can be represented as 3 lines ‘read’ in sequence to denote stages (I Ching: the 3 lines represent ‘Moving’). These are abstract representations (e.g. point, line, arrow, or line and sequence), more sophisticated than the animated imaging of nexial-topology. The latter is immediate, although it can be translated into geometry. Such abstraction also produced, in ancient times, a kind of thinking that may be recognised as ‘systemic’ thinking, as did Lin (2000) in the Tao Te Ching:

‘Related to the concept of layers of systems, if one ignores the parts of [sic] members of the systems, then the structure of relations can be seen as stratifiable. This idea is contained in chapter 62: "When the great Way was forsaken, there was humaneness and righteousness; when cunning and wit appeared, there was great falsity; when the six family relationship[s] lacked harmony, there were filial piety and parental kindness; when the state and royal house were in disarray, there were upright ministers." ’ (Lin 2000)

Despite their inclusiveness, the M2 (a duality or parity), M3 (a modal trinity), and M6 models bring many deeply confusing questions (see <Extract F9/ Deep confusing questions>), and much explanatory difficulty of phenomena deemed ‘low’. The origin of these questions lies in the translation of the simpler type of model, the M4 maps, which do not include both origin or end, into the complex models that do, and in the translation of nexial-topologic imaging into the Sc-naturalistic and H-realistic terms of perspectival models.

In texts from antiquity, relating to health, the Western mainstream M4 framework is that of 4 Elements and corresponding qualities (e.g. hot-cold-wet-dry). In China, the equivalent framework is an M5 model (5 Elements and 5 stages of change). These usually describe how to ‘establish’ or ‘stabilise’, but have no model for instability (see <Extract F4/ Syndromes of instability> and <Health and illness>), of which they offer either a negative evaluation for normal living (‘unstable’ person), or a positive one for spiritual living (strong ‘spirit’). Both are attributed to a random nature of instability (chance, fate, or destiny). The M4 and M5
maps, and M6 ‘complete models’ (or models of ‘perfection’), produce ideas such as the
‘Fall’ from Heaven, ‘The Pit’, the ‘Below’, and the ‘curse’ by the gods, all related to
instability. These include, in archaic texts, the problems of the spreading of disease, increase
of damage to children, ageing degeneration, and increase in needs and pain/suffering, despite
more food and material safety. Also included is the ‘normal’ female health damage from
pregnancy. Most of these are considered inevitable aspects of ‘being human’, and often
ignored in modern medicines. To tackle these universal problems and evaluations, another
approach to the universal model of ‘The Earth’ is needed – that of ‘global’ images.

**Vocabulary: imaginal words of The Earth**

The ancient but sophisticated M4, M5, and M6 models are confusing if understanding is
mediated only by words, because of linguistic shifts in meaning and lack of match in
correspondences. Yet, the words they use also have an imaginal value. The symbols refer to
characteristics that do correspond and belong to the same basis, that of ‘The Earth’ –, wether
it be projected into flat, spherical or hyperbolic geometry, a ‘Land’ that is bent or not. These
can be treated as ‘generic’ maps, as H-‘meta-model’, or could be called Sc-‘theoretic’ in the
same way as in the following:

‘The quantum Turing machine and the quantum cellular automata models are equivalent
to the [common quantum] circuit model and, therefore, face the same difficulties. These
models, inspired by the philosophically extravagant many worlds interpretation of
quantum mechanics, assign specific information to the qubits, postulating gates that
implement the unitary transformation representing the solution to the computational
problem. The quantum circuit model converts the physical problem to a circuit theoretic
form but it does not map all the physical constraints required by the laws of quantum
mechanics.’ (Kak 2006 p.2)

The symbols still found in secret, sacred, hidden, spiritual, and arcane traditions are part of a
common core of culture (see <Endnote C6\Core culture>). They are nowadays considered to
be (in the human domain) realistic metaphors and (in the scientific domain) naturalistic
analogies (eg ‘copied from nature’, said already the *I Ching*), but there is more to them than
this. This language leads to developing the topographies of ‘advanced’ models, geoMetries
of experience, and geoGraphies of explanation, as well as arcane knowledges. This
development of symbolic explanation or description exists also, is still active in modern culture: in our linguistic metaphors and dreams, but also in ‘advanced’ sciences (as in the sciences of complexity, threshold, chaotic emergence, quantum jump) and in theoretical models. The texts of this dominant culture appear to newly create this sort of imaginal language, but strikingly similar images and words exist in medieval texts on Chinese ‘inner alchemy’, and in archaic texts dated around 850BC, particularly biblical prophetic language as well as in the oldest Chinese texts. The ‘apocalyptic language’ is said to have progressively become extinct (by about 100AD) in Western philosophical, medical, religious, and scientific awareness, reappearing only occasionally in medieval religious visions. The archaic language became, in both East and West, the exclusive ‘secret’ language of the core of spiritual traditions, whose teachings are traced to those archaic times through teacher lineage. This type of vocabulary is rare and much altered semantically in texts from after about 500BC. The vocabulary that is most similar to modern science is found in the oldest records of prehistoric myths of the old oral tradition. The words used have an uncanny characteristic of evoking exactly the same imagery in the mind as those found in contemporary papers in the journal Nature. Most notably, those reporting findings related to topology-based modelling, use words such as the branes, braids, strings and bending of the fabric of space-time in physics, the twists of DNA, and projections of embryology, etc., which are very similar to the old words. The following example combines topographic words (blanket, land, bent, shield) with words characteristic of ‘complete’ models derived in later antiquity (beauty, form, gather, return, above and below – for primary and secondary –, unroll – for unfold–, six). Thus, it expresses at least two orders of nexial-topologic deployment:

‘Many strange thoughts are forming in my mind, beautiful forms of birds to float in the Above…’, Tawa intoned. One by one Spider Woman [magic of Below] shaped his Thoughts and made them take form. They laid a white woven woollen blanket over them, and made a mighty incantation over it, and soon the figures stirred and breathed. Spider Woman gathered …while Tawa bent his glowing eyes onto them. And now I shall turn my blazing shield upon the Endless Waters, so that the Dry Land may appear. And this day will be the first day upon Earth. And there shall be no new things made by us. Those
things we have made shall multiply. I will make a journey across the Above each day … and return each night, said Tawa. Now I shall lead all these created beings to the land that you cause to appear above the waters, said Spider Woman. As time unfolded there followed [the] Ancient of Six.’ (summarised from an Indian Hopi creation myth, in Leeming 1992)

Such stories tend to be interpreted in terms of general development of the world, a time sequence, or of spirit activation. Nexial-topology gives them a different meaning, more global (undifferentiated) and less localised (non-local’).

**Nexial-topologic vocabulary** (<Appendix A\ table 9>): *textile, texture*

Such stories and texts led me to collecting vocabulary, to imaging the ideas that are usually considered metaphorical or analogical into graphic drawings, to find some kind of order… only to find that Newton had done a similar study. Table 9 (<Appendix A\ Nexial-topologic vocabulary>) is a short selection drawn from some 28 pages of classified words, introduced by a discussion of the vocabulary. The words were found in over 20 translated ancient Chinese works, including two versions of the I Ching, several works on Chinese inner alchemy, some books of mythology, four different Bibles. Some came from my many small etymology studies. The sampling of vocabulary is aimed at demonstrating the possible topologic turn of mind behind many ancient frameworks and myths of the ‘emergence of man’ and ‘creation of the world’, and at the source of the distinctions of ‘human’, ‘life’ and ‘natural’. Such stories are mostly ruled by thresholds and quantic appearance or occurrence, and contain much topographic vocabulary that can be derived from them. I also collected, but less formally, vocabulary that relates to modern ideas of networks, webs, ‘fabric of space’, building-up, transport, interaction or feedback, etc. These ideas (and practices) are derived from an overarching topologic notion of ‘texture’, a word still used in Chinese acupuncture, and of ‘textile’, which can be traced through etymology. For example:

‘The term *jie*[^3] recalls the idea that the *qi* is comparable to a twisted thread, forming in the body a real net of vertical and horizontal threads. This is why it is said that the *qi*… can

[^3]: [‘Le terme *jie* renvoie à l’idée selon laquelle le *qi* est comparable à un fil torsadé, formant dans le corps un véritable filet de fils verticaux et horizontaux. C’est pourquoi l’on dit que le *qi*… peut se nouer (*jie*), en général sous l’effet d’une lutte entre deux éléments. *Yunjie* caractérise le processus de formation du pus.’ (Despeux & Obringer 1997 p.100)]
turn into knots, generally as the effect of a battle between two elements. *Yunjie* characterises the process of formation of pus.’ (Despeux & Obringer 1997 p.100 – my translation, French text in footnote).

‘The term ching is of textile origin, and signifies the warp threads of a web and their adjustment. An easy application of it is to denote what is regular and insures regularity.... The term shu simply means writings or books: the pencil speaking.’ (*Shu Shing*, Waltham 1971 p 249)

‘The classic problem of the sanjiao’ meridian’ (Zito & Barlow p.86 – see <F13 San Jiao & inversion>) is linked to notions of unfolding, penetration and dispersion, skin and texture, surfaces and openings, etc. (Zito & Barlow pp.103-130).

The texture-textile notion is also present in the archaeological record from prehistory. An exhaustive and unconventional source I found on this is by Rudgley (1999).

**Testing a nexial-topologic interpretation: ‘swelling’**

Another sector of vocabulary that is more directly relevant to my study of chronic illness is concerned with inflammation and ‘swelling’. Re-using a previous example, in the following passage, I recognised descriptions of bodily sensations: up, down, (in-)'dying’, ‘coming up again’, water, swell, spread:

‘Dive down and bring up earth.’ The duck dived, but did not reach the bottom. It died. The eagle called another kind of duck. He told it to dive. This duck went far down. It finally reached the bottom, just as it touched the mud there it died. Then it came up again. […] Then he set it in the water and it swelled and spread everywhere, going out from the middle.’ (Myth from the Yauelmani Yokuts in Eliade 1996 – full text in <Appendix 1>)

From a philosophical-theoretical viewpoint, such stories can be interpreted as topologic deployments, usually interpreted as general modelling of ‘the world’ as humans see it (‘the physical world of humans’). The modalities, quantic jumps of spirit-activation, and projective appearance of Man, Nature, and Life, as interpreted classically (modern way), represent a modelling of the *development* of self, mind, psyche, and spirituality. I used this to test a topologic interpretation of the developmental and time-historical sequences. One passage makes the topologic nature of the thinking particularly visible:

‘It shelters the heavens and supports the earth,’

Extend beyond the four points of the compass,
And opens up the eight points of the compass [...] 
Flowing from its source it becomes a gushing spring,
What was empty slowly becomes full;
First turbid and then surging forward,
What was murky slowly becomes clear.
Hence, stand it up vertically, and it stuffs up the heavens and the earth;
Lay it horizontally on its side, and it fills the four seas.
Dealing it out it becomes endless, yet is without morning or evening.
Unroll it, and it blankets the six directions;
Roll it up, and it is less than a handful.
Compact, it can stretch out;
Dark, it can be bright. [...] 
It is the thinnest of gruels, the finest and most subtle texture. (p.61)
By virtue of it, mountains are high;
By virtue of it, abysses are deep;
By virtue of it, animals run;
By virtue of it, birds fly;
By virtue of it, the phoenix soars. (p.63) [...] 
Thus, with the heavens as his canopy, there is nothing that is unsheltered;
With the earth as his boxframe, there is nothing that has no conveyance; (p.71) [...] 
He knows the lay and the boundaries of the various divisions and quadrants of the cosmos. [...] 
Hence, there is nothing you can do about the world.
You can only follow what is natural in pushing the myriad things ahead. [...] 
The likeness of the sound and shape is attained without fuss.’ (p.73)
Observe what is being accumulated, and you will know which direction it is heading for: fortune or calamity. (p.97)
[Water] is without private likes (p.103) [...] 
Following the water gauge and adhering to the plumb line,
He does in every way what is fitting to the circumstances. (p.111)
‘Vaguely they feel as if something is missing
Or as if pining after something lost. [...] (p.119)
If we seek for the cause behind this, we cannot get a hold of it,
Yet this is doing injury daily to one’s vitality. (p.121) (Yuan Dao, in Lau & Ames 1998)
If this modelling represents globally the reality that humans experience, including the
‘physical world’, then it must also be able to represent the specifics of the body-brain and
health – the ‘history of the body’; it is the symmetry human ≈ scientific that leads to
opposed directions. This is exactly what I intuitively read in all these texts: reference to bodily sensations, signs and signals. This was the case because I lack any education in exegesis and was not aware of the accepted cosmological implications, which I discovered later but did not explore in depth. To me, these stories tell of the degeneration of human health, sanity, behaviour, even of the sense of safety, and of sensations in the body. This is perfectly consistent with my theoretical framework: these stories are a ‘negative development’ that translates in conventional perspectival terms, into negative value of degeneration (my reading); it is combined with a ‘historical’ sequence of cultural and mental generation and positive development (others’ reading) – that is, they rePresent a topologic ‘deployment’. I interpreted this in terms of the physicality of body and environment because this was my current concern. The ‘deployment’ appears positive for the mind, psyche, creativity, civilisation, culture – a generative development –, but it appears negative for the body and ‘humane’ behaviour – a degeneration of health, sanity, and physical environment.

In the following extract, a number of words recall nexial-topologic imaging, and the vertical axis of brain-mind activation:

‘Before the World was, we were all within the Earth... Mother Corn caused movement. She gave life.... we moved towards the surface. The being is become human! ... Mother Corn commands that the people ascend to the surface... Mother Corn has gathered them together, they move half way to the surface... They have emerged to the waist.... Mother Corn leads them from the East towards the West. Mother Corn leads them to the place of their habitation... All is completed All is perfect!’ (Mother Corn in Eliade, Mircea, 1996 – full text in <Appendix F2>)

In myths, what is, topologically a ‘creation of the World’ corresponds to what is, from an objective viewpoint, new appearance of ‘Nature’ or the ‘physical world’, and corresponds to what is, from a subjective viewpoint, new ‘existence’ of the ‘Human’, or occurrence of ‘Life’. Brain activation gives the ‘life’ of the head and the capacity to ‘SurVive’ physically (thanks to the ‘drive’). It makes us creative problem solvers and goal seekers out of us, inventive, intelligent, ‘human’ – it gives us specific-general thinking ability. A first-stage activation also partially protects the body from disease by enlisting brain central control of the body (see <Extract F6\ Brain central control>) and its compensatory capacity, but does
not prevent low-grade ‘damage’. In my empirical observations, brain activation, also triggers immune system-related signs and signals such as a violent sneezing, a histamine flush, localising eruptions, and various kinds of secretions. The latter is consistent with the widespread mention of mud, wet, or floods in many primitive myths of the ‘Creation of the world’, and the culture-independent warning about a ‘dying’ that correlates with activation, violent or sustained. (Low-grade damage feels like ‘in-dying’ – see <EEs>.) These factors only find metaphorical explanations, in modern or ancient exegesis, remote from actual human experience, or physical rationalisations related to climate change, external to the body. My study of all perspectives on water showed that these approaches ignore what is called ‘internal’ to the ‘body’ in modern parlance, particularly related to flows and circulations of water, fluids and secretions, (see <PPT1 Body>). This is unlike factors of dry and hot, wind and burning, which are known to have direct correlation with illness and disease (eg ancient notion of ‘wind disease.’). Sensations are also used as indicators in healing systems, especially those evaluated and named pains (see for example Kundalini in <C6\ Core culture>, <EE17>, <EE16>, <Extract F11\ Red> and EE15>) [but not the un-evaluated ones, for example related to gravity or ‘shrinking’]. A nexial-topologic interpretation of the pre-archaic stories could shed light, in particular, on the association of water and secretions with the San Jiao meridian, and its connection to immune system ‘defence’ or lower-grade activation.

Among the stories and archaic philosophies I reviewed, the oldest are the closest to a nexial-topologic vocabulary and have meaning that is more global (less differentiated, non-local). Their formulations are closest to what can be interpreted as topologic ‘small deformation’ or distortion, and approaching limits. Later texts (later than about 650BC) tend to be fully conventionalised, perspectival and biased, either topographic or nexialist, and without topologic modelling. They require the oversimplified-complexified notions based on a general-specific, or systemic conventions of framing (eg self-world or nation-others). They use dual-polar notions (eg unity or union, harmonics or harmony), or ‘generic’ notions of
type or category that are generalisations from ‘encultured’ experience (especially the
established-stability called ‘peace’, and being morally ‘well-behaved’ or ‘upright’).

**Analysis of an example: The Yi and the Chi**

Earlier texts do not use these frames, vocabularies, and ideas. For example, in the *Shu Ching* (Part II Documents of Yü, section The Yi and Ch’i. in Waltham 1971 – the text is available on line: Legge 1879), the text is normally interpreted as history and politics because of statements like this one: ‘Think, O Sovereign. It is yours to lead on and originate things.’ (Waltham 1971 p.35) It is considered a dialogue, involving a king who seeks counsel from several interlocutors, which ends, according to Waltham, with ‘Shun and Kao Yao sing[ing] to each other on the mutual relation of the sovereign and his ministers’ (op.cit. p.30). Each speaker uses a different vocabulary set, in a progressive shift. This political interpretation appears satisfying, but its leaves one confusing question:

‘This document takes its title from the names of two worthies, Yi, who was [king] Shun’s Forester, […]and] Ch’i [who] was minister of Agriculture. Neither Yi nor Ch’i appear as interlocutors in this section, and it is difficult for us to understand why the document bears their names.’ (op. cit. p.30)

Introductions such as ‘X said’, ‘Y replied’, etc., often added by ancient compilers, compel
the interpretation of the text as a dialogue. Without this anthropomorphism, the title can now
be read as an abstract title, or a descriptive theoretical title – “the Yi and the Ch’i” –
concerning two conceptual stances of explanation, two frameworks. With this approach, the
presumed dialogue and counsel to the sovereign now looks more like a series of different
explanations of the same undifferentiated human situation, according to different
developments of perspective. Without the historical, politico-moral background,
anthropomorphism has little place. As a whole, then, the text can be interpreted in terms of a
deployed history of health, without distinguishing the individual from the collective or body
from mind:

‘The inundating waters seemed to assail the heavens and in their vast extent embraced
the hills and overtopped the great mounds, so that the people were bewildered and
overwhelmed.'
I mounted my four conveyances and all along the hills hewed down the trees; at the same time, along with Yi, showing the multitudes how to get flesh to eat. I also opened passages for the streams throughout the nine provinces and conducted them to the seas. I deepened the channels and canals and conducted them to the streams; at the same time, along with Ch’i, sowing grain and showing the multitudes how to procure the food of toil in addition to the flesh meat.
I urged them further to exchange what they had for what they had not, and to dispose of their accumulated stores. In this way all the people got grain to eat and the different states began to come under good rule.” (Shu Shing, Waltham 1971 p.31)

Edition author’s note on ‘conveyances: ‘Legge [author of the original translation] quotes from the Shih Chi, Historical Records of Ssu-ma Ch’ien, about these four conveyances.
Yü says:
“To travel along the dry land I used a carriage;
to travel along the water, I used a boat;
to travel through miry places, I used a sledge;
to travel along the hills, I used spikes.”
‘The sledge is thought to have been like a sieve, made to slide easily over marshes;
Spikes were thought to have been shoes fitted with awls underneath to prevent the feet from slipping.’ (Shu Shing, Waltham 1971 p.31)
The beginning of this passage fits a staged description of methods to meet needs and ways of coping with flood and overwhelm, including Yi method and Ch’i method, ‘passing’ (a threshold), and ‘pushing’ further. Diverse perspective correlate with different methods. The result is that everyone eats grain and human life is regulated. This result would be a rather fit description of modern normal living, and of dominant medical advice (eg the bread fibre that ‘keeps you regular’). Compare this to the last line of this passage:

‘Louis Pasteur introduced the concept of molecular chirality in 1848, when he observed that crystals of the chemical sodium ammonium tartrate tetrahydrate can form left-handed and right-handed structures. Since then, chirality has been the cornerstone of several scientific advances, from the deduction that carbon atoms possess a tetrahedral arrangement of bonds, to the realisation that terrestrial life-forms have evolved to make use of right-handed sugars and left-handed aminoacids.’ (Raval 2003)

Modern advances and discoveries have the same shape as the ancient ones, and the same conclusions. The beginning of the Shu Ching story (start the cycling again) would fit ‘advanced’ manifestations in either human or scientific realm, and the story would be a
‘monitoring of demise’. In particular, it could describe the epidemics of becoming fat and bodily wasting, thanks to a diet of processed carbohydrates and denatured meat, the bewildered overwhelm of those afflicted (who follow cultural enticement on feeding, especially children), and the secretions that go with head colds or other diseases. (The head, tree, and mountain are equivalent to the ‘heavens’ in terms of nexial-topology). These topographic observations suggest a third way of looking at this story. The above have respectively presented “the Yi and the Ch’i” conceptual or theoretical stances of explanation and related perspectival developments, and as practical methods, evaluated by monitoring results. They can also, in a nexial-topologic interpretation, be associated with the vertical *Axis Mundi* and *Primus Moverns* (see chapter <Nexial-topologic deployment>), and considered to express them. The “Ch’i”, now often interpreted in term of ‘life spirit’, could be a name for *Primus Moverns* or activation. The “Yi” would then be a name for vertical *Axis Mundi* or projection or direction. This particular story does not explain what they mean, or where they come from; therefore such meaning is as valid as any perspectivally derived meaning, if the story makes sense. It is in this way that I read the text, obviously differently from the translator’s ways, and that it made sense to me. “Yi” and “Ch’i” are very ancient notions, although these specific names are not.

‘Wind (*Feng*) was the conceptual ancestor of Qi (*Ch’i*).’ (Zito & Barlow p.34) The imagination of winds” (op. cit. p.23) is considered a major instrument in the development of concepts of the ‘body’ as a system that has a boundary” (op. cit. p.131)

The image of ‘wind’ is addressed below. On this nexial-topologic basis, the story is consistent with another one that is closer to modern thinking in medicine. I read it as relating to the role of exercise, brain and mind in health and to the idea of pushing for human performance:

‘When the members work joyfully, The head rises grandly;
And the duties of all the offices are discharged […]
When the head is intelligent, The members are good;
And all affairs will be happily performed […]
When the head is vexatious, The members are idle;
And all affairs will go to ruin!’ (Shu Shing, Waltham 1971 p.35)
We are told that physical work-out sustains the brain, and then the body parts can do their job, that the mind ‘s attention keeps the body working well and the self performs; and that failure of brain-mind-self control ‘causes’ fatigue, ill health, and the working capacity and social life are ruined. Yet, using the interpretive basis of practical health and body appears completely absent in modern interpretation of texts such as the Shu Ching or the Bible. These song stanzas and other aspects of the story, so physically meaningful to my uneducated reading, and those related to music, seem mysterious to the modern mind:

‘And then abruptly, K’uei, Shun’s director of Music appears… If the Yo Chi, Book of Music, had not been lost, we could understand a great deal more about this.’ (Waltham 1971 p.30)

Song and religious praise, it seems to me, represent a widespread framework, characteristic of the early archaic period (Bible, Indian yoga, China). They correlate with notions of resonance or harmonics (the ‘Word of God’ in the Old Testament, seed sounds for mantras in India, harmony and ‘the idea of resonance’ in Chinese antiquity [Le Blanc 1985]). All three cultures seem to have determined that rising and rising again, and topographic channels, canals, tunnels, staffs, rods, spikes, land, building-up, etc, (see table 9) were apt to bring ‘harmony’ or ‘peace’, health, and performance ‘to all’. This collective determination also seems to be a cultural ‘choice’ repeated periodically throughout history. Nowadays, we reformulate this in various, perspectival ways: as waiting for the hormones of puberty to kick in and resolve childhood illnesses, as relying on the hypothalamus-thyroid-adrenal axis and brain-central-control, as reactivating the ‘healthy sex drive’ or ‘survival drive’ for health (or ‘will to live’), as voluntary ‘choice’ to ‘work at’ health (lifestyle choices and fitness training, mental choices to not react and to learn about health’ (intellectual education, especially about stress), psychological or spiritual self-development or evolution, and as ‘self’-stimulation, sometimes even using brain stimulating technology, and often simply using unconsciously addictive food stuffs (‘self-medication’). The above and other text passages are consistent with an inversion I observed during my experimentations. Activating the brain (up to head) for intellectual work, using stimulating foods to sustain this activity, triggered immunological effects of damage (down) along the spine (as well as other metabolic, and
cognitive/emotional, effects). The results are not positive developments for health, despite apparent short-term and limited amelioration. In the local-case studied in this research, these effects do not resolve illness, bring ‘good members’, or result in ‘happily performing’. Instead, they promote temporarily extreme high-working and high-focus capacity, that quickly becomes uncontrollable, resulting in pain, low-grade but long-term damage, exhaustion, as well as deleterious ‘nexial resonance’ that has global effects in the ‘lifeworld’ (see <Endnote C9\ Nexial resonance>). It is worth noting that a ‘physikemorphic’ interpretation of this part of the Shu Ching that would be limited to physicalist health and body, would be too limited a projection, just as the one offered with the text (they are symmetric) The nexial-topologic reading uses the health & body basis, but is not limited to the ‘physical’. It can bring out certain knowledge of consequences (physical, as well as global), contained in such ancient texts, that is currently ignored.

Another ‘physikemorphic’ projection consists in translating the ‘dry land’ image mentioned in this Chinese text into naturalistic analogies (eg climate or geography). This expression and image is widespread in the Bible, as well as many Creation myths. Taking account of its meaning, extended to health and body, as well as nexial-topology, would extend current interpretations. Compare this with the following extract, in which systemic physical ‘damage’, which I formulate as an ‘in-dying’ (see <D3\ Signs of dying>), is reified into a staged ‘process’ of physical ‘death’:

‘After lapsing into unconsciousness, the four gross elements in the body begin to disintegrate, one by one. First, the earth element loses its cohesion as organic matter, resulting in the loss of inner body-consciousness. Then the water element begins to dissipate, causing the mucous membranes to lose moisture and the throat to become dry. When the fire element begins to disintegrate, the body becomes cold, losing its natural warmth. Finally, as the air element dissolves with the final exhalation of breath, the soul leaves the gross body and is carried away in the ethereal body, concluding the death process.’ (Rajarshi, 1993 p.91)

In this passage, the correspondences are consistent with my observations of internal sensations of ‘feeling not well’, and with the conventional explanations I attached to them (eg Element ‘earth’ associated with integrity and physical ‘substance’ in the body). The
stages described correspond to four aspects of a single ‘state’ I know well, because I spend much of my life that way. I have reproduced many times, during this project, the process of activating brain central control that creates it, and stopping it. I observed many concomitant sensations and symptoms such as swelling (systemic, and all along breathing passages, starting from sphenoid sinuses in the head, and nostrils – see <PPT1 Body>). The characteristic result is low-grade systemic damage (including to the brain) – a loss of ‘systemic integrity’ (in the ‘substance’, but also operationality under stress), loss of internal bodily sensation, and a low general mood linked to a sense of ‘in-dying’ (see <D3\ Sign of ‘dying’ and ‘in-dying’>). Notions of dry and wet (or water, flood, etc), as found in archaic texts, are less differentiated, than the more varied and specific modern meanings of these words. They are global notions, and form the core of the archaic frameworks and of the Elements.

**Global notions**

Notions such as ‘rising’, ‘swelling’, ‘dry’, ‘land’, ‘sky’, ‘water’, ‘weaving’, ‘mountain’, ‘pole’, ‘movement’, ‘spinning’, ‘flowing’, stone, etc, are often considered abstract (and some as concrete). For instance, water, sky, and the Elements can be construed as generalities (eg water as ‘fluid aspect’ of ‘reality’, sky as an ‘ultimate’, as in heaven or ‘the sky is the limit’). Few authors study them. Some, concerned with archaic origins of cultural symbolics, find them in religious traditions and cultural forms (eg Eliade 1954, 1961, 1974, 1978 and Feuerstein 1995). Others detect them in the artefacts of culture themselves (eg Rudgley 1999, in the Stone Age archaeological record), or in language (eg Allen 1997 analyses one, water, in Chinese language and spiritual culture). They are often also construed as analogies ‘taken from nature’, analogous to concrete realities (eg ‘wind’ as a weather item, or the Elements as material substance making up the physical world). They exist also in ‘visionary seeing’, and in intellectual development of the model-making capacity. In the colloquial expression of daily life (eg ‘the pressure is rising’, ‘getting into a spin’, the ‘shape of things’, the ‘flow’ of what is happening, ‘this is my turf’, how a situation ‘shapes up’, ‘it is spiralling up out of control’, ‘the “too hard” basket’, etc.), it is difficult to interpret them as ‘abstract’
because they correspond to very practical experiences, or as concrete because they do not involve physical objects. This is actually where I first studied these notions – in my own and others’ speech.

**Piaget, and the hidden learning of conventionalised topology**

These unclear notions can also be considered, more simply, as ‘undifferentiated’, or global. Piaget (1951) studied some of them, by asking children questions. Just as topology and the imagery that accompanies global notions appear inherent in collective culture, they also seem inherent in the individual. For instance, a seven-year old self-reported to me a sudden insight about ‘the world’ (not heard from an adult, I believe, but arising from enculturation): ‘It’s all inter-woven’. Piaget offered a developmental view of this kind of vernacular in children. Although his analysis of the children’s answers to questions about the sky is in the same terms of magical and religious symbolism that other psychologists or anthropologists use, he follows the shifting symbols during cognitive development:

‘The youngest children (3-4) usually say that the sky is made “of blue”; the blue then later becomes either of stone or earth or glass or of air or clouds. But during the first stage, the sky is almost always conceived as solid. [...] The sky at first gives the child the impression of being a ceiling or a solid arch and likewise of having been made either by women or by God. [...] During the second stage the child makes an effort to find a physical explanation for the origin of the sky. The “efficient cause” of the form of the sky thus ceases to be artificialist. But the matter of which the sky is made remains dependent on human activity; the sky is of clouds and the clouds have been produced by the chimneys of houses, boats, etc.’ (Piaget 1951, p.288, my italics)

Stone and earth also take, in other contexts, the name of wood (eg the Chinese Wood Element). ‘The Blue’, considered here as a ‘substance’ like the Elements, is less differentiated than ‘matter’, in the same way as I do not differentiate structure from function when I speak of the ‘wasting’ of body ‘substance’ in what science calls systemic degeneration. The ‘efficient cause’, a humanities notion, is called ‘efficacy at a distance’ (Piaget 1951 p.392) – a nineteenth century scientific idea, related to the ‘ether’. The children do not yet discern matter from the human realm, and they often consider animals as ‘people’ just as much as human persons. The ‘efficient cause of the form’ can be understood as a
‘whence from’ or a ‘what originates’ it, what ‘makes’ it ‘appear’, how it is derived. Hence, it can be related to topologic modelling. In terms of imaging, a ‘solid arch’ or ceiling (or sky) is a topographic image, like a half-sphere, an inverted cup, or a rounded cone, which are also common images. Together, these fit a ‘similarity’ or ‘likeness’ to a forming boundary (another image is the curved shield), as much as it does a naturalistic analogy for a ‘rising’ non-closed container. Common realistic images for this half-container are the crucible and the bottle (in Chinese inner alchemy), which also exists in modern scientific topology: the Klein bottle; the inversion is typical of the symmetry-inversion of the scientific ➞ human domains.

Explanations such as Piaget found given by the 3-4 year old child, come in the form of language and number, and become established through learning:

‘During the third stage the child succeeds in freeing himself from all artificialism. The sky is made up of air or of clouds. It has come into being of its own accord. The clouds of which it is made are of natural origin. During this stage, moreover, the idea of a solid arch is in course of disappearance.’ (Piaget 1951 p.289, my italics)

What would the understanding be like in a younger child? For obvious reasons, we know less about this than about later development, but could observing gestures and body language help? Perhaps, this ‘freeing from artificialism’ could be seen, in reverse, as learning to construct realistic meaning for humans, and naturalistic imagery from undifferentiated notions such as ‘substances’ that can be ‘Blue’, or ‘sky’ as a 3D arch-boundary that is still open. The development of the imagery found in these children can be viewed in terms of topologic deployment of ‘normal’ notions (physical, objective, or based on the human self, anthropomorphic, etc) — of learning how to conventionalise for perspectival framing. Piaget quotes a question and a child’s response:

‘—Why doesn’t the sky [made of big stones] fall? — Because it fell, it would tumble on the houses and people would be killed. — What prevents it falling? — It is well stuck — Why? — Because the slabs of stone are fastened to something. But it also happens that the sky is regarded as a crust of hard clouds which prepares the way for the explanations of the second stage.’ (Piaget 1951, p.288, Piaget’s italics)
A logic or reason-based question such as ‘why’ (involving causality) brings automatically the problem of what it is that glues or of what is the ‘something’ that the sky is fastened ‘to’ (and definition). With it also come topographic notions such as the thick surface (crust), which reduces a 3D ‘arch’ to a 2D surface with sides. The sky is a primitive notion related to eschatology (it is a limit, an ‘end’). In French, there is a saying: ‘the sky is falling on my head’. It expresses such overwhelm that ‘the entire world’ seems to break down and fall apart, crushing the person. It is attributed to the Gauls of late antiquity. This is neither naturalistic, nor artificialist, but involves a ‘lifeworld’ and a global phenomenon (similar to ‘in-dying’) that they feared. With nexial-topologic modelling, such strange statements become clear. Britton (2006) teaches topology to children, and considers it inherent in experience:

‘We grapple with topology from the very beginning of our lives! […]like the] Molière character …who discovers that he's been talking "prose" all his life and didn't know it, since no one taught him the word and its meaning. […] Edward Kasner, American mathematician and grandfather of the five-year-old boy who named "The Googol", once said that he found it easier to teach topology to tots than to grownups, because they "haven't been brain-washed by geometry"!'; ‘Small children, armed with pencil and paper, often execute what adults call "scrawling" but the topologist calls "a tangle"'. (Britton 2006)

The notions of entanglement, or binding, are of import in modern theories. They are also part of a very common kind of experience, in both adults and older children. They correspond to a sense of being bound, constrained, limited, imprisoned, ‘stuck’. By contrast, undoing that sense is at the core of the widespread and multi-form quest for freedom, independence, liberation, enlightenment, or immortality, for the perfected body or completed soul, as well as the scientific dream of the perpetual machine or the free system. Entanglement is not the first stage of topologic derivation, in nexial-topology, nor necessarily the essence of or inherent in all living conditions. Entanglement, or binding, is produced by deployment.

**Using nexial-topology: properties**

Whichever way the particular description based on the 4 directions are split (sequence or corresponding aspects), the frameworks of the East, West, South, North, play an important
role in pointing out the different effects of ‘activation’ or ‘projection’ on males, females, and children. That of ‘The Earth’ points to equivalent effects of normalisation, but not the same (either establishment or stabilisation). Further deployments, often considered spiritual, reinstate the difference, with extremes being the same. The undeployed nexial-topology appears to be the same irrespective of which type of ‘human’ (or non-human). Access to this ‘native gauging’ and to the ‘powers’ of primitive ‘Naming’, ‘Number’, and imaging symbol, or advanced intellectual and psychic ‘powers’, is governed by the order of deployment.

My understanding of the independent four frameworks and of the fourfold ‘The Earth’ is more detailed for aspects concerning the body and health. I derived it (dry-hot-wet-cold) from experimentation and physical sensations. It is only after I discovered (recently) the scholarly exegeses of the Bible and of the oldest Chinese texts that are considered puzzling, that I realised the vastly divergent interpretations given to ‘wind’ and other such notions. Using the basis of anthropomorphic interpretations and naturalistic imagery (eg in the I Ching), produces nothing like what I saw in them. Over the course of two years, my studies of the many frameworks based on the Elements, tastes, colours, etc., and ancient texts, was encouraged by my success in obtaining confirmation from etymological roots, particularly of medical terms. I sought to investigate the generalisability of the sensations I observed (did anyone ever relate them to illness and ‘state’ as I did?). This practical basis helped me to ascribe meaning to the texts without relying on modern interpretations. The experimental observations also corroborated certain descriptions in archaic texts that are not found in modern literature on health. I have gathered some of them in <Extract F10\ Left-Right>, <Extract F11\ Red>. The sensation of ‘rib pain’ (see <Extract F17\ Anatomy notes> and <Extract F4\ Syndromes of instability>) is particularly fascinating in its implications for ‘male-based’ Western culture and heart disease. Many of these observations appear to baffle modern medical thinking, although some are known in practice. For example, physiotherapists know of pain shifting sides, but medical science does not provide them with an explanation; a widespread pain of ‘burning’ is described in Kundalini literature, and the
word ‘burning’ is common in the Bible\textsuperscript{4}. Spontaneous bodily motions (in extreme forms) have an extremely rare description as ‘spontaneous yoga’ (<Endnote C8\ Spontaneous yoga>), and in medieval weird sicknesses or madness. The fast ‘wasting’ of the female body without obvious cause, but related to some form of activation, which English medieval women called ‘white fever’, is now described as various psychosomatic diseases or being ‘hypochondriac’. The medical puzzle about it does not seem recent (King 2004 discusses it in the context of ‘Chlorosis’ or ‘Green sickness’ – see <Extract F4\ Syndromes of instability>).

A more general view of the dire effects of fast activation or chronic re-activation is given in the story ‘Chameleon and the Hare’ (Hull, R. 1992 pp.14-15 – in <Appendix F3>) and relates to the ‘first-order’ sensation (nexial-topologic order 1) of ‘in-dying’ (see <Appendix D3\ Signs of ‘in-dying’>), and its second-order form, sometimes called ‘second dying’ in the archaic texts, and their reification into ‘Die’ and ‘death’. There is also an inversion of the message (see <Extract F13\ San Jiao & inversion>). Many such stories contain aspects of nexial-topology (eg ‘return’ in this one), and such a reading of primitive myths taught me a few things about how to manage health. In this story, one notion is of particular interest: speed, because it is related to the notion of ‘Wind’, through the idea-image of spinning.

\textbf{‘Wind’ as a topologic notion}

The framework of the East is what evoked the strongest sense of recognition in me. I will attempt to show why. One phrase struck me because its was so clear to me, thanks to the medical notion of ‘wind disease’ or wind attack, in traditional medicines (Chinese, yogic, and Western). Yet it appeared so puzzling to translators with an anthropomorphic bend, that combining, in a statement, the added determining words from two Bibles produces a completely obscure sentence:

‘(Their) face(s[?]) (are) set (assembled) (like the/like/by) east wind.’ \textit{Habakkuk} 1:1-10

Taking away the added syntactic elements leaves a statement that uses global notions:

\textsuperscript{4} See <EE17 \ Burning>, <PPT6 Research notes>. This may be connected to two other conditions I experience, which are common in children: ‘burning feet’ (usually explained away) and ‘hot ears’ (not a recognised symptom).
‘face set by east wind’. Using a less complex grammar – the active form – gives us:

‘East Wind. Sets Face’

This makes sense to me, in the same way as an aphorism. ‘Wind’ is the main Element associated, in ancient perspectivalism, with the East framework, with a meaning of fast swirling. The capitals emphasise the low-order of linking grammar; the words are used like a maths equation: twist up-left [east wind] equals establishing-stabilising [set] into boundary [face]. This is a rule of thumb (how ‘it’ works); it describes a global operation on an undetermined field or space (undifferentiated rather than generalised). Even more ancient female stories of Creation in ‘the East’ do not call it thus, but use concrete images for it, related to a spiral shape (eg the snake) and explanations that suggest a nexial meaning of activation and ‘rising’ up to a ‘sky’, which can be interpreted in topologic terms. In later texts, this ‘sky’ is replaced with topographic denominations such as the ‘face’ of the Earth, a surface ‘boundary’ that is the other side of the ‘sky’ (seen from above instead of below – this is a ‘turn inside-out’). In my observation of health behaviour, an activation is an ‘increase’ (another common word), which can have damaging effects if too fast or too powerful (like an agitation that ‘gets into a spin’, worsening until it reaches an extreme). If gentle enough, and re-initiated repeatedly, the ‘increase’ then shifts into a ‘flat calm’ in which the activity becomes patterned – ‘set’: the entire lifeworld is now like the FlatLand of normal reality (the Bible calls his ‘peace’). The non-specific statement ‘East wind sets face’ expresses this, as does a simple scribble (figure 33). [Note that the inversion of the order of words is ruled by nexial-topologic deployment, and related to the passive instead of active voice (adding the word ‘by’, and this expresses linguistically the ‘turn inside-out’.)] At different orders or speeds of activation (and twisting), in the later texts using the integrative framework of ‘The Earth’, this image takes other names: wind, soft breeze, whirlwind, storm, cyclone (and now vortex). The frameworks of the East and West tend to choose, instead, more concrete, naturalistic
images, such as the snake (East) or horns, antlers (West), which suggest more directly the Left-&-Right shifts, through the ideas of ‘winding’ or bifurcation, respectively. In the South-North framework, it is developed into other concrete images, such as mountain and valley, or rock and pit, and abstract notions such as water flows and overflows. These arise from global notions of ‘wind’ and ‘directed arrow’ (the two generic parameters) and deploy ‘natural’ and ‘human’ meanings and objects:

‘Wind (Feng) was the conceptual ancestor of Qi (Ch’i).’ (Zito & Barlow p.34) The ‘imagination of winds’ (op. cit. p.23) is considered a major instrument in the development of concepts of the ‘body’ as a system that has a boundary, and from it, of the ‘politicised body’ (op. cit. p.131)


‘According to Chinese legend, winds arose when the feng bird emerged from the wind cavern (fengzue) in which it lived and subsided when it returned to the cavern (Huainanzi, juan 6).’ (op. cit. p 37)

The imaging vocabulary used here, as well as the problem-solving story line, pervade Chinese inner alchemy, and the bird is a typical image associated with the East. The cave is a widespread image too, from yogic practice (in the centre of the head) to Plato. All this suggests that such images, considered ‘obscure’, might be more usefully approached in terms of topologic imaging of ‘spaces’, including the physical space we call ‘body and environment’, than as imaginative metaphors and analogies without precision. The ‘Creation myths’ might have something practical to teach regarding the concretions and wasting of the ‘body and natural environment’ rather than only philosophical understanding of the human world and mind. Nexial-topology could help bring some useful understanding of how we shape both our world and ourselves by ‘increase’, or ‘pushing’, and to ‘read’ the lessons of the human past about that, which are imaged in the stories. For example, the biblical story of Jonah and the whale has become a children’s story, but it mentions both the nexial Left-hand and Right-hand, water, dying, and contains 3 orders of intensity or layers of projection ‘up’ characteristic of the language of the East framework. Another example of an ‘obscure’
notion is ‘crossing the Great water’ and ‘it furthers’ in the I Ching; the ‘Great Time’ in myths (studied in Eliade 1954; see also ‘time, times, and a half’ in Daniel 1:7). Some semantic shifts in mythological names, such as woman-Mother-Goddess, man-god-Great God (or god of Life or of great power), or sky-earth-heaven, are assimilated into a single chosen name, the others being considered ‘metaphors’ or just different names for the same thing. They may represent orders of deployment. The ‘powering’ of ‘increase’ can be very useful pointedly for a particular purpose, but as a philosophy of life, it causes instability and health damage, and it would seem that:

‘Better is a handful with quietness, than two handfuls with labor and chasing after wind.’

(Ecclesiastes 4:6)

**Etymology shows traces of nexial-topologic understanding**

The following table summarises an etymologic root of the words East, West, and Space.

<table>
<thead>
<tr>
<th>east</th>
<th>west</th>
<th>space</th>
</tr>
</thead>
<tbody>
<tr>
<td>aus-, to shine (dawn)</td>
<td>etymology:</td>
<td>etymology:</td>
</tr>
<tr>
<td>shiny, bright</td>
<td>wed-, water (wet)</td>
<td>spe-1, to thrive, prosper</td>
</tr>
<tr>
<td></td>
<td>wet</td>
<td>spe-2, long, flat piece of wood</td>
</tr>
</tbody>
</table>

The etymology of ‘space’ correlates human aspects of prospering (‘shine’”) and a prosaic long or flat piece of wood, no more clear to conventionalised thinking than the origin of the 4 directions or cardinal points. Yet this ‘flat’ would be consistent with a topologic interpretation of ‘Flatland’, in the ancient form of the flat ‘The Earth’, or of the modern space-&#x26;-linear time. The thriving is related to the shining of health (eg the glowing skin of a pregnant woman by the end of the first trimester of growth activation), a typical concern of the East. Wood, on the other hand, can be related to the rigidity of a body chronically activated to tension (suggesting the Element Wood in Chinese culture, usually associated with the inverted meaning of strength, and the Western idea of turning to stone. This can also be related to immune system-driven symptoms activity (eg chronic common colds, or sweating) – ‘the Wet’ of the framework of the West. I made such connections between the observations of my state and what I read.
To answer my own questions, the frame of ‘The Earth’ can be viewed as a general landscape of explanation and experience. The 4 directions as specific models describing the effects of increase and vertical projection, in a global way, on different spheres (eg body, behaviour, lifeworld, and the ‘physical world of humans’). Each direction models effects on women or men, in two orders of successive deployment, East and West a first one, South and North a second one. This can also be viewed as simultaneous unfolding-enfolding in different spheres or modes, or the effects on 4 types of human states. The idea of using 2 parameters to describe topologic compaction does not seem new:

‘If the universal frame had been created a surface only and having no depth, a single mean would have sufficed to bind together itself and the other terms; but now, as the world must be solid, and solid bodies are always compacted not by one mean but by two, God placed water and air in the mean between fire and earth, [...] it was indissoluble by the hand of any other than the framer.’ (Plato, ca. 360BC, Timaeus)

The rules for living derived from these frameworks still operate in modern living in the ‘physical world of humans’. They affect drastically what happens during pregnancy and infancy. They govern the way children are fed, treated, and educated into learning to replace internal body sensations by sensory ‘information about’ the ‘body’. We all learn to ignore the ‘native gauging’ that cannot be explained in terms of perspective, described as experience of the self, and seems to ‘not make sense’. Instead of knowing what is adequate to keep a situation on track, we become confused about what is ‘right or wrong’, – according to one perspective or another, good or bad for ‘us’ or ‘others’. These ways lead to curtailing the simple behaviours that could make the ‘ease’ I call ‘proto-health’ the most common rather than rarest state of health-sanity and life deployment. Perspectival framing is useful pointedly, sometimes necessary, but as a collective way of life and of understanding, it is globally damaging. Much more could be told about the experiences and explanations that arose from this research work, but etymology (to Indo-European roots – see <Endnote C13\Etymology>) and a drawing can encapsulate a major overall nexial-topologic understanding of our perspectives on health (figure 34):
The word ‘ExPERIence’ names our acute, chronic, or vague sense of peril, emergency, need, or problem;

The word ‘ExPRESSions’ names the unfolding (directed) nexial activity of our creativity;

The word ‘ExPLANation’ images our understanding as a geography of perspectival models;

The expression ‘EmPIRical evidence’ images the enfolding topography of our physikemorphed realities, including the ‘body’ and ‘environment’ we control and drive.

Perspective is developed under peril, and describes health as various orders of ‘immune’ defence and activation, in critical states in which the head, brain, mind, intellect, psyche, and sensory perception, focused or opened attention, etc. rule. The most ancient stories contain remnants of understanding of the global implications of this for human daily living. Nexial-topology could help ‘read’ them.
Conclusions

This research project has challenged perspectival explanations of chronic illness, of the general health instability that humans commonly experience, and of the physical reality we take for granted, both in the body and the spatial or material world in general. A commonality in our views of nature, human nature, and life, came to the fore through two investigations. The first mapped the many perspectives on these realities, ordinary or not, normal, super-normal and sub-normal, in modern as in ancient times, in Eastern and Western cultures. The second modelled the sensations (in body and brain) of health or illness in daily living. Underlying all our perspectives, and arising from sensation, are simple iconic symbols or images that rule our representations, cultures and civilisations, and which shape our practices regarding the body and the physical or natural world. Changes in these iconic shapes can be described using a basic form of geometric topology, and the resulting modelling method can be applied to any field of the scientific and human domains.

**Nexial-topology, perspective, and ‘gauging’**

The particular framework proposed – ‘nexial-topology’ – describes the differentiation of the human-physical situation into various aspects. It uses 2 non-local properties that are recognised, it seems, by all cultures: a *Primus Movens*, here called ‘nexial’, and a vertical *Axis Mundi* of topographic nature. They are conventionally interpreted as generic, primary or fundamental: duality and polarisation, appearance and occurrence, direction and motion, projection and activation, etc. From these are derived our geometric icons, and all other conventions (eg space-time, self-world): two summaries follow, one formulated in scientific (Sc-) terms, the other in human (H-) terms.
Sc-deployment: a technical summary

The separation and re-combination of the 2 properties describes the deployments (unfolding-enfolding) of topologic deformations or distortions. The images produced are commonly differentiated into discrete nodal ‘stages’ of a sequential (one-directional) ‘development’ or as simultaneous-modal ‘forms’ of evolution, advancement, progress, growth, ‘rising’, etc. These are framed in perspective, in the terms imposed by the primary senses (sight, sound, and skin-surface). From these are derived systemic conventions and our many constructed models of explanation, styles of experience, and other expressions, creative or destructive, as well as a ‘hidden’ or ‘mysterious’ domain, and a baseline neither challenged nor experimentally studied. The 2 parameters also define a third topologic property of ‘boundary’ that is expressed in closed or open boundaries (of point-set defined systems) and ‘boundary conditions’ (operational limits). ‘Advanced’ models (some making use of mathematical topology, others of cryptic symbols or codes) describe ‘reaching boundary’ – that is, the making of structural boundaries, and breaking of functional boundaries. ‘Boundary’ thus manifests in characteristics such as nexial constraint, topographic containment, and topologic ‘quantised’ jump (shift to a new shape). This topologic ‘reaching’ is related to an inversion-return-reversal in the conventionalised models, which is usually formulated as ‘not well understood’ or mysterious. All these representations involve some form of critical change or ‘orienting-at-boundary’. The deployment also produces a subtle global drift expressed in characteristic ‘endless’-‘scattering’-‘wasting’, a warped direction which, for nexial-topology, is ‘turned around’ (in common parlance, ‘turned out’). It also manifests as an ineluctable drift into ‘cloud’ states (eg loss of integrity under operation) and models (eg internet ‘cloud’ technology, ‘vapour’ in spiritual ‘internal alchemies’, ‘rain’ in Neolithic creation myths).

H-deployment: a philosophical summary

Perspectival framing formalises the nexial-topologic ‘place’:

- to localise it (project geometrically) into a concrete space surrounding the head, an abstract world surrounding the self, or to reduce it to a topologic field (FlatLands), continuum, space or world, that ‘comes to a head’ (eye of the storm, mountain top, centre,
etc.) – or never does (asymptotic warped direction: ‘near’, ‘almost’, approximation, and probables);

- to extend it into a conventionalised systemic timed-space defined by skin surface-sound-sight, into realistic or naturalistic ‘realities’, and images of the ‘physical world viewed by the mind’, or the ‘material world of humans’, or to reduce it to a whole-with-parts that is ruled by ‘head’;

- to deploy a set of directed synMetrics / boundary phenomena / moving harmonics, and to develop them further into ‘valuings’ (measure, naming, evaluation, etc.) that represent what is improvement, as valued for purposes of critical survival, and what is ‘Human’-‘Natural’-‘Life’, according to definitions of ‘evidence’ valid to the mind and senses.

These are important specifying strategies in certain circumstances, but reducing or ‘compacting’ (topologically) the animated imaging sensed to such ‘territory maps’ and operational directing, also produces generalising perspectives that just confirm and justify the baseline criticality of the ‘local’ observing, without challenging it. They result in limited anthropomorphic attributions known only to science and limited geometric projections of physikemorphism known only to the human domain, with no linking of understanding between these two domains.

Nexial–topology can model the deployment of all these specifying localisations, extensions, projections, attributions, and distributions in anthropomorphic andphysikemorphic ‘spaces’ [mathematical notion of space’], into any perspective, and what is missing in perspective itself.

**The ‘native gauging’ capacity**

By contrast, it can also be used undeployed, to ‘gauge’ the same human-physical situation as it ‘presents’, without differentiated rePresentation, without separating and recombining the 2 global parameters and properties, and therefore without ‘invisible’ domain inherent in model inversion. In this case, the animated imaging models the tendency to deployment (‘swelling’) in non-critical conditions, ‘gauges’ the ‘approaching’ of ‘boundary’ (i.e. detects the approach of criticality, of ‘spreading’ and endless warped ‘path’). It ‘shows’ non-local
properties, although these are apprehended locally, in particular through the sensing related to
gravity, water, and physiologic ‘swelling in the mass’. The ‘native gauging’ capacity models
conditions on a human scale in daily living, but with properties valid non-locally, and
particularly images ‘going off track’ (eg from the state of ‘ease’, including in health), the
approach of ‘cloud’ states, and ‘predicts’ in generic terms (sees or shows) the appearance of
‘cloud’ explanations and technology.

Implications for medical methods: health ‘sates’ of immune ‘deployment’

Part of the ‘hidden’ domain for medicine involves the uninvestigated ‘small percentages’ of
error, approximation, or lack of improvement, in medical trials and ‘evidence based’
practices. These are the most significant for nexial-topology. Some of these margins correlate
with a nexial-topologic deployment that is not observable with conventionalised techniques
(instrumental, but also sensory), and with unchallenged baselines (eg a degree of
‘malwatering’). The descriptions, provided in chapter <Health and illness>, of ‘immune
deployment’ and of taste distortion are of this kind. These observational limits have wide-
ranging consequences for the body, and some important implications for medicine and
collective ‘health’ systems. For example, a ‘complete’ (M6-) model of immunity includes
inflammatory localised swelling of tissues, irritation (eg sore throat, quasi-allergic reactions),
and, infestation (including immune-driven allergy), infection, and auto-immune disease
(auto-reinforcing degeneration) or genetic disease (or metabolic dysfunction). Its ‘hidden’
field includes the now popular cognitive effect-causes, but also cell walls and organs as
‘resource’ for the body’s coping mechanisms in stress and strain. Yet ‘malwatering’ is
ignored: dry cells and/or swelling tissues (‘when tired’) represent an inadequate distribution
of water result from directed activations of fluid motions, is not corrected by drinking more,
and affects every function and structure in the body.

The most notable implication for medical research is that, findings in highly focused medical
studies on drugs, herbs, nutritive substances, and lifestyles, do not take into account the
‘health states’ of the subjects (states of deployment) nor their ‘orienting’ with respect to head
driven, sensory-based critical response and ‘immune defence’. This explain disagreements
that shift into petty academic controversies over methods and reversed claims in the media
(eg is some wine good for your or not?). What produces an improvement in one state may be
useless and even damaging in another state (even in the same person, and this goes beyond
‘side-effects’ or placebo.
In research, taking into account and disclosing ‘researcher H-orientation’ (‘local Sc-orienting’
– see <Validity and valuing>) would help clarify the degree of ‘deployment’ that underlies
both the research and findings. It constitutes a daily life local ‘baseline’ of criticality for the
researcher, and colours both methods and results according to perspective. Framed
perspectives are inadequate to describe the baseline of ‘survival’ effort and chronic
‘malwatering’. Using ‘native gauging’ (non-deployed nexial-topology) as a benchmark, in
research, in clinical practice, and in daily living, could frame our sweeping generalisations
and offset our collective ‘orienting’ to criticality, to ‘survival’ unconscious behaviour.
The modelling proposed could help understand more simply, for example, the metabolic role
of copper, effects of ‘metabolic choices’ such as histidine-histamine, the role of acetylcholine
receptors (muscarinic, nicotinic) in cognition and vital functions (especially breathing, with
consequences in smoking).
The deployed form of nexial-topology would provide a simple of way mapping the
‘development’ of disease, and in particular the falling into Alzheimer’s disease degeneration
and arising of cancer (and other ‘ageing’ conditions) from ‘benign and unrelated’ pre-
cancerous states, inflammation, and the newly recognised role of scar tissue and stiffness
(…involving ground substance and the cells that make it.) It can model simply the
deployment of conventionalised frameworks such as R-GENetic and L-VIRal characterised by
nexial twisting or spin and virulent crises, the spreading and periodic reappearance of
disease(s) in population or in the body, and the eternal quest for and renewed development of
R-chemo therapies based on EXtracts (drugs, herbs, and foods – pro-healing or anti-….,
stimulant or calmant) and L-radio therapies based on brain firing or external ‘energies’.
Despite all these, we still do not have an integrated understanding of the rise and spread of
disease, or how to avoid ‘deploying’ all of these physical and behavioural problems, and concurrently having to deploy technologies and intelligence-based solutions, which do not have to be necessary or inevitable needs. Nexial-topologic modelling could benefit our understanding of one of the most puzzling, painful, and research-costly forms of disease: cancer, which results in the loss of integrity under operation, ‘falling apart’ and endless drift into the ultimate deployment – ‘cloud’ – until no ‘thing’/body is left alive to fight and think..

**Implications for the body and health**

I found empirically that perspectival deployment is correlated with the local deployment of immune ‘defence’ (activation, vertical projection) and with certain physiologic and metabolic mechanisms of entrainment of head-based control and feedback loops (vertical axis). These affect brain and mind, perception and psyche, behaviour and lifeworld. Some factors of this entrainment cannot be stopped voluntarily, by the mental self’s attention, intent, focus, power, projections, or its will, and survival drives or efforts. (Some organs seem to have no calming innervation or dedicated ‘deactivating’ hormone.) Even relaxation, which is a chosen lowering of activation or directing (top-down active control of body by brain) and of mental projection (eg goal seeking), does not stop ‘head drive’ and ‘coming to a head’ or ‘un-orient' the vertical axis (direction up or down is irrelevant), or stop aggressive ‘immune defence’.

Only certain unwilled, involuntary, ‘spontaneous’ behaviours (non-reactive, non-corrective, non-compensatory) can do this. When the ‘person’ (behavioural body or inner self) stops ‘doing’ (or ‘trying’ to be or to do anything), then any focus, and even ‘open’ attention (integrative, including peripheral) stop, as does mind/brain-triggered targeting. The above factors of entrainment or alert are stopped, and all ‘works on its own’ again, without particular target or general directing or integrated ‘director’ self. Modelling health with nexial-topology has thus the practical advantage of making sense (without distinguishing external – person-al – or internal – physiologic, metabolic, cognitive behaviour) of the non-purposeful’ or non-differentiated role of these ‘spontaneous’ behaviours. It shows the non-local or global effects of the most basic means of keeping health: breathing at ease, delta sleep (unagitated by dream), unmodified foods, unadulterated water, which all have direct
and systemic impact on bodily water distribution, and help to not maintain the universally accepted ‘malwatering’ baseline that sustains the degrees of survival behaviour.

Modelling ‘immunity’ systemically as ‘defence of self’ (or aggression onto ‘not-self’), and framing it as a necessary or inevitable state of peril (in various grades), experienced as ‘normal’ (or a chronic ‘survival mode’ for some), entrains the related deployment of the vertical axis (in whatever diRection). This is characterised by a nexial-topologic sense of non-local ‘swelling’ (that can be interpreted in countless ways). Physically, it is expressed in a low-grade systemic swelling concurrent with a low-grade feeling of dehydration, particularly of the head, brain and spinal fluid, and as an increase in ‘grav-’ effects (physical heaviness against gravity, mood of ‘graveness’, social-gravitation behaviour, the ‘gravid’ female body, the large-periodic ‘grav-wave’ instability, etc.). ‘Gauging’ instead, detects these almost imperceptible effects (invisible to senses), which are less deployed than even the ‘early indicators’ of chronic physical damage or bodily ‘wasting’. Tissue degradation (eg catabolism in fibromyalgia and related neuralgia) can be too subtle to be measurable by objective tests and instruments, or noticed by others, and even often oneself. Emaciation can be hidden by the tissues ‘turning to fat’ or by swelling of the face (around eyes in particular).

One’s physical appearance may remain a ‘normal’ size or weight, or be variously evaluated according to changing cultural standards of beauty, while fat gain or concretions (cysts, growths, tumours) and hidden mass-wasting are spreading, unchecked. ‘Little aches and pains’, struggle and fatigue, and loss of structural and functional integrity, may all be ‘invisible’. Deemed normal if occasional, they are known to be source of disease ‘if sustained’. Yet ‘advancement’ and even ‘sustainable development’ are the non-local goal of cultures and civilisation, and we still do not see that we periodically fall victim to their entraining and spreading the overactive and too sedentary indoor lifestyles that turn health into effort, strain, stress, crises. Yet, basic aspects of living, such as the capacity for calm sleep and physical self-care, or unconditioned/ unprogrammed taste, can be distorted without being critical enough for our localising and evaluating perspectives to detect systemic damage, or that ‘vital functions’ and organs are affected, and to provide ‘medical’ correcting
treatment. Human correction of ‘personal’ behaviour tends to be the norm in this case, with only localised and often only temporary benefit, but long-term and system-wide consequences. Such distortion could be addressed by using nexial-topology, making its physical expression detectable (by gauging), and removing devaluation of its human expression in the ‘person’ (a system). With a lack of ‘awareness’ of these changes, disappears the ‘ease’ of health that puzzled Williamson and others (discussed in Chapter <Health and illness>). That is, what is lost is a ‘proto-health’ that requires, in most conditions, no medical intervention, repair or healing work, no personal effort (‘working at it’, fitness workout), conscious choice, experience of ‘highs’, or cyclical resetting. Instead, for most of us these apparently necessary or inevitable requirements – imperatives – of ‘physical health’ are made the essence of most of our living and encultured civilising, whereas ‘ease’ (effortless proto-health) is an unlikely ‘Exceptional Experience’, and is unstable if it occurs. The grounding in well-being and sound daily living is lost, as we loose the serenity of the infant (Williamson in <Health and illness> p.81).

**Domains of application**

The undifferentiated nexial-topologic ‘situation modelling’ is compatible with conventionalised framing and representation in perspective (which the differentiated form of nexial-topology can model without complexities), but the two ways of apprehending ‘the situation’ operate under different conditions: ‘non-eventful’ versus degrees of ‘critical’ living conditions, respectively. They also enlist different ‘spaces’: undifferentiated situation and generic understanding, versus systemically/systematically defined and specified by perspective, which also generalises. Each has a sub-domain in which the other modelling method is unusable, and they have a common domain of validity at the junction of both. Nexial-topology cannot provide specific or generalised solutions, or targets to pursue in catastrophic or chaotic conditions, and it does not extend into the multi-dimensional realms of the mind and perceptions, or does it justify the generalised solution, used in many fields, of ‘pushing’ the extremes up to ‘cloud’ dissipation in order to ‘undo’.
Conventionalised views, topologies, and perspective, on the other hand, do not have the ability to rePresent non-deployment, non-valuing, an ‘undifferentiated’ topologic ‘space’ (a ‘place’ neither definite nor indefinite), or proto-health and the ease of daily living (ie without criticality or boundaries, not ruled by the head and sensory-derived information, including that from skin/mucosa-surface sensations). They cannot deal with non-local properties, such as swelling, drying or warming (eg body temperature but also ‘global warming’ or heated human behaviour) that deploy. These propeties are not reduced but increased by all our solutions, improvements, and advancements; as much as by our representations of phenomena as problematic – circular and symmetric properties both invisibly bring on and express critical conditions.

In challenging the universal applicability or validity of perspectival, systemic and systematic representation, the present work does not invalidate their high and repeatedly proven value. Such rePresentations are relevant for dealing with injury, with emergency that requires immediate and alert attention, or with critically difficult conditions that require logical questioning, focused problem solving, goal seeking, targeting, expert skill, collective changes in lifestyle, etc. Their effectiveness is sometimes indispensable, but if sustained chronically or at high-energy (pointedly but acute), they create vicious circles, instability, and problems. They reduce human intelligence to details describing our ‘Great’ productions but also monitoring our demise and to justifying lifestyles, cultures and technology directly related to our ‘Fall’. They are physically damaging to varying degrees – and this manifests non-locally in both the body and the physical world. Nexial-topologic gauging, on the other hand, is apt to ‘announce’ and dissolve ‘non-local’ difficulty (conventionally phrased: ‘reduce’ global or fundamental problems and ‘local’ struggle that is not necessarily visible in physical or mental-human terms).

The mind-body problem

Conventional discussions of this problem of separation lead to paradoxes that are usually resolved by choosing either the mental or the physical as ‘primary’. This issue, however, can be addressed differently. The vertical axis is directly implicated in the ‘mind-body split’: and
the word ‘mind’ is often used indiscriminately to also mean ‘brain’. The brain and mind can make the body feel better – or worse –, and vice-versa (there is a topologic symmetry between the 2 directions). ‘Reversing’ one into the other (eg diet change for a hyperactive mind, or lifestyle change for a stressed body), however, only inverts the direction of the vertical axis, but does not ‘undo’ the very use and trigger of the axis. Compensating the ‘up’ activation by a ‘down’ projection of brain-central-control or mental self-control (or vice-versa) creates the circularity mentioned in the <Introduction>, and thus maintains the split (eg loss of internal sensation leading a self to feel good, even though the ‘physical body’ is sustaining low-grade damage). Using this axis both ways creates a topologic ‘tear’ of ‘surface’ – the mind-body disconnection – and is related to a ‘critical response’ that is ruled by sensory ‘information’ (an ‘orienting-at-boundary’). ‘Symmetrising’ or synthesising mind (or brain) and body (the rest of it) into a ‘whole’ (which is a onescape, still a system) only maintains this, and adds a bend to the axis. This ‘both ways’ strategy manifests as a mutual, circular entrainment of the head (brain-mind, and physical-mental), and of a defensive-aggressive ‘survival mode’ of centrally controlled effort. This mode tends to get out of hand and drifts into using the physical ‘reserves’ of both body and brain (hence degeneration – which may be fast, slow, or advanced – as in ageing or pre-cancer). Reducing, not the direction by inversion, but the ‘orienting’ (the entrained use) of the vertical axis (in whichever direction), ‘undoes’ the mind-body separation (as opposed to a reintegration, which implies a division & synthesis). This entails stopping the way of using the body-brain in critical ‘response to’, and not limiting apprehension to sensory information.

Implications for theory:

Built-in ‘SynMetrics’ and ‘HarMonics’

Many of the findings in reality, from science, humanities, and from ‘core-culture’ techniques (eg art, healing, spirituality, mystic practices, etc.), are not so much inherent in what is observed, as they are rather ‘built-in’ characteristics of our perspectival system of representation and sensory based construction of observation. The systematic separation,
division or distinction of the 2 covariant non-local properties (or 3) into separate parameters for perspectival representation, hides built-in directions and activations such as:
general symmetries in the ‘FlatLand’ order of deployment:

- with the ‘good’ and ‘improvement’ comes the ‘bad’ and deterioration;
- with a solution comes a problem;
- with generation comes degeneration;
- with (re)integration come fragmentation and ‘tearing’ split;
- with endless growth come progressive ‘in-dying’, scattering and wasting;
- with ‘spiral’ or nexial deployments come harMonics: the knot-based constraining notions of ‘one’, ‘system’, or things, and the damaging clouds, rains, wasting, or ‘fall’.
- with deployment(s), comes periodic instability.

Entraining improvement, solutions, generative evolution, growth, etc., cannot but come with their symmetric-opposite or harmonic damage, and they all express the same ‘oriented’ critical change.

*Approximation and uncertainty*

The reification of nexial-topology into a Sc-spatial topology, a H-symbolic cosmogyony, or an ‘advanced’ or coded timed-space, results in very real phenomena such as approximation, uncertainty, chance (random occurrence or appearance, fate, coincidence, etc.), error, ‘hidden’ damage, and ‘drift’. These may seem small (or a large immanent globality), but they correlate, in *most* real or natural conditions, with distortions, deformations, disturbances, perturbations, — in short, with various degrees of criticality. These leave, in the end, the *almost* only solution of the quantic jump, whether self-organising or auto-destructive, and the ‘built-in’ phenomena of established stability and of instability. Gauging presents a different view.

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1 The intermediary stage of One-l brings physical concretions (eg scar, cysts, cancer growth).
**Imaging nexial-topologic deployment instead of foreseeing and proving**

As a method for modelling the deployment of a situation, nexial-topology does not produce time-prediction, proof of spatial existence or demonstration of validity (for instance, that definitions of naturalness, of the ‘human’ quality, or of life are met). It does not ‘foresee’ details in conventionalised spaces, but rather procures an animated imaging that has a ‘likeness’ to the situation ‘in shaping’, as it ‘presents’ – that is, it is a basic ‘gauging’ of change. It is a means of seeing globally both ‘whence from’ certain conditions originate and ‘where to’ they are headed but without discerning one from the other: it is a covariant deployment that is modelled in an animated way, not a composite of one-directional developments, separate or opposed, sequential or modal. This method might shed new light on consequences of combined scientific discoveries and human developments, particularly for physical-human bodies, environments, and resources (eg food and water). If we reduce gauging to rePresentations of a ‘reality’, localising them into empirical expressions in a physical or material ‘space’ or ‘field’, or extending them in human spaces and places, we lose the ability I called ‘native gauging’. Our ‘living’ is thus reduced to being projected into the head, to a constant sense of pressure, emergency, or looming catastrophe (‘coming to a head’), and we become imprisoned in the poor sensory-based landscapes of ‘world’ and ‘body’.

**Physical wasting, material waste, 'WasteLand' physical-human world**

‘Wasting’ is a physical expression of ‘scattering’ and ‘endless’ deployment (explained in <Nexial-topologic deployment>), related to ‘consumption’ (in health, or consumerism). The following is a global portrait of the ‘physical world of humans’ as this researcher apprehends it locally while in the ‘endless state’ required for fine-tuning the redaction of this thesis. This landscape is global, but is also correlated with the local physical health baseline (autophagic ‘consumption’ of ‘bodily resources’ to fuel this state connected to anaerobic effort). This portrait is envisioned and written in a topographic mode, like a grave poem in images, to be apprehended globally:
Human lands have little food, but in man-made fields and man-collected seeds:

Few species of wild berries and nuts, leaves and edible flowers, are left.

There is little potable water but in man-made pipes and containers:

Its flow is changed by our building, and is transformed into convergent floods;

Scattered in evaporating droughts, turned into a source of disease in catastrophic conditions.

Human bodies (body-brain) are, for most of them, bent physically (by gravity) or mentally (by graveness), affected repeatedly by the floods of immune defence secretions, and they struggle with hot and cold. They are born or have grown to be unfinished and blemished, ruled by ‘normal’ standards of child sickness, and plagued with chronic, low-grade (hidden) dehydration, periodic instability, and progressive dysregulation. The loss of internal sensation, external sensitivity, and of access to ‘native gauging’ has global repercussions, not just on health. ‘The world’ drifts into a self-fulfilling ‘auto-pushing’ to ‘boundary’; behaviour drifts into auto-destructive damage of ‘wasting’ and consuming, individual and collective, or even ‘auto-kill’ behaviour (eg from low-grade chronic ‘autophagy’ that fuels the critical states, to medical ‘attacks’, to auto-immune disease, hurting and killing self, others and other species).

Non-‘human’, ‘wild’-life, plant and animal, is dwindling into extinction, forced into our enclosures for survival (zoos and scattered national parks), except for those highly adaptive, fast growing, ‘survivor’ species that thrive on our wastes (eg in sewers and damaged lands). We commonly name-call them ‘pests’ – paradoxically, since we consider that improvement and thriving rely on such qualities. The bodies of our pets and pests appear affected by the same limited and worsening ‘health’ as ours, and such degeneration is spreading to the wild.

Our behaviour turns to the same uncontrollable material-physical wasting away and consumption as our body does. We let fresh vegetables rot in the refrigerator. We use up ground resources to manufacture all sorts of implements that fall apart and end up in waste

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\[1\] Sc-dysregulation: an impaired regulatory or compensatory capacity is more than a H-deregulation; it has actively deleterious effects such as auto-triggered bodily damage.
dumps. Most of them are made necessary only because we are ill at ease physically, mentally, and with one another. Yet they do not halt or even alleviate our physical wasting, or the correlated state of ‘need’. We cut down forests so easily, and flatten soils to build (figure 44), in the same way that we ‘draw on the body’s resources’ to build our ‘human’ selves and worlds, eroding our physical survival capacity. We find the body victim, from birth, to the long invisible wasting-away of ageing, and to the faster degeneration of illnesses that ‘eat up’ the body’s ‘substance’, inexorably, inevitably. In the same way, we find ‘the land’, ‘our planet’, going to waste, ‘consumed’ with progressive damage in plague proportion.

All this has already been described in archaic literature, albeit in a less differentiated way, as ‘wasteland’. The property of ‘wasting’ is non-local and recursively reappears at the end of the topologic deployment: waste is a ‘scattering’ and falling apart, and is a correlate of endless effort. These are built into the unfolding-enfolding frameworks.

The images in figure 44 express this basic notion of ‘wasting’ in a particular event. The situation depicted is intrinsically marked by the ‘endless-scattering-wasting’ stage, in which

![Figure 44. Trading undifferentiated ‘ease’ for generalised ‘wasting’](image)

(Reproduced from <PPT7- 3 geometric rules\slide 7>)
the state of ‘being unaffected’ has no ‘existence’: one cannot be ‘immune’ without needing
defence, constructed barriers, the compensatory comforts of civilisation or one’s own work.
These images show how such deployment translates into degrees of freedom that may make
many things ‘easy’, but this is achieved at the high cost of loosing undifferentiated ‘ease’.
The aim is to make apparent the symmetries that are ‘built-into’ this view: the spreading
destruction and reConstruction (an extrinsic symmetry) of the ‘physical world of humans’.
This description, however, must be clearly understood to be a physical projection, a view
symmetric to the extraordinary and useful achievements, inventions, and intellectual
advancements of the human mind, some of which this research project has used. For
example, published ideas developed by the explanatory perspectives have supported my
theoretical study. The nutritional substances extracted from nature by medical science have
supported the investigation of specific functions, structures, connections and operations of
human physicality. The healing techniques have supported the exploration of internal
sensations of health and illness. The scholastic practices of academia have promoted the
exploration of the ‘endless’ state. Topology enabled me to model human living in a way that
was not possible before our greatest ‘minds’ developed this discipline.
The method of nexial-topology makes use of the most specialised knowledge about animals,
plants, ecosystems, things, and human beings, albeit in a different way than by creating more
perspectival generalities, specifications, and constructed exPERIences, at the cost of physical
soundness. It allows to describe the less fragmented understanding that is ‘lost’ to the
‘Human’ intelligence of detail and perspective, using also the most ‘primitive’ of our
capacities, the ‘presenting’ animated imaging – the ‘native capacity’ for ‘gauging’ without
differentiation. Symmetrically, it allows gaining, regaining, or not loosing access, to the
‘ease’ of health and of existence, in most daily living conditions. This non-specific ‘ease’ is
‘buried below’ by the many targeted efforts of the modern, complex ‘civilised Man’.

Water
The human practices of wastage in household, agriculture, industry, and the associated fear of
physical lack of ‘resources’, affect water in particular. Trying to solve the global problems
associated with water is currently running into difficulties with biased perspectives and clashes of ‘valuings’ that are incompatible. This approach keeps increasing constraining rules or self-rule, and leads to even more ‘environmentally unfriendly’ choices that do nothing to reduce the collective ‘baseline’ of imperious need, which deploys into the problems as well as the solutions. This is partly because both ‘physical’ and ‘human’ worlds ignore that the ‘dwindling resources’ of water also affect also the body (water is just a ‘carrier’ in this object-body, a ‘substrate’, or an external resource). Ignoring its roles in the ‘integrity under operations’ leads to a loss that ‘depleys’ into the multiplying and urging needs we seek to meet through water-hungry technology.

This situation could be ‘turned around’ and modelled, and viewed instead, as a deployed order of nexial-topologic ‘scattering’ that manifests as a non-local Sc-‘wasting’ (including in bodily physiology), but also (symmetrically) as a local H-state of ‘endless need’ (despite appearances of no-need and satisfaction that hide internal damage). Both of these spread this state of critical need as a baseline state in the entire population (as the ‘stress of life’). It drives and directs human-physical compensatory need and endless material-mental greed for many things, including water, eating more, addiction to food-extracted substances that sustain brain-mind entrainment), and seeking comfort props.

In the local case studied experimentally, this state (not as a baseline) also manifested in ineffective physiological use of water and permanent systemic dehydration, to changing degrees. This is detectable in many common signs that we normally ignore, especially in children (eg swollen eyelids or ‘eye sand’ in the morning). Among them is the unexplained and un-investigated ‘typical morning peak urination’ (collective statistics). Dehydration keeps worsening until it becomes a medical emergency or an inevitable and normal ‘symptom of ageing’ (eg swollen sinuses). My experiments showed that the morning urination is related much less to ingestion of water or digestion than it is to a dry state and a lack of oxygen for adequate kidney function (they require more of it than the brain). The literature presents this peak as normal after the night, which is supposed to regenerate us. Yet some of the accompanying ‘signs of dehydration’ (eg coloured urine or even ‘froth’ loss of
protein, too small for medical diagnosis) are recognised in sports medicine as ‘after training’
effects. Is the night primarily a time of ‘work’ (of restoration) or of ‘rest’? I could find no
study or description of a body without automatic morning urination, with no degree of
dehydration.

Not ignoring such signs and signals could prevent low-grade damage to physical integrity,
and ‘undo’ the baseline of susceptibility to stress, disease, and ‘need’, without requiring yet
more water individually, or global aid strategies provided by institutions with water wasting,
resource-hungry ‘body politiks’. Many other issues related to resources, wasting, and
warming (see <EEs> and Mithen 2003, for example) could be addressed this way, through
simple options aiming at local ‘un-deployment’.

The teaching mathematics, and its effects

The use of diverse forms of geometry in this research brought out that the teaching of
mathematics, as other fields, is ‘turned upside-down’. School begins with the most abstracted
concepts (e.g. point and line, zero and one, plus and minus), and proceeds to construct a
system of calculation and measure. Only the most advanced students ever heard of topology
(in my time), applied to objects, concrete or abstract, that are remote from daily living. Yet,
the most ‘advanced’ imaging (from General Relativity) is the most relevant to appearance-
ocurrence in the most common conditions at human scale. It seems to me that we could also
use this daily living basis, and nexial-topologic drawing (‘scribbling’ or gesture), to help the
mind ‘deploy’ representation concepts the other way around. Starting from the
undifferentiated ‘swelling’ and mass-volume (the global idea of ‘big’ in a child, like a ‘ball’
rather than a ‘sphere’), we could move on to spreading and surface (and lattice style of
scribble), flows (linear and circular), line and circle, and later, containment and constraint (e.g
‘objects’ and rules, envelopes and thresholds, boundaries of structure and functional ‘degrees
of freedom’ that limit global effects, etc.), finally, considering boundaries that reduce to
L-point and R-parts in M-systems of point-set representations. Only then would systematic
methods be learned, with more ease, and used to develop the normal specialised ways, if
relevant to one’s life activities. Building diverse shapes is then a basis to invent, design or
construct objects (concretions: technological things, and things of the mind and self), and for creating generalised abstractions such as space-time, self-world. These are involved in the connective or operational sense of the ‘place’ of beings in ‘the world’ (eg ‘what is the role of mosquitoes in the world?’, of ‘me’ in society? – common questions in children), and in placing or posing a problem to solve. Only advanced requirements would deal with infinites, quantised zeroes, asymptotes and other hyperbolic productions, real or natural. This way of ‘deploying intelligence’ might offset our tendency to force unnecessary learning when there is no interest or need, to introduce everywhere boundaries, pointless technologies and practices ‘just because we can’, harmful social labelling, or technical ‘valuings’, and deploy emergency effort, when a gauging shows there is little global benefit in doing so. Following, rather than ‘turning on its head’, the ordering of deployment in teaching would, it seems, correlate with the chronological development in the child, of brain-mind capacities, skills and control, rather than ‘push’ children, ever earlier, turning them into our worst local enemy and a H-global (Sc-non-local) threat. Using again more organic-active forms of learning, grounded in daily living, and the idea of deployment, might reduce the stress of schooling, the disheartening confusion of infinites and of trying to identify the ultimate designer or direction of one’s life, or the difficulty, in many cases, of finding a particular cause to a situation. ‘Nexial’-topology makes sense to a child, because of its ‘global notions’. It is a practical help to lead one’s own life. It could help make sense of health and daily life during childhood, while it happens, rather than wait for adulthood to work it out, or for doctors and others to edict rules for living that are not always adequate for all. The inversion of deployment in later childhood is neither necessary nor inevitable, and it introduces a damaging drift that does not have to be.

Mathematics, particularly geometry, could contribute to keeping the ‘native gauging’ accessible in individuals and cultures, and support health and sanity, rather than root them out systematically, and contribute to distortions that result in long-term and displaced problems (from one sphere to another). This could also probably be applied to learning language and logic as well. We could deploy rather than start with linguistic distinctions such as no-yes,
black-white, mine-yours, good-bad, pain-pleasure, top-bottom of the pack, ‘personal’-biases (what is your favourite colour?), survival, and the double-binding values encultured by education. This suggestion of not ‘turning out’ the deployment of mathematics comes from my experience as a tutoring mother, as well as from my own schooling. I was praised for my ‘spatial intelligence’ and interest in physics, and yet struggled terribly at school with Euclidean geometry and infinites. My visualisation of shapes in motion was topologic, rather than ‘spatial’, it seems. It was a great struggle for me to reduce the ‘thinking in image’, which is so effective, in order to ‘learn’ a geometry that held no meaning for daily living, and to imagine ‘on the screen of the mind’ psychological stories of self, boundaries, and naming just to place the blame or defend. The great usefulness of topology in my making sense of the animated-imaging tends to support the method proposed here. The less differentiated ‘deployment’ approach to mathematics, logic, language, and education, rather than the usual ‘developmental’ approach, might create less global cause for grief.

**Further research**

- The findings of this study are relative to one local-case study. As much as this case is bound to not be unique, in one or many aspects, it may be an unusual or be a widespread case. The body-and-brain, or physical-mental perspectives, might be inverted in other cases, but these are projections of, or derived from, something that is not case-dependent and has been an object of interest throughout history.

- The symbolic icons that are here found at the ‘core of culture’ and civilisation (mental creativity and invention), and of the physical findings of our sciences of nature and body, affect ‘non-locally’ *all* aspects of our daily living, including the way we breed ourselves to be ‘Human’ (*Sapiens sapiens*) and ‘intelligent’ by modulating environmental, internal, and food stimulation. Non-remarkable aspects of daily living, therefore, would deserve more interest from researchers and institutions, at least as much as extreme ones (eg ‘medical emergency’ diseases and powers of the mind, leadership and genius). The proposal that the arising of
icons can be described by the ‘nexial’ (little differentiated) form of topology\(^3\) could lead to many applications. One of them could concern unexplained symbolisms, such as those found on artefacts from the Stone Age period (Rudgley 1999) and later prehistory. Another could tackle the ‘undeclared means’ that somehow ‘caused the development of farming’ (agriculture and animal breeding; Mithen 2003 p.64) and its spreading, which is correlated with global loss of biodiversity in plant and animal populations, mega-fauna extinction, cultural and population ‘explosion’, damage to health and behaviour (‘fallen man’), etc. This could help reduce controversies about human motivations and natural causes (eg post Ice Age global warming), and contradictory explanations about the roles of environmentally driven survival necessity, socially driven financial ‘survival’ (poverty), ‘easy living’, and creative or curiosity drives in these explosions and extinctions.

- Nexial-topology could help investigate the ‘hydraulic architecture’, and the water-based connective jelly of the body, called ‘ground substance’, which may ensure its physical ‘integrity under operations’ (think of denatured, watery eggs). The roles of water and gravity-aided movement could be compared with notions of ‘exercise’ for ‘fitness’ or for ‘working at’ a ‘balanced’ health, and the ‘fight against’ gravity in posture and degenerative conditions with water-swelling. Investigating the non-local meaning of a mood of ‘graveness’, rather than evaluating it as ‘negative’, could help replace the habit of trying to get rid of it (and of pain) through compensations, by the ‘spontaneous’ behaviours that undo this mood, and its less deployed form – ‘boredom’ (common in children, the elderly, and the depressed), and more deployed form – ‘need’. How would this alter our views of survival, Neanderthal man (with a moist nose and round head), the human body, and children?

- Certain specialised fields could bring clues useful to illuminate ill-conditions that are difficult to diagnose or name, provided that issues of health baseline, ‘states’, ‘orienting’, transfer of knowledge between scientific and human domains, and of conventionalisation be taken into account. Examples include:

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\(^3\) ‘Nexus’ is my ‘global’ or primitive word for a notion of ‘topologic space’, neither realistic nor naturalistic. The word ‘nexial’ is here opposed to the word ‘nexialist’, which is associated
(a) Gelatine, amorphous materials, phenomena ‘in the mass’, and glue (concrete thing and abstract concept in physics), could illuminate the role of the ‘ground substance’, in the body and health.

(b) Surface behaviour of fluids, including water and thinning or spreading, could shed new light on the role of water and gravity in the body.

(c) Twisting (eg chirality) and topographic projections, as detectable in all aspects of the systemic body (eg protein folding), could provide a simpler way to model the developments and degenerations of health (including in genetic diseases).

- Another interesting avenue (my preference) would be to observe great apes (especially orang-utans) to see if they display the ‘spontaneous behaviours’ that can ‘undo’ the common state of ‘defence’, effort and stress, or make it unnecessary. Or one might find that their current ‘natural environment’ maintains the same baseline strain as our agriculture and civilised living do in us. This could help derive a new way of looking at ‘wildness’, its loss, potential recovery, and possible benefits, and a different way of modelling it.

**Using nexial-topology**

The main innovation of nexial-topology lies in the use of topology without sensory-derived framing for perspective, and without differentiating ‘global’ notions. Modelling the situation as it ‘presents’, independently of the systematic deployments, conventions, and geoGraphic projections, permits to include the ‘observing process’ in the modelling. Or, as I see it, it does *not* discern separately observer-observing-observed. For example, in the animated imaging, the *local* apprehension of deployment (conventionally, by an ‘observer’) is not separated from the *non-local* properties (conventionally, topologic distortions of the global or immanent shapes of the ‘observed’). Seeing the significance of the animated imaging that is also lived and acted – the ‘native gauging’ – simply requires to not ascribe the undifferentiated imaging to things or realms, real or natural, or to objects and relations, unless pressing need to create critical containment, or compensate for constraint forces it. Ignoring this and always using ‘valuings’ (as we normally do) misses something crucial.

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with frameworks based on N2d- and N3p rather than non-local topologic properties.
However H-‘complete’ are our understandings, our representations are also Sc-approximate, and they are not (in most cases) equivalent to the un-deployed imaging. Computerised, sensory, or mental animation is only re-constructed (eg as geometric motion, vitality, or time), and has different topologic properties than those of the lived animated imaging apprehended directly. The topographic and nexial techniques of observation, perspectival analysis, and nexial-topology formalism, were necessary only for the purpose of research, and to deconstruct the reconstructed animations (invert the modelling), to find a ‘source’ (in icons) and an ‘end’ (in critical baseline health of ‘survival’), to map out our formal methods and practices to entrain immune ‘defence’, to project differently our habitual notions of intuition, instinct or physical gut feeling. The view of health expressed here indirectly (through words ad flat images) may be more inclusive or ‘complete’, but is still approximate: no such representation can be equivalent to the reader’s own ‘gauging’ (or anyone’s).

‘Gauging’ locally requires no such formalised process or skill and ignoring it, is what keeps us in our poor landscapes of ‘dwindling resources’ in both body and planet. RePresentations miss more immediate options, based on ‘undoing’ locally (not a location) the undifferentiated ‘state of need’ (critical or strain-stress mode), rather than ‘working toward meeting needs’, making efforts to meet ‘external’ or ‘internal’ requirements, or dealing step by step with looming crises. O’Connor (2003) wrote of mathematician Henri Poincaré:

‘Although his contemporaries used his results, they seldom used his techniques.’

This suggested to me to add one point. Although ‘native gauging’ is extremely difficult to explain adequately in scientific and human terms, it is simple to apprehend and be guided by.

This only requires being in a state that is not exclusively ruled by sensory perception and dual polarisation, these being rooted in the brain-head-mind and the aggressive ‘defence’ mode.

This dissertation in words and images can only point to what is missing in our exact or approximate knowledges, our uncertain experience or perceptual precision. Reading it as a mere ‘new’ representation would only add to the store of complication, difficulty, and the unease that we collectively build-up, inflict all around, and suffer from. Limited to this, the reader would miss something that is not included in the dissertation.
It is in this ‘something missing’ that lies, not fearsome ‘darks’ and wishful ‘yet unknowns’, but the access to ‘proto-health’ (soundness: sante – sanity – safety), to staying grounded and ‘on track’ (rather than on a ‘path’), and to the far less demanding options which we ignore, dismiss, and systematically make impracticable: the ‘basic’ means of non-critical living.
Appendix A – Nexial-topologic vocabulary

Obscure words and ‘dark sayings’

The vocabulary and quotations gathered in this table are drawn from many texts, most of them written before 650 BC. A few are contemporary. The words listed are used in texts that are considered ‘obscure’ because they make little sense in the conventional terms of realistic or naturalistic interpretation, and thus pose great difficulty for translation and exegesis. Such pieces of text were often called ‘dark sayings’ in ancient times, denoting that even then, the meaning was difficult to understand. This situation has led many to seek ‘the original meaning’:

- ‘As Karlgren states, the Shu […] “is often exceedingly obscure and frequently offers passages which, from the point of view of grammar, allow of several widely divergent interpretations”…’ (Waltham 1971, Shu Ching p.xvi)
- ‘And they have stretched their cord across the void, and know what was above, and what below. Seminal powers made fertile mighty forces. Below was strength, and over it was impulse.’ [note: 8] This stanza is obscure. A. A. Macdonell suggests that the ‘cord’ (rashmi) implies the bond of the preceding stanza; thought measures out the distance between the non-existent and the existent and separates the male and female cosmogonic principles: impulse (pravati) above and energy (svadha) below. (A Vedic Reader for Students, London: Oxford University, 1917, p.210.).’ (Who can say whence it all came from?, ‘Rig Veda’, X, 129, in Eliade 1996)
- ‘The Teacher and his remaining followers fled to a place of refuge called “The land of Damascus”. It has been suggested that this was a cryptic designation of Babylonia..., or that “Damascus” is a symbolical name for Qumran [settlement of the sect]… If “Absalom” is also a symbol, it doubtless recalls the rebellion of Absalom against his father... On the other hand, ... this allegorical solution may not be convincing. The allusion may then be a straightforward one. ‘ (Verme 1987 p.32)
- In ‘the domain of religious thought and behaviour’... a search is being made for the original meaning of issues with which we have become almost too familiar and which with the passing of the centuries have tended to become choked with inessentials, and it has led not only to a preoccupation with the primitive... fully
developed expression of these issues in the Scriptures, but also a desire for knowledge and understanding of their prehistory.’ (Vermes 1987 p xv-xvi)

Among obscure vocabularies, some are less difficult. Medieval cryptic writings and ancient magical spells possessed codes of interpretation. Although complex and arcane they may be (eg Power 2002, Wong 1997), they were systematic. Many ‘inspired’ writings can make sense literally in a context (eg political, socio-moral, psychological), and they are thus interpreted. Isaac Newton (Newton 1994, 2006a & 2006b) studied them and devised an interpretive system for the apocalyptic language of the later biblical prophets (eg DANIEL, REVELATIONS). Their style of expression was popular (and the experiences common) from about the third century BC until the early centuries AD, and then disappeared (unexplained: Bible, New World Translation 1961). It only emerges again exceptionally in later works of an ‘inspired’ nature (eg Sun Bu Er; see Cleary 2000) – the New Age would say ‘channelled’ works. An earlier form, more naturalistic, relates to the framework of ‘The Earth’ (discussed in <Ancient perspectivalism, The Earth, & the East> chapter) and is characteristic of prehistoric oral tradition as recorded in archaic myths. The words studied here are of this kind. Some of the main words listed are subject to countless speculations, and were already regarded as mysterious by the time the texts were compiled around 850-700BC, (eg return, place, above, below – see <Extract F9\ Deep confusing questions>). The words are similar in both Eastern and Western archaic cultures. I focused more on Chinese literature, and on Biblical and Egyptian traditions. The vocabulary is tabulated so as to make apparent the analogies of motion (nexial, such as ‘whirlwind’), of shape (topographic).The ‘correspondence’ of meaning, I propose, relates to topologic deployment (eg the ‘mountain’ means topologically the same as the ‘tree’, ‘staff’, ‘rod’ or as ‘rising’ – a projection ‘up’). These distinctions are consistent with Newton’s approach:

‘The language of the Prophets being hieroglyphical had affinity with that of the Egyptian Priests & eastern [sic] wise men. […] The original of the hyperbolic language of the Prophets is the comparison of a Kingdom to the Frame of Heaven & Earth, & [sic] the parts of the one to the like parts of the other.’ (Newton 2006b)
The combination (nexial & topography) is directly related to the idea of perspective landscape, and so is intimately linked to the framework of ‘The Earth’ as well as to certain dreams expressing patterns of activity, and to daily life gesturing (see chapters <Nexial-topologic deployment>, <Many perspectives>, and <Ancient perspectivalism>).

The aim of producing the table below, is to display some of the similarities in vocabulary that led me to explore the possibility that the most confusing ‘obscure’ statements and words in the ancient texts might usefully be understood as nexial-topologic expressions rather than realistic or naturalistic descriptions. I am little familiar with conventional exegesis of any ancient texts, and so the reader should not expect here such classical textual analysis, nor a quest for any conventional ‘source’ meaning. The words, to me, simply ‘name a likeness’: it is the ‘shaping’ process they suggest that I find significant in generic descriptions that can be understood as an ‘imaging’ of how a ‘non-local’ situation ‘presents’, generally interpreted in terms such as the physical and temporal realities that ‘humans’ experience as ‘real’, ‘natural’, or a ‘created world’ (eg ‘Creation’ that occurs or appears). Consequently, various specific details are skipped in the quotations (locations, people’s names, etc.) to highlight sections that can bear nexial-topologic generic meaning. Sections that cannot, usually relate to particular perspectival interpretations. This is often the case for explanations given after a report of experience (eg a dream or vision and its interpretation, which appears to have been problematic for many of the experiencers themselves). This fresh-eye view of the meaning of some of the old words and sayings brings out striking similarities between the analogical shapes apparent in the words and the shapes of abstract models found in the sciences that use topology. In these texts, the statements do not differentiate things as much as modern thinking does, and discussions involve a global ‘story of the world’. This world is the ‘whole’ human world as it was known to the archaic author, with its historical development and limits, its then current manifestations, and the perspectival deformations of its general frameworks of knowledge and experience, or its Earth-models:

‘Plutarch mentions [this] also… He who worships by turning about, becomes a
symbol of the earth... So then it was one design of the first institution of the true religion to propose to mankind by the frame of the ancient temples, the study of the frame of the world....and thence... in the knowledge of the true the frame of Nature.’ (Newton 2006a, ‘The Original of Religions’)

The ‘frame of the world’ can also be the frame of the body-mind (see figure 35): the vocabulary used in medieval Chinese inner alchemy to model the ‘inner landscape’ is remarkably similar to that used in the Bible for the socio-political landscape, which Newton calls the ‘body politik’, and to modern scientific descriptions of the 4-dimensional landscape that is ‘spacetime’. In particular, all three place much emphasis on growth (an unfoldment) and on enfoldment (eg notions of sphere, ball, womb, boundary, etc.):

‘The language of inner alchemy strikes an outsider as that of a fanciful and poetically imagined cosmic body populated with spirits and animals, buildings and roads, streams, peaks and valleys, in a topographical landscape of the interior traveller’s voyage into a fantastical realm. However, Yuan Huang shows how the alchemical body was mapped precisely onto the medical one of circulation channels and zang and fu organ systems... and how the poetical inner journeys were correlated with body states imagined in concrete somatic terms. [...] The most profound metaphor was gestation and ... embryo.’ (Furth 1999 pp.198-199, see also Allen, 1997)

These frameworks culturally underlie all other perspectives, and view existence always basically in terms of extremes and reactions to extremes (2 forms of deployment), not of (un-deploying) ‘ease’, which is not remarkable enough to deserve even a mention
The table of nexial-topologic vocabulary

The following table is a short extract from a twenty-eight-page table in which I collated expressions from the various ancient texts I was reading, in order to detect patterns and similarities with modern ‘advanced’ science. In the left column, are one or two of the most commonly used words, corresponding to an iconic image. The right column lists other words that are related to the same or a closely derived analogy, and gives some examples of the use of the word, though quotations, and sometimes a suggestion concerning the analogy, metaphor, or similarity covered by the words. In the left column are also added words, preceded with the sign ‘\’: this means ‘see also’, signifying that other words develop related analogies: go to the line headed with these words.

<table>
<thead>
<tr>
<th>Typical word</th>
<th>Related words, quotations, comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>smooth, even</td>
<td>smooth: even, full, even, one, Fullness, Oneness, scattering-gathering seeking the ‘smooth’ texture, ‘corrects all things and makes them to be right and smooth and free’ (Plato Timaeus) evened out, uniform, regulated… Vs uneven, even as (Bible) evening out, straight, straight up, standing up straight, straightening, upright, correcting, righteous</td>
</tr>
<tr>
<td>the Great</td>
<td>Newton gives 3 series of interpretations. In the second, he account for the value of the ‘Great’: ‘Hitherto I have considered ye Univers only so far as its parts are compared to ye parts of a Kingdom in a due proportion: which I chose to do because this was ye original of ye figurative Language of ye Prophets, &amp; therefore must be ye rule to understand it. But it happens sometimes &lt;for&gt; that for ye more convenience of describing any subject, the proportions are changed &amp; then ye interpretation must be changed accordingly. Thus, although a Tree originally signify an inferior great man, yet if it be represented large beyond proportion so as to reach to ye ends of ye earth it must signify a King whose dominions are proportionally great. Dan: 4 […]’ (Newton, 2006b) In other contexts, the ‘Great’ and the ‘small’ take other names such as ‘world’ and ‘small egg’, above and below, and in physics ‘the small &amp; the large’ (Hawking &amp; Penrose 1996), low and high energy, and in medicine, ‘primary’ and ‘secondary’.</td>
</tr>
<tr>
<td>2 waters/ (2rains), many waters 2 deaths</td>
<td>2 rains, 2 waters: ‘For He has given you the former rain (or the teacher of righteousness) faithfully. \And he will cause the rain to come down for you – The former rain, and the latter rain in the first (month). \ The threshing floors shall be full of wheat, \ And the vats shall overflow with new wine and oil.’ JOEL 2:22-23. ‘The Lord God of hosts, \ He who touches the earth and it melts, \ And all who dwell there mourn; \ All of it shall swell like the River, \ And subside like the River of Egypt. \ He who builds His layers in the sky, \ And has founded His strata in the earth; \ Who calls for the waters of the sea, \ And pours them out on the face of the earth – The lord is His name. AMOS 9: 5-6-</td>
</tr>
<tr>
<td>sky</td>
<td>a ‘SKY’ can be construed nEXially as a ‘High’ or a double-high, physically or in abstract manner, an operational boundary to pass through, a nEXial stage or break-through</td>
</tr>
<tr>
<td>Sky, earth, heaven, ceiling, floor, limit</td>
<td></td>
</tr>
<tr>
<td>sky 1, sky 2 (2 ‘highs’): strong-Great, water- waters, waters-great waters, laws-Great Law (eg vedic Rta) rain-earlier rain, former rain-latter rain, old heaven and new heaven, high-most high, the vault above and the void below</td>
<td></td>
</tr>
<tr>
<td>[vedic:] ‘1st dying’ – not dying a second time’ thanks to asuniti (conducted breath/ Life, vitality) (Miller 1974 p.144-45) ‘Affliction will not rise up a second time. […] It will eat you up like a locust. The place where they [locusts] are is not known’ NAHUM 3:18</td>
<td></td>
</tr>
</tbody>
</table>

‘The Ethiopians are called by Isaiah a people of great might or double power.’ (Kieffer 2000 p.69) |

‘The word Shen in Egyptian is a circle, an orbit, a whole. It was the circle of the year. But Shen is also Twin, and Two. The circle of the year being first divided into the Two Times, and the Shen, tunic, was first put on at puberty, when the second of the two phases was attained – the child and the man, etc.’.’ (Kieffer 2000 p.9-10) |

‘The goddess Maat embraceth thee at the two seasons of the day. May Ra give glory and power, and truth-speaking and the appearances as a living soul so that he may gaze upon Heru-Khuti to the KA of the Osiris the Scribe Ani […] and the voices of those who make merry are in the Great Place.’ (Egyptian Book of the Dead) |


‘In the first chariot were red horses and in the second chariot black horses, with the third chariot white horses, and with the fourth chariot dappled horses — strong steeds, … what are these…?’ ZEC 6:2 |

<p>| Division of the waters: |
| ‘In mythology, water is the primal element. All begins with [N3p-stir] or issues from [N2p-create worlds] the Water.…. In the beginning, all came out of the Nu (Nun), the waters of the firmament. Being, existing, then is figured as an escape out of the waters.’ [flood] |
| ‘Water was the first cause in Egypt. An inscription on an Egyptian vase shows the Goddess Nut standing in her sycamore tree from where she pours the Water of Life.…. Here we see that water precedes and brings the creative cause of the Breath of Life, and this is the relationship and sequence of the Two Truths. In |</p>
<table>
<thead>
<tr>
<th>sky, boundary (topographic or pattern)</th>
<th>Genesis, we read: “And God said, Let there be a firmament in the midst of the waters. And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament, and it was so.” (Kieffer 2000 p.13) 'The blood of the female and the vivifying fire of the male are the two factors of human creation.... regenerated in baptism, reborn and saved as by Fire and Blood, or the Water and Breath', in the purifying rite.’ (Kieffer 2000 p.14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>cross over</td>
<td>a ‘sky’ can be construed topographically as a ‘plateau’, a limit, a ceiling, a roof, a containment, a structural boundary to cross over, a connective pattern (flat sheet) Sky 1, sky 2, sky 3: woman-Mother-Goddess, sky-earth-heaven, earth-man-heaven, ‘time, times, and a half’ DAN 1:7, ecstatic heat-fire-light, man-gods-Great God of Life Power</td>
</tr>
</tbody>
</table>
| cross the great water | ❇️ wāng (1 20 in Harbaugh 1998) the one (yi) who connects heaven, man and earth, and ❇️ chuān (2 1 in Harbaugh 1998) explained naturalistically as ‘ pictograph of a small stream of water’ ❇️ kuài (2 2 in Harbaugh 1998) two small streams ❇️ chuān (2 3 in Harbaugh 1998) river, flow, boil; plain, an area of level country 'It furthers one to cross the great water. Before the starting point, three days. After the starting point, three days.' (Wilhelm 1989 I Ching, 18. Ku, [Decay] Work on what has been spoiled, p.75) ['cross the great water’ is still unexplained by scholars, it seems] ‘The Lord God of hosts, 
… He who builds His strata in the sky, And has founded His strata in the earth; 
Who calls for the waters of the sea, And pours them out on the face of the earth – The lord is His name.’ AMOS 9: 5-6-90; wall, rampart |
| activate | Primus Movens, see also ‘Effective causation’ (Piaget 1951), impulse, and forms of vitalism and animism stir, ‘about to begin’, start, begin, appear, appearance, occurrence arising, rise (morning, for East), raise, rise up, quicken, increase, raised up to the sky, carried into the sky, carried away to firmament, ascend, …raise the sky, raise the firmament on the shoulders, carry the world on the shoulders snake, serpent, crocodile (Egypt) strong, vital energy, strength in the neck, strength in the shoulders, exhausted, power, stimulated, excited, war- battle / love-sex, chariot-horses, cry out to god(s), ‘conveyances’ (see <Ancient perspectivalism>) power ‘come, come up, bring up, lift up, come out, go out, bring out, born, coming to existence, creation, take out, drive out, bring forth, opposite: fall (evening, West , end) ‘that the scarab was self-produced’; ‘wishing to procreate’; ‘the young emerged’; ‘that all life sprang’ (Hope, Murry, 1985 p.165) |
| wind | Winds: breeze, whirlwind, storm But I scattered them with a whirlwind (among all the nations) which they had not known. Thus the land became desolate (after) them, so that no one passed through or returned.’ ZECH 7:11-14 ‘4 winds of heaven ZECH 2:6 ‘Their face(s)’ (are) set [assembled] (like the) [like/by..] east wind.’ HAB 1:1-10 ‘in the day of the east wind’ ISA 27:8 [collated translations, referring to the warning to Chaldeans:] ‘Then (his) [they] (mind/spirit/wind) [wind] changes, and (transgresses) [pass over, passes on,
| passes through]; \ (He) [they] commits offense, (ascribing) this ((his)) power to his god. HAB 1:11 – [I read: Then wind changes and passes over; they ‘sin’, ascribing this power to their god.]
| ‘whirlwind and storm, lioness roar, … about using ‘whirlwind and storm’ to beat affliction, overflowing flood-darkness, create
| stronghold, ‘burst your bonds apart’ NAHUM 1:13
| fire, dry, angry, ‘dry up completely, when the east wind touches it’ EZE 17:10
| Wood
| Within the earth, wood grows: the image of pushing upward.’ (Wilhelm 1989 I Ching, 46, Sheng, Pushing Upward, p.179)

| cup, flask, cone, basket
| \ below
| \ valley
| \ mountain, horn
| \ small ball
| \ bow
| cup (container cone), ‘crucible (‘Fire in the crucible’, Eliade 1978)
| basket (woven container), woven basket, ‘basket of cotton bolls’, seven baskets (see topologic image of basket’s empty inside)
| ‘Machito, one of their gods,… said “Bring me seven baskets of cotton bolls”, and they brought him… and he taught… to weave a magical fabric from the cotton, and… the breeze carried it away toward the firmament, and in the twinkling of an eye it was transformed into a beautiful full-orbed moon.’ (Powell 1880 quoted in Kieffer p.60)
| flask (round container), bottle, jar, amphora never empty, Klein bottle in topology
dark cave with an entrance (round container) (associated with return to origin and restoring)
| hook, fish hook, sickle, claw, tooth
| bowl (beggar monk receiving), chalice, ladle, spoon, boat, ark, bottomless (∞)
cup
| ‘The golden spoon’ (EE in Edwards 2000 p.97)
| inverted cup: the vault above, celestial vault, , solid arch, [astronomic sky]:
| firmament, celestial heavens, (real) sky, rainbow
| ‘The problem of diversity is so topologically distinct from the problem of transformation [anatomical change] that a different iconography must be employed for basic illustration. Just as the ladder provides a canonical icon for transformation misconstrued as progress, the same error falsely equating evolution with progress yields a canonical icon for diversification: the cone of increasing diversity.… The cone of increasing diversity resides largely in textbooks and professional publications for scientists [rather than for the general public] – but it constrains thought no less.’ [...] (Gould 1995 p.61)
| ‘[…] this icon of a grass field with most stems mowed and just a few flowering profusely, while circumventing (and almost inverting) the canonical cone …’ (Gould 1995 p.67) (see <Extracts F5 Gauging thinkers>)

| turn (right or left, or not turn)
| \ bow
| \ hand
| snake, winding around, image of archaeological torque
| ‘Only be strong… do not turn… to the right hand or to the left’ JOSH 1:7
| ‘The world turns in a counter-clockwise direction with respect to the north-south axis, and this left-turning is also characteristic of living cells. …“Children achieving well socially and academically during the developmental years draw circles in a counterclockwise direction with either hand. The tendency to draw circles in a clockwise direction is called torque. Aberrant behavior is found more frequently in samples of children showing torque than in those with no torque. The resulting confusion of mixed cerebral dominance interferes with the child’s acquiring important cognitive, language, and social skills’. “ Blau, quoted in Kieffer 2000 p.114) [The opposite of left torque, a tendency to right, is deemed, since antiquity but not earlier, better for raising ‘spirit’ in renunciation of the social-mental world.’] ‘the right eye and ear are not as strong as the left, and the left and foot are not as strong as the right’. (Ni 1995 Neijing Suwen p.23)
| hand: right-left side, turn \(\not\) bow | left-hand, right-hand, sides, two sides  
see \(<\text{Extract F10}\\ \text{Left- Right Hands}>\), \(<\text{Extract F11}\\ \text{Red}>\) |
|---|---|
| return | return (without-within): ‘beginning to stir’ rather than ‘stir up’, return to the Beginning,  
‘Return to Me, and I will return to you, Says the Lord of hosts, “But you said, In what way shall we return?”’ [MAL 3:7]  
‘no one passed through or returned.’ [ZECH 7:11-14]  
restore, return to quiet after a storm, return to nature  
‘So I will restore to you the years that the swarming locusts have eaten’ [JOEL 2:25]  
reborn, revived, renewed, return to the [point] Source, return to Original nature,  
‘Yet you have not returned.’ [AMOS 4:9]  
‘You have not returned to me’, Says the Lord, “I also withheld rain from you when (there were) still three months to the harvest’ [AMOS 4:6-7]  
‘Return to the LORD your God,...\And he relents from doing harm.\ Who knows (if/that) He will turn and relent, \'And leave a blessing behind him.’ [JOEL2:13]  
re-Turn (turn again), stirring in the alchemical crucible, eternal return |
| \(\cup\) | \(\cup\) |
| \(\cup\) | \(\cup\) |
| bow \(\cup\) turn \(\not\) straight | bowed, crooked, twisted, wicked, bend, warp, twist…  
see Chinese characters, or example 龔 (651 in Harbaugh 1998) bow,  
curved, arch, explained naturalistically as ‘pictograph of a bow’ [can also relate to posture]  
derivations by sound (gong) into corresponding meanings: labour, bind (firm, strong), , good result, fair, element mercury (linked to ‘jade girl’, and ‘silver’ body),  
and into other word-meanings pillar (large peg, post), dwelling, fold hands on breast (salute), and 龔 (652 in Harbaugh 1998) body; personally, in person.  
Compare to: ‘I will break the bow of Israel in the Valley of Jezreel.’ [HOSEA 1:5] |
| place \(\cup\) ball \(\cup\) house in Land \(\text{<F9>Deep confusing questions>}\) | mysterious place (or gate), spiritual place (not existing in space-time but ‘very real’)  
dark place  
place below (see Below \(\text{\textbar Valley}\)The ‘gathering place, ‘above’ and ‘below’  
The Classic says: women are a gathering place for yin influences, dwelling in dampness. Form the age of fourteen [sui] on, their yin qi wells up and a hundred thoughts run through their minds, damaging their organ systems within. […]  
Sometimes as they relieve themselves at the privy above, Wind from below enters, causing the twelve chronic illnesses.’ (Furth 1999 p.71)  
cave with an entrance: Plato’s cave, ‘In the Dark Places of Wisdom’ (Kingsley 1999)  
’tigiray said that woman is not situated, “does not situate herself in her place”,  
that she serves as a thing and is thus nude. I have intuitively felt the need to  
‘clothe” myself, to find the Place within me, to move from object to sentient subject,….’ (Livingstone 2005 p 4-5) (a woman’s modern language)  
‘And where is the place of understanding? Man does not know its value. Nor is it found in the land of the living. The deep says “[it is] not in me”. And the sea says “not with me”. […] It is hidden from the eyes…’ [JOB 28:12-14 & 21]  
‘As I sank into meditation I found myself descending through space and time, as if from high above the earth… northern sea… I’m going in search of the mysterious lands beyond the vast oceans far to the south… land beyond turmoil, beyond time. I’m going to find that place… constantly changing colours… boundary…  
began to dissolve… // mountain pass… did more mountains lie ahead?…’  
(Edwards 2000 p.42-54 and exegesis pp 54-86)  
‘Those born of truth spring from a fountain of light, but those born of falsehood  
spring from a source of darkness.’ [Vermes 1987 p.43, Dead Sea Scrolls, 1QSIII] |
13-14:1) ‘The Lord said- As a result of my sustaining power this world, with its Gods, men and Asuras, forms the notion that recently the Lord Shakyamuni, after going forth from his home among the Shakyas, has awoken to full enlightenment, on the terrace of enlightenment, by the town of Gaya.’ (Buddhist texts)

‘To Him belongs the Kingdom of the heavens and the earth’ (Qur’an. LVII in Eliade 1996)

‘And the mountain of the (temple) house’ MICAH 3:12


small ball

\place, cave
\return

opposite:
face, scatter, remnant, remain, residue, open

small, small-ball, ‘the inside’ (dark, full), (elusive ‘One’ ↔ ‘badly behaved’ 1)
see < F12 Mysterious pass >, < F14 Mysterious Female>: flocculent cotton, cotton ball,
further derivations: clouds, mist, vapour, smoke

‘I will make you small among the nations. […] You who dwell in the clefts of the rock, whose habitation is high. […] thou you ascend as high as the eagle, though you set you nest among the stars, From there I will bring you down.’ OB 2-4

seed, egg, acorn, embryo, ‘womb breathing’ in Chinese inner alchemy, pearl

The resemblance between the pearl developing in the oyster and the foetus […]

Oysters, since they contain the yin principle only, are favourable to parturition and sometimes precipitate it…. When ‘gravid with the pearl’, the oyster pang is like a woman carrying the foetus in her womb.’ (Eliade & Mairet 1961 p130) [pregnant = gravid + growth + parturition ]

gather, gather-in, recollection, assemble, self-contained (\land \scatter)

And no one gathers’ NAHUM 3:18

‘ “gathered in”, meaning that he died” (Vermes 1987 p. 4)

ground, depth

‘Machito, one of their gods,… said “Bring me seven baskets of cotton bolls”, and they brought him… and he taught… to weave a magical fabric from the cotton, and… the breeze carried it away toward the firmament, and in the twinkling of an eye it was transformed into a beautiful full-orbed moon.’ (Powell, 1880 – quoted in Kieffer p.60)

‘rolling the balls of dung in which it encloses its eggs’; ‘shaped into a ball, rolling it from east to west with his hind legs’; ‘rolled the globe of the sun across the sky.’ (Hope 1985 p.165)

‘This formation is very useful when it comes to rolling the balls of dung in which it encloses its eggs. The ancient Egyptians believed that the scarab was self-produced and… the male beetle, wishing to procreate, sought out a piece of ox dung which he shaped into a ball, rolling it from east to west with his hind legs. The ball was then buried in a hole, specially dug, and left for twenty eight days. On the twenty-ninth day the beetle threw the dung into water and the young emerged…. so it was believed that all life sprang from the Sun… rolled the globe of the sun across the sky.’ (Hope 1985 p.165)

sphere

bubble

\hand (right-left)

sphere, globe, full-orbed moon, womb, belly, sack, cave, hole, nest, chamber, encircle,
circle, encircle, girdle, orbit, cycle (- ellipse), Universe, cosmos, heavenly bodies, self, body, onion peel expanding layers, ring-torus

Transformed: ‘in a twinkling of an eye it was transformed into a full-orbed moon’ (Powell 1880 in Kieffer 2000 p.60)

‘The Kabbalists, who have preserved some of the most ancient images, have the double triangle orsic-cornered figure of the two heavens, called the Shield… Agl means to circle, be round, turn, or wind round a circle. The Aglah is a rolling thing, a car, a chariot.’ (Kieffer 2000 p.65)

[Comment on the Tarot arcane 'The Fool'] ‘The card… represents a man in baggy dress who is… leaning on a staff …. The man is wearing a yellow [conic] bonnet topped by a red ball… [and] small bell. The fool is walking from left to right. He
<table>
<thead>
<tr>
<th>gather</th>
<th></th>
<th></th>
<th>gather, hold together (dualist notion)</th>
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<tr>
<td>recollect</td>
<td>(a Christian meditative practice)</td>
<td></td>
<td></td>
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<tr>
<td>‘gathered in’</td>
<td>(shrinking, concretion)</td>
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<td>‘He could not assist his animals to give birth or help them if they fell into a pit; he could, however, pull a man out of water or fire with the help of a ladder or rope.’ (Vermes 1990, p. 12-13, see also p. 37) ‘...to ensure that no friendly contact occurred between his congregation and the “men of the Pit”, i.e. everyone outside the sect.’ (op.cit. p.10) ‘a faction described as “seekers of smooth things”, “removers of the bounds”, and “builders of the wall” (op.cit. p. 24) “gathered in”, meaning that he died’ (op.cit. p. 24)</td>
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<tr>
<th>Below- Above</th>
<th>before-after</th>
<th>\see valley</th>
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<td>see &lt;F9\ Deep confusing questions&gt;</td>
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‘The Classic says: women are a gathering place for yin influences, dwelling in dampness. Form the age of fourteen [sui] on, their yin qi wells up and a hundred thoughts run through their minds, damaging their organ systems within. […] Sometimes as they relieve themselves at the privy above, Wind from below enters, causing the twelve chronic illnesses.’ (Furth 1999 p.71) (see also <F9\ Deep confusing questions>)

‘Water was the first cause in Egypt. An inscription on an Egyptian vase shows the Goddess Nut standing in her sycamore tree from where she pours the Water of Life.... Here we see that water precedes and brings the creative cause of the Breath of Life, and this is the relationship and sequence of the Two Truths. In Genesis, we read: “And God said, Let there be a firmament in the midst of the waters. And God made the firmament, and divided the waters which were under the firmament from the waters which were above the firmament, and it was so.” (Kieffer 2000 p.13)

Valley: ‘One sits oppressed under a bare tree and strays into a gloomy valley.’ (Wilhelm 1989 I Ching, 47, K’un, Oppression, Exhaustion, p.182)

‘I wish to see the emblematic figures of the ancients,—the sun, the moon, the stars, the mountain, the dragons, and the flowery fowl (= the pheasant), which are depicted (on the upper garment); the temple cups, the pondweed, the flames, the grains of rice, the hatchet, and the symbol of distinction, which are embroidered (on the lower Garment).—(I wish to see all these) fully displayed in the five colours, so as to form the (ceremonial) robes;’ (Legge 1879)

‘It furthures one to cross the great water. Before the starting point, three days. After the starting point, three days.’ ) Wilhelm 1989 I Ching, 18. Ku, [Decay] Work on what has been spoiled, p.75)

‘I destroyed his fruit above, \ And his roots beneath’ AMOS 2:9

the vault above and the void below

‘You shall give it to Eleazar the priest, that he may take it [blemishless red heifer]
outside the camp and it shall be slaughtered before him' NUM 19:3

| below valley negative: dark unbounded | mysterious, hidden, lost, forgotten, unseen, unborn, invisible, veiled below, 'the place below', underSide, underWorld, bottom, beneath, hind, beyond, evening, night, dark place, dark radiating body, dark energy, dark matter, the old dark land, The Dark, Darkness, deep sleep, dark and cold, murky waters, Wet, earth melting, flood [Indian Cosmogony: ]'5. This (universe) existed in the shape of Darkness, 1 unperceived, destitute of distinctive marks, unattainable by reasoning, unknowable, wholly immersed, as it were, in deep sleep. 1 note by Eliade: Tamas, darkness both physical and mental. The Samkhya system finds considerable significance in this stanza: tamas, one of the three twisted strands (gunas) of cosmic substance, represents inertia.' (The Laws of Manu, 1, 5-16 in Eliade 1996) place of heaviness "down below" (Miller 1974 p162), hell, ‘She’ohl’ (Old Testament))

| valley negative: dark unbounded | shadow, shade, destruction, 'shadow of death', dark human nature, Dark Abyss, pit 'The Deep', abyss, abyss of 'the Wet', deep water(s), the sea, depths of the ocean, Great Sea valley (opposite of mountain), cleft of the rock, '(You who) dwell in the clefts of the rock, whose habitation is high; ...who will bring me down to the ground? OB 1:3, well, pit [fall in pit, going down to the pit, pit of 'Darkness', of suffering], bottomless pit, bottomless abysses, bottomless cup, dark night of the soul, The One, 'apeiron' (Greek : 'no boundary', in Kingsley 1999, Eliade 1954), ground, foundation, element Earth, substance, hollow place, 'resting place'...

| hidden | mysterious, hidden, lost, forgotten, invisible, unseen, unborn, veiled, concealed, covered, mystery, imperceptible, subtle, indiscernible, ineffable, hidden |
fountainhead, hidden wisdom (gnosis) non-existent, sacred, secret symbols, codes & teachings, (see <F5\ Gauging thinkers \ Gould & Silvers>)

| above, mountain, horn \ cup, cone, tree \ head-great \ sky, heaven | mound, mountain (the opposite of valley), mount, hill, rock, tent (camp), island, high, high places, above, bring on high dry, waste, wilderness, ‘At the foot of the mountain, the lake: the image of decrease.’ (Wilhelm 1989 I Ching, 41, Sun, Decrease, p.158) , ‘At the foot of the mountain, thunder […] ‘King offers him Mount Chi’. Good fortune.’ (Wilhelm 1989 I Ching, 27, The Corners of the Mouth, Providing Nourishment, p.107), Mount Chi is in western China, the homeland of King Wén, whose son, the Duke of Chou, added the words of the individual lines [of the hexagrams].’ (Wilhelm 1989 I Ching, 27, The Corners of the Mouth, Providing Nourishment, p.107)

| Opposite: valley see <F9\ Deep confusing questions> | ‘And the mountain of the (temple) house’ MICAH 3:12 ‘He who treads the high places of the earth’ AMOS 4:13-horn (surface cone, inverted cup) (horn of animal, beast, dragon, bull), claw (lion, tiger, eagle), teeth of a lion, lioness, cup & horn associated with growth, increase, progress: ‘within the black hole, the bottomless cup of refreshing lifelong learning – growth in understanding.’ ‘Making progress with the horns is permissible only for the purpose of punishing one’s own city.’ (Wilhelm 1989 I Ching, 35, Chin, Progress, p.139) ‘Under heaven, wind. […] He comes to meet with his horns.’ (Wilhelm 1989 I Ching. 44, Kou, Coming to meet. p.170) (see also \ cone) (see <F5\ Gauging thinkers \ Gould>) ‘The [interpretive] biases rather emerge from the canonical shape of… trees above their common trunk… Nothing in [evolutionary] theory requires a smooth upward and outward flow for the tree, the feature that sets the tree’s shape as an inverted cone or funnel.’ (Gould 1995 p.63) ‘[…] this icon of a grass field with most stems mowed and just a few flowering profusely, while circumventing (and almost inverting) the canonical cone …’ (Gould 1995 p.67) Compare to vocabulary found in Chinese Feng Shui (grass, field, stem) and in the Bible (mow grass or hew down trees, cut down, cut off…), and in both, the notion of fruiting.

| cover, fabric, blanket, face \ cup \ basket \ land \ day \ mark, seal \ bow also | crossing threads, braids, weaving, net, textile fabric, knitting, fabric of space, fabric of existence), basket, web, rope, snake, tie, bounds, densely matted hair, blanket Net, knitting, crossing threads, netting, skin, texture , seeking the ‘smooth’ Skin texture in ancient Chinese medicine clothed, textile, cloth, clothes, garment, robes, sack-cloth, not naked, cover nakedness, upper garment and lower garment (Wilhelm 1989 I Ching, p 275 ) (Waltham 1971 Shu Ching, p.32) ‘The term ching is of textile origin, and signifies the warp threads of a web and their adjustment. An easy application of it is to denote what is regular and insures...
| spread, flow | regularity.... The term shu simply means writings or books: the pencil speaking. It may be used of a single character or of books containing thousands of characters.' (Waltham 1971 p.249)  
‘The word Shen in Egyptian is a circle, an orbit, a whole. It was the circle of the year. But Shen is also Twin, and Two. The circle of the year being first divided into the Two Times, and the Shen, tunic, was first put on at puberty, when the second of the two phases was attained – the child and the man, etc.’ (Kieffer 2000 p.9-10)  
‘Irigaray said that woman is not situated, “does not situate herself in her place”, that she serves as a thing and is thus nude. I have intuitively felt the need to ‘clothe’ myself, to find the Place within me, to move from object to sentient subject’ (Livingstone 2005 p.4-5)  
face , face to face, faces, façade  
‘When I am doing wrong, it is yours to correct me;—do not follow me to my face’ (Waltham 1971 Shu Ching)  
veil, cloak, mantle, shawl (and inversely unveiling, uncovering the hidden) , lid, seal  
‘And pours them out on the face of the earth ’ AMOS 9: 5-6  
‘(Their) face(s[?]) (are) set (assembled) (like the/like/by) east wind.’ HAB 1:1-10 |
| passing | \ cup \ face  
roof, ceiling,  
roof: ‘she had brought them up to the roof’ JOSH 2:5 /  
‘this is sending me through the roof!’ ‘I’ve hit the ceiling, can’t go any further’  
\ cut off  
‘You should not have stood at the crossroads \ To cut off those among them who escaped, \ Nor should you have delivered UP those among them who remained \ In the day of distress.’ OB 14 |
| pass over | passing, pass through, pass over, break-through, pass through the eye, eye of the storm, gate, door, porch, flow, overflow, river(s)  
‘establish justice in the gate’ AMOS 5:15 , open the gates of the rivers enter, opening(s), mouth, apertures of the body, windows  
‘Thou passest over the heights of heaven’ (Egyptian Book of the Dead)  
‘Enter [at the windows] like a thief’ JOEL 2:9,  
‘and in the twinkling of an eye it was transformed into a beautiful full-orbed moon. (Powell1880.in Kieffer 2000)  
‘But do not seek Bethel, \ Nor enter Gilgal, \ Nor pass over (to Beersheba)’ AMOS 5:5  
‘no one passed through or returned.’ ZECH 7:11-14  
fountain, spring, source, origin, beginning, centre, core, hidden fountainhead, source  
head \ great  
come out, go out, bring out, take out  
overflow, flood, flow, river, gorge of a valley |
| cross over | go over, go across, go over the river, go over the cataract (on the Nile)  
cross over the Great Water, cross over the river,  
‘It furthers one to cross the great water. Before the starting point, three days. After the starting point, three days.’ (Wilhelm 1989 I Ching, 18. Ku, [Decay] Work on what has been spoiled, p.75)  
Break the (gate) bar AMOS 1:5  
‘Break-thought. One must resolutely make the matter known at the court of the king. It must be announced truthfully. Danger. It is necessary to notify one’s own city. It does not further to resort to arms. It furthers one to undertake something.’ I Ching, 43. Kuai, Break-through, p. 166.  
‘Six at the top means: One must go through the water. It goes over one’s head. Misfortune.’ (Wilhelm 1989 I Ching, 28, Ta Kuo, Preponderance of the Great,
p.114)
\cut\off, cast in the midst of fire, thrown into the water

head, staff, tree
Great
\cup, cone
\mountain

snake, (twisted) thread, rope, cord, tie, bounds,
tunnel, tube, wormhole,
tree, pine tree (in China), cypress tree, magic tree, tree of Life, tree of
Knowledge, stalk(s), stalks of heaven [China], grass, herbs,
staff, arrow, pillar, rod, lampstand, tower, ladder to heaven, plumb line, beam,
flow, river, street, road fountain, overflow, flood, source, path, way,
head, head of snake, of dragon

‘But we will walk in the Name of the Lord our God forever and ever.’ MICAH 4:5
‘Horus next ot the tree of life, bruises the serpent’s head’ (comment on an image,
Kieffer 2000 p.254)
Motion and pathway (Kieffer 2000 p.59)
The goddess Maat embraces thee at the two seasons of the day. May Ra give
glory and power, and truth-speaking and the appearances as a living soul so that
he may gaze upon Heru-Khuti to the KA of the Osiris the Scribe Ani […] and the
voices of those who make merry are in the Great Place.’ (Egyptian Book of the
Dead)

‘The specific meaning of the four attributes became the subject of speculation at
an early date. The Chinese word here rendered as “sublime” means literally
“head”, “origin”, “great”. This is why Confucius says in explaining it: “Great indeed
is the generating power of the Creative; all beings owe their beginning to it. This
power permeates all heaven.” For this attribute inhere in the others as well…. The
beginning of all things lies still in the beyond in the form of ideas that have
yet to become real. But the Creative furthermore has power to lend form… the
process is represented by an image from nature: “The clouds pass and the rain
does its work, and all individual beings flow into their forms.” ’ (Wilhelm 1989 I
Ching, 1, Ch’ien, Creative, p.4) Compare to:
‘It further one to cross the great water.’ I Ching, 18. Ku, [Decay] Work on what
has been spoiled, p. 75; ‘In times of strife, crossing the great water is to be
avoided, that is, dangerous enterprises are not begun.’ (Wilhelm 1989 I Ching, 6,
Sung, p.29)

‘He will teach us His ways, \ And we shall walk in his paths.’ MICAH 4:2
‘The gates of the rivers are opened’ NAHUM 2:6

cut off, cast in the midst of fire, thrown into the water

pillar

Axis mundi (Eliade, 1961 and 1974)
pillar, rod, staff, stand in the Bible (particularly prophetic dreams), twisted wire,
tube, cord in other literature relating individual spiritual dreams:
‘Sometimes I would see a beautiful, slender silver-colored tube, standing like a
pillar from the muladhara to the throat.’ (Muktananda 2000 p.134)
‘Yet this [Age of Huang I still] did not come up to the Tao of Fu His. Turning back
to ancient times, the Four Pillars were shattered and the Nine Provinces
dislocated. The sky did not cover [the earth] completely; […] Nü Kua fused
together stones of the five colours with which she patched up the azure sky. She
cut off the feet of the turtle with which she set up the Four Pillars. She
slaughtered the black dragon. In order to save the Land of Chi. She piled up reed
ashes with which to check the flooding waters.’ (Peering into the Obscure: section VII, in Le Blanc 1985 p.158-9)
A woman healer I spoke to ‘saw’ a steel bar lodged in the vertical axis of a
woman patient who could be said to be in a psycho-somatic state of ‘armouring’,
with both body and personality very rigid and suffering.
silver cord in psychic imagery’ silver cord in psychic imagery

day
time(s),
month, season,
year…
morning, evening,
time, 2 times, 3 times, myriads, stages, phases, times, ages, eons,
day, seasons (growth),
month (female: blood, birth, peace, beauty),
<table>
<thead>
<tr>
<th>even \ small ball</th>
<th>year, week, hour, End of the earth, end of things ends of days, Great Time, day of creation. year of the end, end of Time, end of The World ever, for ever and ever, everlasting ‘forever and ever’ MICAH 4:5, ‘from now on, even forever’ MICAH 4:7</th>
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<tr>
<td>day</td>
<td>‘day of the whirlwind’ AMOS 13:14, ‘in the day of distress.’ OB 14., ‘A day of darkness and gloominess JOEL 2:2, ‘in the day of the east wind’ ISA 27:8 [Egyptian word Shen: circle, twin, 2, tunic, orbit, whole, circle of the year, twin] ‘The word Shen in Egyptian is a circle, an orbit, a whole. It was the circle of the year. But Shen is also Twin, and Two. The circle of the year being first divided into the Two Times, and the Shen, tunic, was first put on at puberty, when the second of the two phases was attained – the child and the man, etc.’ (Kieffer 2000 p. 9-10 ‘time, times, and a half’ DAN 1:7 ‘And when he openeth the seventh seal, there came silence in the heaven about half-an-hour, / and I saw the sevenmessengers’ REV. 8:1,2 ‘...appoint for themselves one head; \ And they (shall) come up out of the land, \ For great (will be) the day of Jezreel!’ HOS 1:11 ‘It furthers one to cross the great water. Before the starting point, three days. After the starting point, three days.’ (Wilhelm 1989 I Ching, 18. Ku, [Decay] Work on what has been spoiled, p.75) ‘They contemplated the changes in the dark and the light and established the hexagrams in accordance with them. ... By thinking through the order of the outer world to the end, and by exploring the law of their nature to the deepest core, they arrived at an understanding of fate.’ (Wilhelm 1989 I Ching - Shuo Kua / Discussion of the Trigrams p.262) ‘Of all the forces that end and begin things, there is none more glorious than keeping still. [corresponds to both mountain and meditation: sitting still]... Thus only are change and transformation possible, and thus only can all things come to perfection.’ (Wilhelm 1989 I Ching - Shuo Kua / Discussion of the Trigrams, Ch. 2, section 6, p.272) ‘The ordinary menstrual period was looked upon as the opposite of motion, an end of time, a solution of continuity, a phase of arrest. The water of life flowed... and motion was equivalent to generation.’ (Kieffer 2000 p.14) [L-motion ⇔ R-generation]</td>
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<tr>
<td>land</td>
<td>spread, scatter, spread to the four corners of the earth, (flat) land, nation, kingdom, court, stronghold, dominion MICAH 4:8, ‘the root of prthivi, Earth in the Vedic tradition, is prth, to extend or prath, to spread (Miller 1974) sea, four seas, ocean, pond, lake (curved) turtle’s back, beetle; (round) shield, body(ies), self(ves) (square) field(s), court, terrace, garden, courtyard, (flat) table (see AMOS), altar (for fire, sacrifice, tabernacle, flat piece of wood ‘Flatland’ – see Abbott 1884, term also used in Wilber’s early work) (natural) country (female – see Joshua2), The Earth \sky \4 directions, corners, cardinal points, earth, world, cosmos, universe, stand, stand firm, stand firm on dry ground: JOSHUA 3:14, stand at the crossroads house, building temple, palace, enter, enter the house, dwelling city, (from tent \ Mountain): camp(outside or inside the camp), wall, facing the wall, walking/run/climb on the wall, windows, \ seat, throne \ floor, sole of your feet treading the dust, pasture</td>
</tr>
<tr>
<td>Middle</td>
<td>Left-Right-Middle, midway, midst, amidst, among, means, mean, medium, media. ‘O Lord, revive Your work in the midst of the years!’ HAB 3:2</td>
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Appendix B1 – The Lever Experiment

The lever-body

![Diagram of a lever with points labeled as reference of observation, persectival frame, point left, fulcrum or nexus middle, field right.]

Figure 36. The lever, showing 3 viewpoints (perspectives)

The following is a cognitive experiment. The lever is considered the simplest ‘machine’ – a machine ‘works’, moves; here it acts to lift a weight. Now imagine that the parts of the ‘object’-lever described in figure 35 are parts of your body. Identify with this object as if it is a ‘living being’, a physical body, like yours – imagine you are the lever, your ‘body’ has the shape of a lever, and is split into 3 operational parts: a point on the left, a line-axis terminating on the right, and when your lever-body moves around (around the fulcrum), this movement translates as a spinning. Now try to feel ‘what it is like’ from the various points of view of the parts. Here is an example:

When the body-lever moves, the left part feels lifted, and the ‘force’ seems almost perpendicular to the axis (‘normal’ in mathematics). This is what ‘going somewhere’, being ‘oriented’ does, topologically: it acts along an invisible axis. The stone it supports feels heavy on the point of the lever. This is like the heaviness of the body when we ‘work’ and ‘fight gravity to stand’. When the body-lever moves, the right part feels ‘influenced’, and experiences phenomena of that relate to sweeping a field, as well as of the sort that happen in a transporting conduit, or a container that receives energy. The above analogies, metaphors and similarities are direct expressions of the iconic images, of the geometry, and could be multiplied endlessly. Many correlations or correspondences could be established to all sorts of realistic contexts, including causal links (eg the ‘force’ that ‘moves’ or ‘lifts’ or ‘influences’). The point of the exercise is to show that these 3 terms can be understood to be different names for the same global shaping change seen from different, limited perspectives, or topologic deployment into the various ideas related to various contexts. In particular, these projections can also image the general way in which perspectives are developed into ‘three fundamentals’ in any domain of knowledge or experience (eg point, line, field; or position, speed, acceleration; or body, mind, spirit; or linear, relational and non-linear shift, etc.). Each part of the lever corresponds to a different way of geometrically ‘framing’ the situation,
which is a basic geometric operation based on defining an ‘observer’ (external, internal, nexial) that chooses a frame of reference. Which reference we choose depends on our perspectival tendency, on what is most obvious or most common in our experience, and what our learning trained to see preferentially. This experiment can also serve as a mapping of epistemic, ontological and methodological positions. (See also <B2> The 3 stars Experiment>). The 3 parts of the lever constitute 3 cognitive positions, modes of framing, or ways of observing with perspective, and they procure different interpretive frames of reference. Below is another example, a particular application of this threefold geometric projection.

**God’s action**

Perspectival framing is learned actively through what we are taught as children. For example, my son, when he was seven years old, explained what he had learned at school about God’s actions in the following way: “If I get in the way, or behave badly, I get in trouble with God.” He drew himself in between a bow-and-arrow and a target circle, in a fulcral or nexial position, in the middle. He was learning a way of projecting geometrically how the world works according to our conventions (figure 37).

![Figure 37. A child's view of God's action: iconic projection](image)

His drawing expressed a very general ‘Scientific’ geometry of projection: a vector-and-field system, with the vector on the perspectival Left- (what we habitually call linear thinking and associate with ‘left brain’ neocortex activity), the field of influence on the Right-. His story had a particular context, but the iconic geometry is general and found in all the fields I reviewed. Iconic projection is inherent in our *educated* thinking and visualising experience (our mental models of the world). Also, it applies not just explanatory constructions, but also to experiential descriptions. The conclusion imposes itself that the iconic geometry is not just a ‘mind construction’, but also a perceptually based interpretation rooted in the *shape* of our *physical* body, which governs its functions and operations. Notice that the image depicts not God, but God’s action or intent with respect to humans, and a timed development or causal link. This image is a snapshot of the underlying animated geometry that images topologic ‘deployment’, and my son’s explanation is an instant schema of one of the kinds of conventionalised representations we attach to it (‘linear thinking’ and ‘black and white thinking’ are common denominations for this one).
Appendix B2 – The 3-stars experiment


Representing the 3 stars of Orion's Belt

The following experiment will help demonstrate that the 3 fundamental perspectives introduced in <B1\ Lever experiment> are valid and accurate representations, and yet differ in their details, and particularly in spatial orientation. The crucial implication is that when researchers observe ‘the world’, the observing operates in one of these 3 modes, and the representation produced by one researcher does not match those produced by using the other 2 modes, yet all are technically valid. Making drawings will allow the reader to experience directly the fundamental differences between the 3 basic possible views which, for our purpose, can be understood as: objective (external), subjective (internal), and nexial (‘inside’).

The 3 stars of Orion's belt are particularly apt for this experiment. They are the object of a controversy concerning their possibly being the origin of the ground plan of the Great Pyramids in Egypt, and how the architect might have derived the construction plan from the sky configuration. One of the stars in this trio is not quite aligned to the other two: the axis is skewed. Standing outdoors under the sky, looking at these stars when facing North or facing South, appears to invert. the skewed axis and the order of the stars. Try this:

The 3 stars are reproduced below (figure 38b), in an image that can be photocopied. Pasting this copied image onto the ceiling will produce an effect equivalent to that of standing outdoors under the night sky. Before pasting the image, define a ‘North’ on the image, and note it, as well as the other three directions. Whether you face North or South as you ‘stand under the stars’ doesn't matter., but choose one fixed position to look up at the image of the stars. You are now going to draw what you see on a pad of paper, three times, each time onto a different sheet, according to the following three sets of instructions For each drawing,
reproduce the stars and their relative positions, as well as the 4 directions, East, West, South, North. You will have produced 3 maps, which will be compared.

Instructions:

1. Stand with your paper pad, look up at the ceiling, and then look down onto your paper. Draw what you see on a sheet of paper.

2. Lie down on the floor, holding your pad in front of you, up in the air, itself in front of the image pasted on the ceiling. Look at both the ceiling picture and your paper, in the same line of vision, and draw again.

3. Imagine now that you are an Egyptian architect who wants to build 3 pyramids in a configuration, on the ground, that 'looks the same' as the 3 stars he sees up in the sky, as if he is one of the stars (after death, may be). Imagine yourself to be the middle star, standing among the other two stars in the sky, one in front of you, the other behind. Draw again all 3 stars and the 4 directions.

Now compare your 3 pictures. Match the shape and skewed axes of the 3 stars, and the orienting cross of the 4 directions. Try to make the 4 directions on the three images match. Start with North, and then match the other directions. What do you find?

Comments:

1. In position 1, you are a self looking at the 3 stars and you look alternatively up at the stars and down at your paper [note the 'inverting']. Imagine the edge of your field of vision as a spherical surface touching the ceiling at the top and your piece of paper at the bottom, and you are at the centre of the sphere (your observing self, which is located in the head, is a this centre). Paper and ceiling are on the opposite sides of a diameter of the sphere. The 3 stars on the ceiling are projected onto the spherical 'internal' surface of the ball that is your observed world in this moment. You can make the ceiling picture and your drawn picture correspond directly, simply by sliding, in imagination, the ceiling image, which is above your head, along the spherical surface, down towards in front of you, then further down to the surface of your paper pad, below your head. The up and the down determine the equivalent of a subjective view similar to that of 'Heaven and Earth' or 'Above and Below', with 'man' in the ‘middle’. Both pictures of the stars and drawing are ‘within’ the sphere, but only on a surface (the internal surface). This is a ‘view from within’ (Varela & Shear, 1999), which makes the observer’s viewpoint the centre of geometric projection. This centre is located in the head and bound to sensory perception. This is an intrinsic centre of
projection. This way of projecting to represent the observed produces a mind reality that is 'a mirror of reality' (or inversely, reality appears to be a reflection of consciousness).

You will notice that if you match the picture of the 3 stars and your drawing, the north and south are inverted compared to the way we represent them in Occidental culture. This is the way the Chinese represent the 4 directions (South at the bottom). This is a symptom of their dominant cultural bias toward the subjective, the emotional, the social, and ‘inner alchemy’.

The transformation from one image to the other involves movement.

2. In position 2, you looked at the sky in an objective way, by 'putting it in front of you', 'putting distance between observer and observed', or 'posing it like a problem', and did the same for your drawing paper. A metaphor could compare the ceiling image to a problem, and the drawing made to a solution to symbolise their geometric relation. If you try to match the drawing and the reality on the ceiling, you find them inverted again, but differently than for position 1. In this case, the observer is a centre of extrinsic geometric projection, again onto surfaces. This objective – and objectifying – perspective corresponds to the detached mind-view of the normal scientist and the intellectual philosopher. This stance is typical of the Western mind-body differentiation: the senses look down onto the body-object rather than sense internally, and the doctor observes only objective symptoms (taking only indirectly account of subjective internal sensations, and not at all another, global, way of observing one’s ‘life’ without distinction). The transformation from the ceiling image to the paper drawing involves a direct transfer of patterns, as is commonly found in psycho-somatic explanation, as well as brain-mind explanation of physical symptoms.

The differences between the positions of ‘intrinsic’ and ‘extrinsic’ centres can be intuitively apprehended by viewing the two animations <6 Homothetic centre External> and <7 Homothetic centre Internal>.

3. In position 3, you imagine yourself to be the middle star, you see where the other 2 are placed relatively to you, and then you place them on the paper in that same way, relative to your own position. This is a 'naxial' perspective (or that of a fulcrum): you were 'inside the image' of the 3 stars, and what would happen to all three of them would happen to you. Your lived universe was ‘you and the 2 other stars’, and the observer-actor-receptor is at the core of volume or mass that ‘surrounds’ the observer. The fact that is it someone’s view of ‘the world’ (the 3 stars) that is being drawn is clearer from this position than it was from the subjective and objective positions. You were one of the 3 stars, and perhaps were more
conscious that it is your observing and drawing that made the projections, rather than attributing to them an absolute reality. Another way to formulate this is that in this position, we ‘know by being’ (being one of the stars), or ‘by doing’ (performing the drawing, doing the observing).

When I had my son, Archie, do these drawings. I did not give him instructions. He spontaneously took this third observing position and drew a ‘nexial’ picture. This position corresponds to a more ‘primitive’ viewpoint that does not discern observer from observed, self from world, but the attribution of ‘real’ or ‘natural’ or ‘human’ qualities to the representation is not primitive at all, but learned. Adopting either of the other two views requires even more intellectual or experiential effort.

If you keep playing with the three images, matching the star pictures, but also trying to match the 4 directions, you may find as I did that the 3 drawings simply cannot be made to match completely. They are different representations of the same reality observed (the picture on the ceiling), with different details. Yet none is less valid than are the others. There is no way of evaluating which one is ‘better’. They simply are useful for different purposes. These views may, then, be simply considered ‘different modes’, each offering a different perspective. We use a process similar to this when we ‘walk in someone else’s shoes’ to feel ‘what it is like’, and thus free ourselves from judgement and from invalidating others’ views, their persons and even their entire life realm. A ‘multi-perspectival’ view allows one to let go of values in situations in which their differentiating and separating properties are damaging rather than useful.

If, instead of printing the image of the 3 stars provided here and following instructions, you had gone outdoors to look at the night sky, your first drawing (one of the 3 types) would have disclosed your preferential mode of observation This mode is what gives you the preferential view you have of the world, your ‘fundamental’ values and beliefs, your ‘perspectival bias’, which a habitual characteristic, learned and internalised in childhood, along with ways of conventionalising (for example a human ‘self-world’ view or a scientific view of body-environment). I was educated and trained intellectually, in childhood, in the objective, Left- perspectival style (French emphasis on the Cartesian tradition), and this remains the ‘twist’ (perspectival bias) my brain-mind takes when it is ‘pushed’ into a ‘survival mode’ or a ‘hard work’ mode.

Below is the image to print and paste onto the ceiling.
Appendix C – Endnotes

Endnotes to the main text of the chapters, which are collected here in this appendix, are referred to, in the main text of the chapters, in the following way: <Endnote C1\ New Paradigm>, and in this appendix, as <C1\ New Paradigm>.

C1\ New Paradigm

For a quick review of the physics used to justify this paradigm (spiritual-energetic), which I had studied during my Masters, see the American movie ‘What the bleep do we know?’ (Amtz & Chasse 2004). A review of the major explanatory perspectives, modern and traditional, of the nature of ‘reality’, ‘existence’, or ‘space’ within this paradigm of mind energy can be found in Tulku (1977) on pages 83-8. His own view is summarised in pages 110-114, 159-162, 283-286, 295-297, and in images on pages 183, 246 and next to title page.

C2\ The term ‘integral’

The historical background given on the website integralage.org (2000, now outdated) defined the term ‘integral’ as ‘recapitulative’, ‘holonic’, ‘multi-perspectival’ or ‘aperspectival’, as opposed to postmodern relativism, which ‘devalues all perspectives…except of course [one's] own’. Other, related terms are ‘(w)holistic’, global and ‘unitive’, but these are mostly a form of complex synthesis. Elgin (1997, p. 1, note 89, and bibliography), traces ‘what has been called an “integral culture”, […] an idea that has been discussed… for more than 50 years’, to authors such as Pitirim Sorokin, Jean Gebser, Sri Aurobindo, Paul Ray. Currently, the foremost theorist of the integral paradigm is the philosopher Ken Wilber. The application as a research methodology – ‘Integral Inquiry’ – is expounded by William Braud (1998 chapter 3, summarised pp.256-8 – see <Extract F19\ Integral Inquiry (summary)>). One of its aims is to counter the tendency, in human sciences, to reject objectivity, and with it, intellectual and logical rigour, to the sole benefit of subjectivity and spirituality. Instead it synthesises them as multi- ‘complements’ (‘synthesis’ traditionally means 2-‘complements’).
**C3 Special experiences and the unexplained**

- Unusual or special experiences are described by terms such as spiritual experience (Hart, Nelson & Puhakka 1997, Krippner 2000), insight, paranormal or parapsychological (Tart 1969, 1999), anomalous (PEAR 2002), synchronicity (Jung, 1973), transcendent, transpersonal, ‘Exceptional Human Experiences’ or ‘Exceptional Experiences’ (White 1995 & 1998), which transform one’s life or not. Many of these names ‘have multiple connotations and semantic baggage that are often at odds with the scientific process, but they are nevertheless in common use.’ They describe [what is] ‘beyond the limits of ordinary experience, of the physical world. The scientific body of precisely observed factual data about the world, and good theories that make sense of them, is useful, but constitutes a cultural heritage sociologists called scientism, when they realised that many scientists unthinkingly accepted many scientific theories as simple, unquestioned Truths, just like believers in any "ism". [...] This is a significant distorting factor, and these ['Taste '] Archives are an online journal performing the essential scientific function of full and honest communication of data in this badly neglected area.’ (Summarised from Tart 1999.)

Tart and White established two different online databases to collect self-reports, and Tart advocates ‘state specific science’ to study these edges of normal reality, that is, with the scientist-observer being in the ‘state’ that is relevant to the altered states of consciousness being studied. The unusual experiences of scientists are rarely mentioned in research reports, and yet are a source of great interest to philosophers of science, for their role in innovation. Several scientists advocate for their being taken into account: Tart (1972, 1995), Krippner (2000a), and White (1998), who writes: ‘All types of anomalous (out of the ordinary) experiences… do not fit into today's scientific theory, and our culture typically does not have a way to understand and deal with them.’

- Experience and events can also be empirical and yet unexplained (eg spontaneous healing Weil 1997), or the explanation may be controversial. This situation is widespread in medicine, particularly, for example, for small pain shifts from left to right or vice versa, bipolar patterns, and for the ‘not well understood’ or ‘unknown’ causes of many illnesses, or of the ‘extremely healthy child’. These tend to be disregarded in both the clinical situation and the literature (except the most specialised medical disciplines, whose knowledge is not
accessed by most doctors and patients). Limits and anomalies are usually understood in terms of strikingly unusual phenomena, but they can also be found, with less intensity or no recognised pattern, in many little facts of daily life, which we tend to routinely ignore. For example, we value or devalue the sense of oscillating or of ‘stop-and-go’, and behavioural crises, blaming them on the individual (eg ‘midlife crises’, or in archaic frameworks the ‘dangerous’ nature attributed to the menstruating woman) or attributing them to some form of spiritedness. We also attribute them to various kinds of ‘not-self’ entities, whether spiritual, psychic, or collective (eg mob behaviour). Some we consider just luck (eg the child ‘full of energy’, or the ‘extremely healthy’ child – I was one–).

- In my research project, it is anything unusual or unexplained that is recorded, from prosaic small behaviours of daily life, mental (eg cognitive, perceptual) or physical (eg internal sensations or bodily behaviour) to more spiritual kinds of experience, to induced phenomena such as ‘spontaneous yoga’ and ‘nexial resonance’ (see <C8\ Spontaneous yoga> and <C9\ Nexial resonance>), to unexplained events, and to very subtle aspects of health that are not described in the medical literature (eg see <Extract F11\ Red>). For example, the gestures and postures connected with low blood pressure, such as crossing arms and legs or leaning, are psychologised and interpreted as ‘resistance’, or physicalised as ‘neurally mediated hypotension’, other related aspects being ignored (eg a chronic general low mood, a sense that being alive requires chronic effort, social marginalisation…).

**C4\ Topology**

*What is in a name*

Topology is defined in several different ways. As I first discovered it, topology is a discipline of *geometry* used in General Relativity physics, and the animations found in this discipline fit best the present work (some are included in the CD). Topology was originally known as *geometria situs*, and this inspired part of the title of this thesis: ‘nexial’-topology is a *global ‘situation* modelling’ method. It took on a new name, *analysis situs*, as analytical geometry was used to develop it into a descriptive tool to represent geometric distortion. In the nineteenth and early twentieth centuries, it became the classic, *geometric*
form of topology. The most common contemporary interpretation is understood, instead, as ‘mathematical’ or called ‘general topology’ (see second part of this section). This technique could not formalise what ‘native gauging’ can apprehend, and takes first-order ‘deployment’ as axiomatic.

The classic form topology manipulates ‘metric’ figures (measured), and could be termed ‘geometric topology’ (the option I chose in this thesis). It is this form that could help ‘formalise’ mathematically what I dubbed ‘nexial-topology’ and ‘native gauging’.

Geometric topology is a science of imaging the properties of topos (place), of shapes, figures, and forms in general, under ‘smooth’ deformation (no surface break). One popular name for topology is ‘rubber sheet geometry’. This is most useful to deal with phenomena at limits between ‘inside-outside’ or changes pushed to ‘the edge’ (the term ‘boundary’ fits both) – surface phenomena. An explanation of ‘topology for toddlers’ (Britton 2006) illustrates the ‘rubber sheet geometry’:

‘A simple trick illustrates topology: taking off a vest without taking off a coat, since (topological[ly]) the vest is outside the coat – in the sense that a paper lying on the bottom of a wastebasket is really outside the basket, not in it, since being in would require removal of a boundary. One puts an arm through one vesthole; pulls the coat through this vesthole until it is hanging on the other arm; then pulls the coat through that other vesthole, where it is obviously ”outside”.’ (Britton 2006)

Figure 39.
Turning jacket: outside and inside are the two different values of a measure called parity

The taking off of a jacket in reality can be explained as manipulating boundaries in a topologic space rather than real space and this topologic space can be interpreted as a
concrete, physical space, or as a ‘mathematical space’ or an ‘abstract space’ (philosophical).

In this work, it is neither, and is defined as an undifferentiated ‘global space’ that has ‘non-local’ properties but which, in many of its expressions, affects thoroughly everyday life.

The basic and purely geometric (animated) form of topology that I use to formalise ‘nexial’-topology, appears to be used only as an inductive-intuitive tool by mathematicians, mathematical physicists, and possibly spiritual teachers (see <PPT2 Models collected\ slide 19> and <PPT4 Einstein\ slide 4>).

Geometric topology describes smooth distortion of forms, without tearing (no surface break), breakthrough, or hole, and the approach of boundary conditions, without ‘covering completely’. (‘Covering’ is an expression found in archaic texts, later deployed into notion such as veiling, robe covering the body, etc.)

Revisiting topology: contemporary topology

Contemporary topology, on the other hand, is ‘mathematical’, and seems to specialise in the opposite, as encapsulated by the following statement:

‘Absolute binary reciprocation distributes connection by unfurling projection that covers completely.’ (Tenen 2002)

Tenen’s paper is one of three examples in which the complex developments of mathematical topology are used for metaphoric description of spiritual creation and organisation, mind, sociality and spirituality: Tenen (1998), Cullinane (2002) and Dimitrov (1998). These confirmed to me that topology could be used to understand the archetypal notions of spiritual and archaic cultures, but also that it was not used in the human domain but in its complex and mathematical form.

The achievement of contemporary mathematical topology is to describe unpredictable phenomena such as the appearance or occurrence, or repetition of ‘boundary conditions’. These are critical phenomena of initiating, of periodical ‘shifts’ (explosion or collapse), of ‘tearing of the fabric of space’ (see discussion in chapter <Deployment of Perspectives>). This is also making a ‘hole’ (hence chaotic and emergence notions of ‘disturbance’ of the nexial binding – see below)
This most common form topology, is rooted in point-set theory (eg open or closed sets, made up of elements, points, atoms, particles, etc.) and is the basis for the technical, detailed treatment of the notion of ‘system’ in systemic sciences. It is calculated rather than measured, makes use of statistics, probabilities, and numerical analysis. This is, I believe, what is called ‘general’ topology, or a topology of ‘general systems’. This is not used for naxial-topology, but the discussion of topologic deployment demonstrates that a ‘system’ is a fragmented or scattered understanding of the more basic notion of ‘thing’ rather than the ‘undivided whole’ that was originally meant by this term, and a generalising reformulation of concepts of body, object, subject, etc.

This highly specialised discipline is popular for the study of quantum physics, complex dynamical systems and potential/ risk. It uses complicated calculations to describe changes in spatial forms and real shapes as time passes – ‘development’ (eg the shaping and re-orienting of growth in crystals, living bodies, or cosmology, inferring growth rates of Neanderthal from tooth characteristics [Kelly in Nature, 29 April 2004], etc.). Numerical analysis is a sophisticated form of arithmetic (riding the calculator/computer wave, which it circularly enables). It produces approximate graphic representations (now taught in schools as an ‘extension’ of analytical geometry) of patterns or patterns of activity, and ‘best-fit’ models, in many specialised fields. It yields models of discrete ‘shift’ (in space, time, or timed-spaces), rather than a continuous model of small change in a topologic ‘space’ (classic topology).

Mathematical topology is used in physical sciences (physics, crystallography, physical paleoanthropology), and its complex developments support engineering-based theorising for sciences of complexity (eg complex dynamic systems), evolution and genetics, and computer-based imaging technology.

Eventually, the most advanced productions go straight back to topography, through the iconic images of ‘thick landscapes’ in theoretical models. (See references collected in <Appendix F7\ Landscapes stability>). These are generalised and called ‘topologies’.
These topologies – complex topographies – have uncanny similarity with archaic ‘models of the world’, which reduce and fragment a global context (eg splitting space and time from a ‘timed-space’ or ‘spirit’, dividing high and low limits of the world: skies). They are presented in this dissertation as their re-expressions, because they lead the generalisers (creators of these topologies) back to logically equivalent timeless concepts (eg ‘universe’ for ‘the world’, initiating animation) and to ‘core traditions’ based on archaic notions.

Few are those who notice, as Gould or Eliade did, the geometric similarity of the graphic models of theory or practice between various fields, and with medical and archaic models. These models are now habitually known only in linguistic form, as ‘metaphors’ in ‘myths’, or as ‘abstract concepts’ such as the ‘tree’. (See a selection of imaged models gathered in <PPT2 Models collected> from both natural and human sciences).

Primitive images such as the spring, concentric circles, or the snake, may also represent developments of an unfolding situation, or may figure a chaotic or critical event and describe creative or destructive ‘unfolding-enfolding’ (or refolding, for example in proteins, the ‘snakes going back into its hole’, or the eschatologic ‘end’ folding-in destruction).

The formal mathematical reConstructions of space-time and ‘patterns’ are the basis only for ‘advanced’ notions such as ‘redeploying’ and ‘redeploying again’, or ‘system’ (discussed in chapter <Development of perspectives>, and understood as surface/boundary phenomena in ‘nexial-topology’).

Australian Aboriginal symbols are known to often represent the conformation, configuration or topography of the land and its geography, and to give them meaning related to physical survival. This ‘flat’ geography of surface also describes global meaning, human transformations, through symbolic analogy. ‘Advanced’ topologies are very prone to recreating ancient perspectives and cosmogonies related to survival, but that of the mind or ‘soul’. Topography is to space and ‘the land’ what mathematical topology is to timed-spaces and self-world conventionalisation.
Classic ‘topology’: The dimensional orders of topology

As a highly abstract form of geometry, classic topology is also conventional, but in a different way. It images the properties of topos, a ‘place’ in the ‘spatial’ reality of the geometer, or in an abstract mathematical ‘space’. – That is, it describes properties of shapes in general, those of generic figures, and forms (hence its usefulness for the present work). The fourth dimension of such a space in not the time of physical space (which gives rise of ‘many dimensions’ models of space-time), but a different logical order. (A 'meta'-analysis is a ‘second order’ analysis.) To describe deformation (progressive change) of generic forms, it uses sophisticated equations that summarise fundamental properties of geometric ‘dimensions’ (‘logical orders’) of a ‘general field’ or ‘continuum’ compacted into a ‘topologic space’. The algebra describes a conventionalised space under small deformation (not large or sudden shifts – this is often forgotten currently). This dissertation first details progressive deformations of particular perspectives using the language of words and names (including those of medicine and ‘health talk’) rather than numbers and measures. Then it describes the topologic nature of the geometric properties of ‘general perspectives’, understood at states of deployment of an undefined global ‘place’.

The modern name, ‘topology’, betrays the denaturing of 'geometria situs' into a knowledge reduced to surface behaviour of ‘place’ or ‘physical space’.

Most often, topology is used this way, as a complicated form of topography that ignores the idea of ‘smooth’ change, without break. This distinction is of the same order as that of ‘ball’ and ‘sphere’ in mathematics (see <C10\ Mathematical ‘ball’> below), or ‘category error’ in logic, and has dire consequences (as well as creative benefits) for our daily living.

The role of nexial topology is to discern this difference. It is not ‘mathematised’: no calculation is performed, vertices or edges are not counted (although perspectival analysis does use a numerical parameter that goes up to 6 – there is no 0 or ∞), geometric images are not measured. The shapes are simply ‘named’ geometrically (eg ‘circle’, ‘vector’) or, in archaic style, named using realistic imagery such as ‘churning’, ‘flowing river’, ‘arrow’, or ‘sea’ for a field).
C5‘Nexus’, ‘nexial’, and nexialism

The word ‘nexialism’ was coined ‘by the science fiction writer A.E. Van Vogt, who invented the idea of a "Nexial Foundation" where wholistic thinkers and scientists with the skills to integrate sciences, are trained’ (Nla 2005). As a result, the name ‘nexus’ has come to mean integrative-generalist thinking, learning, or action, and is used by three organisations (Nla 2005, Nlb 2005, ION 2005) whose approach is consistent with holistic, integralist, multi-perspectivalist, general-systemic, and New Paradigm worldviews. The word ‘nexus’ comes from the Latin nectere, to tie, to bind. This developed from the Indo-European root is ned-, bind, tie. It developed along 3 lines of meaning:

1. *nod-, net (as in network or fishing net);
2. the lengthened nodo-, giving node, nodule, and the Latin nodus, giving dénouement in French (untie, undo, as in the mathematical ‘unknot’);
3. with re-formation of the root: the Latin nectere, to tie, to bind, giving connect, annex, and its past participle, nexus.

The term has another synonym: knot. The notion of ‘nexus’ is thus usually understood as connection between a node, knot, or tightly bound core, focus, fulcrum, centre, or ‘small whole’, that is coupled with or tied, bound to a ‘big whole’ – a general system. The binding is understood in the form of network. A further semantic development shifts the structural notion of binding into a process of tying into a knot involving interaction or resonant operations, and therefore action, motion. It then serves to justify observations of influence (at a distance or not): ‘Emotions are the nexus between matter and mind, going back and forth between the two, and influencing both.’ (Pert 1997 p.87-189)

I began using this word, ‘nexial’, during my Masters, much before I ever heard of these organisations or of advanced paradigms, to represent a notion of undifferentiate understanding (habitually formulated in the literature as ‘generic’): the two novels (Van Vogt 1945, 1946) had inspired my youth. The words ‘nexus’ and ‘nexial’ are not adequate for describing the ‘native gauging’ itself, but they are appropriate to describe the parameters used in the collective topology of general perspectives. These represent the deployments of
binding and degrees of freedom, those of limitation and unlimited growth, those of opening
cstriction or constraint and bringing extremes ‘back down’ or ‘back in’. These words are
also the best I could find, before I could picture these ubiquitous notions, to represent a
‘whole’ that is not a sum of parts, not an emergent entity, nor an ‘original One’, not a
system, not large or small, etc., something (not a thing) that simply is not differentiate. Of
the two most generic notions I found, which serve as parameters in nexial-topology, one has
a clear general vectorial form – direction, or vertical axis, or axis mundi –, but the other has
too many names. It is what physicists call physical ‘motion’ in general; in humanities, it is
related to movements ‘of life’, vital animation and spirit in various localised forms; in the
combined domain, it represents activation or deactivation. I therefore used ‘nexial’ to
denominate the second generic parameter related to activity, (see chapters <Many
perspectives> and <Nexial-topologic deployment>) before I recently discovered the longer
name ‘primus movens’. These definitions make ‘nexial’ an appropriate word for the
description of ‘deployment’ (both unfolding and enfolding) as a ‘process’, or operational
‘change’.

C6\ Core culture, ‘secret’ traditions and Kundalini
What I call ‘core culture’ is usually known as traditions of spiritual and religion, or
symbolic thinking, and takes forms that have been qualified variously, including as
archetypes that seem inherent in the human mind. It is rarely taken into account in academia.

‘Secret’ and arcane traditions: These traditions developed, on one hand, experiential
practices (magic, mystical, psychic), mystic (eg EE experiences) (I differentiate ‘mystical’
from ‘mystic’ according to common use in the literature of the two kinds, psychic-perceptual
and cognitive-philosophical). Their experiential teachings are ‘secret’ in that they are
accessible only to initiates or students willing to pledge their life to a master. I was,
therefore, barred from direct access to much of this domain of practice, but could infer its
knowledge contents from texts, and its experiential contents from published ‘EEs’ and from
my ‘direct’ experiences. Some of these practices aim to trigger intuitive knowledge (eg
Satprakashananda 1974). The idea of ‘secret’ is habitually justified by explanations of the
dangers of playing with their techniques (dangers of chaotic ‘power’ thresholds in particular – see ‘Kundalini’, below). As a result relying on a master, teacher, guide or director, is considered a crucial necessity to avoid life- or sanity-threatening results. These experiences are extreme (eg requiring near-death states, or release after major extremes of stress) and are the ‘core’ of religious and philosophical mysticism. American transpersonal literature has popularised in particular the psychiatric and spiritual effects of yogic Kundalini.

‘Sacred’ and magic traditions: These traditions also developed systems of knowledge and use geometric symbols, arcane descriptions, and cryptic vocabularies (eg alchemy, Chinese inner alchemy, gnosis, sacred geometry, etc.). These systems are very complex, require advanced discrimination or abstraction to understand them, and are so diverse that the teachings of different schools are sometimes completely opposite (this was noted by Hippocrates, see Mattock & Lyons 1968, p.1-4). The cryptic language can be very confusing when no obvious realistic (human, societal) or naturalistic (physical, material) interpretation comes to mind. Interpretation can also produce far removed derivations that have given rise to eschatologies in both Western and Eastern cultures. It is this sort of vocabulary, that is apt to be explained with nexial topology – at least the un-derived form found in the most ancient myths and in first-hand texts rather than second hand texts about the teachings of sages that start with ‘he said’. Some notions drawn from these traditions are presented through quotations and text extracts (see appendices). These knowledges are the core of ‘sacred’ power or ‘mystical’ (power of the psyche) (see also <C7\ Spiritually ‘advanced’> below). They which gave rise to all sorts of magic practices based on numbers, words, and images (symbolic or not).

The reader might notice some degree of paradox in this exposé: this is due to the circularity between experience (or practice) and knowledge (or explanation) in the human and scientific forms. Practice and knowledge can also be combined in martial arts, in various ways. Symbols, complexity of knowledge, and ‘advanced’ thinking are characteristic also of what I call here ‘advanced’ sciences (eg sciences of complex dynamic systems, theoretical physics, biochemistry based on topology, etc.). I found that the fundamental symbols, and shapes of
the models produced, are the same in science and spiritual traditions, hence the general term ‘core culture’, which avoids focusing on any particular perspectival preference. The images also appear, as far as the literature suggests, to be the same all over the world. The non-locality of the imagery (see <PPT4 Einstein> presentation) has been explained as ‘collective consciousness’ in the context of dreams and visions, but not for cultural artefacts or body-brain experience. Nexial-topology can model how the geometric figures develop into realistic-naturalistic imagery and realities (see <Nexial-topology deployment>).

**Kundalini:** Experiential reports of the activity of the Kundalini indicate the existence of major psycho-physical changes in the experiencer’s bodymind, including visions (eg Edwards 2000), psychic ‘energies’ that rise along the spine (Muktananda 2000, Krishna 1975, Muni 1993, Narby 1998), perceptual changes (Krishna 1975), and physical motions or behaviours of the body accompanied with health benefits (Muktananda 1983). These changes are sought in traditional Kundalini yoga practice, although not necessarily to their extreme (Shakti Parwha Kaur Khalsa 1996). The ‘energy’ is now considered an evolutionary drive (Krishna 1971, Sanella 1979, Greenwell 1990, Kieffer 1998). In the West, it tends to be psychologised (Johari 1987) or physicalised (Bentov 1978). Like other health changes that are ‘not well understood’, it tends to be valued negatively in Western society and so a diagnostic name has been invented for it or conditions that ‘resemble’ it: ‘Kundalini Syndrome’ (Sanella 1987 & 1979, Greyson 1993, Lukoff 1992). The combination of psychic and physical effects fits well with some mid-extremes of psychiatry and psychosomatics. The global health effect is often neglected, although Sanella describes symptoms in the big toe that recall descriptions of gout arthritis (which he does not mention). The deepest question about Kundalini remains whether it is ‘real’ (Hills 1979), physically, in the terms understood by dominant culture (physical reality confirmable by the senses). Two other, related, phenomena are the male experience of the ‘white lady’ (see <Extract F14\Mysterious Female>), and sensations of terrible ‘burning’, that recall the biblical ‘burning’ before it became ‘hell’, and for which medicine has little to say (see <EE17\ Burning Fire>).
These constitute the only descriptions I could find of one state I observe in myself (‘irritation’-driven neural damage).

**C7\ Spiritually ‘advanced’**

In experiential forms of spiritual practice, physical or mental, certain capacities are described as appearing only at ‘advanced’ stages. This was confirmed to me for several of them, through conversations with practitioners who described them to me from direct experience, or from their teacher’s if they do ‘not yet’ experience them themselves. Yet some of them operate in me, without my having followed consistently any particular ‘practice’, some even since childhood – I do not for myself, consider them ‘advanced’, but rather innate. For example, ‘Da Mo’s eyes’ is a way of raising focused power wholistically in Tai Chi; but is the state I am thrown in when something upsets me fundamentally, and I feel pain at the deepest of my being (for example treating a child as an ‘unfinished adult’). ‘Spontaneous yoga’ is described as a final stage of yoga (see <C8\ Spontaneous yoga> below), but operates in me when I am peaceful. ‘Shimmering’ vision, and ‘seeing’ that ‘all is One’– both happened to me, for six weeks each, after a long period of extreme social stress and provided release. The simplest and most basic (in my view) way of ‘being’ that I call ‘looking in the vague’, is described by Tulku (1976) as a an ‘advanced meditation’ achievement. May be it is, for a busy mind, or for a man, or some other conditions, but for me, it is the easiest and quickest way to ‘undo’ activation and projection (or directive operations) and allow my body to stop using up the ‘internal resources’ that are plundered to sustain a stress state or an immune ‘defence’ state. (see <EE2\ Looking in the vague>). These descriptions may be valid in many cases, or even in most cases (I cannot judge), but if they are not adequate in the local case studied in this research (my case), may be generalising them to all humans is not entirely appropriate. Many such ideas from the domain of medicine have led me to challenging accepted explanations, whether they belong to dominant frameworks or alternative ones.
C8\ Spontaneous Yoga

This is a phenomenon of induced bodily behaviour, involuntary, un-willed, un-intentional, although quite conscious. One may choose to stop the activity if necessary, but I find that the conditions (a peacefully happy bodymind and lifeworld) rarely bring this necessity. It is ‘spontaneous’ but not reactive or dynamically bound to any cause or trigger in particular. Basically, the body starts doing things in the same way symptoms ‘happen to me’. One could say, ‘the body is playing up’, but the behaviours result in correcting physical and physiological problems (and by consequence mind problems), and in healing. It is not described in modern medical literature. I found only one formal description:

‘When, through such willful practice the vital force is intensified, one should lift mental control over the body through the relaxation of the bodily organs and limbs. If this is done properly, the intensified vital force is released. This is Pranasfurana, in which various physical movements occur spontaneously. Thus one gains entry into spontaneous practice [‘spontaneous yoga’].’ (Rajarshi 1993 p.170-171, my italic emphasis)

I do associate such spontaneous behaviour with a ‘disconnection’ of the ‘brain-central-control’ (see <EE2\ Looking in the vague> and <EE5\ Ease walking>), but the description, is inverted in one major element: In my case, the absence of mental control is not preceded by any willful bodily or mental practice, whether short term or long term; it occurs, instead, with a reduction, not an increase, of activity. The phenomenon occurs when I am in a defocused state and less active than ‘normal’. The term ‘relaxed’ does not fit because in relaxation, my body looses all tonus; here, the body has no tension (nervous- tonic) but it is not limp, it does have tonus: it holds up easily.

The most detailed description I know of the spontaneous behaviours themselves can be found in Muktananda (2000 p.97, 98, 103-4, 107-9, 111, 117, 118-9, 127, 134, 147, 258). Rajarshi and Muktananda describe quite forceful bodily motions. Mine are much more gentle, but many are similar in shape of gesture. Muktananda does not seem to have experienced some of the bodily behaviours I underwent, but these I found them described in Dao Yin (De Langre 1971, Hayashima 1997), and in Qigong (Chia & Chia 1993 p.519, 548).

For this reason, I prefer to think of it as ‘Dao Yin’, but the term is much less known than
‘yoga’. Both Rajarshi and Muktananda consider spontaneous yoga a spiritually advanced phenomenon, but this does not fit my case (see <C7\ Spiritually ‘advanced’>). Medical literature only describes ‘unconscious’ behaviours (unconsciously intentional?) that are either automatic or compensatory, and are corrective:

‘The seemingly useless nervous habit of people who bounce and wiggle their legs while sitting actually performs the important function of moving lymph up the legs.’ (Marieb & Mallatt 2003, p.586) ‘The beneficial effects [for low blood pressure, orthostatic hypotension] of sitting in knee-chest position or placing one foot on a chair while standing are comparable to squatting.’ (Robertson, Low & Polinsky 1996 p. 322).

Spontaneous yoga is not automatic: adopting the same posture does not produce the same habitual compensation, but different motions each time. Many physiotherapeutic techniques are derived from such spontaneous phenomena and are often called ‘intuitive’ by the authors of the ‘healing techniques’ themselves, for example: Feldenkrais (1981 ‘functional integration’), Garbourg (1997 'Ring muscles'), Masters (1994 ‘muscular micromotions’), Alexander (Brennan 1996 ‘Alexander technique’). Yoga itself appears to be an ancient systematisation of such spontaneous experiences, turned into a formal system of practice that is taught (to those who do not experience spontaneous yoga?). There are two difficulties with this. First, such a ‘practice’ is intentional, requires mind-self-control, and so brain-central-control of the body – the very thing that ‘spontaneous’ motions ‘undo’, and so ‘practice’ beats the hidden purpose of ‘undoing’, and instead, pushes this control even further. Second, a certain practice is not necessarily adequate in a particular situation for a particular individual, as the many health accidents caused by them show. The good physiotherapist or yoga teacher is able to detect that. The practice most prone to causing damage is that of Kundalini yoga. Many powerful physico-psychic experiences that make little sense to normal thinking are explained in the United States, as a ‘Kundalini syndrome’ (see <C6 \ Core culture>). Extreme forms of such behaviours have been described in mystics or saints, but also in some girls in the medieval period (see <Extract F4\ Syndromes of instability\ ‘Green sickness and exhaustion’>). Spontaneous yoga is governed by internal needs, which cannot be completely or adequately met by practices. I have observed some of the most
gentle spontaneous behaviours in my son and hypothesise that this could be a native ability for a human body not yet normalised and activated by puberty, and lost because of our ideas-governed and survival work governed lifestyles. In my case, nervous, hormonal, and immune defence activations prevent spontaneous yoga. Their deactivation allows it. In any case, the current general drift in health in Western societies would make this phenomenon an important one to study. Especially in children, it could prevent much low-grade chronic struggle from developing into chronic inflammation, illness and acute disease. This would require to abandon the devaluation of small behaviours that appear meaningless, particularly those that are not obviously corrective. Below are some of Muktananda’s descriptions, followed by Rajarshi’s definition of ‘spontaneous yoga’.

• ‘Now in meditation, I felt bliss and also a growing energy. At the same time, the pain in my eyes, ears, and the space between my eyebrows increased.’ (Muktananda 2000 p.147)
• ‘The red body is the experiencer in the waking state... The individual soul in this body is represented by a, the first letter in Aum. When the Kundalini Shakti is awakened, many different movements, or kriyas take place in the gross body. These kriyas are not meaningless; they destroy sicknesses and purify the nadis...Usually, many different kriyas take place, continuing over a long period and through these experiences, one’s concentration steadily increases. (Muktananda 2000 p.98)
• ‘Meditation at the red stage... is meditation in the gross body. As the red stage progressed... I was losing fat without any medicines. Sometimes I could feel a force moving through nerves of my hands. [...] I couldn’t understand what was working so dynamically inside me. Sometimes my neck moved so violently that it made loud cracking sounds, and I became frightened. Was it because of some wind imbalance? I had many astonishing movements like this. Sometimes my neck would roll my head around so vigorously that it would bend right below my shoulders, so that I could see my back... But because I did not understand these kriyas, I was always worried and afraid. Later, however, I learned that this was a hatha yogic process effected by the goddess Kundalini, in order for Her to move up through the spinal column into the shasrara. Sometimes as my neck rotated, my chin would get fixed in the jugular notch below the throat. This is a divine hatha yogic contraction, or lock... As this bandha took place, there was another movement below - my anus would be automatically drawn in and then released. [...] All these movements [physical kriyas] happened spontaneously; I was learning about yoga through inner inspiration. (Muktananda 2000 p.103)
• ‘Sometimes my head would fall back. Sometimes, my eyes were focused on the tip of my nose, and in this position, I breathed forcefully in and out, in the style of a blacksmith’s bellows. Sometimes during this movement, all the breath was expelled. Later, I learned that this was a variety of bhasrtika, a kind of pranayama that eliminates stomach sickness and completely purifies the prana.’ (Muktananda 2000 p.103-4)
• ‘My breath was expelled and my stomach drawn in, so that a small pit was formed. It felt as it air were being drawn up from the region below my navel. This kriya is called the uddiyana bandha and is given much importance in the hatha yoga texts. It is even said in these texts that one can conquer death by it. It purifies the prana and the nadis. When the nadis are purified, the gastric fire begins to blaze, and when the prana is purified, the mind stops wandering and becomes stable.’ (Muktananda 2000 p.119)

A similar description exists in Qigong, called ‘Empty Yin Force breath’. Also compare to:
• ‘1st dying’ – not dying a second time thanks to asuni (conducted breath/ life/ vitality) (Miller 1974 p.144-45)
• ‘When a sadhaka sits in the lotus posture and masters the prana through this position, he acquires the capacity to stabilize himself in the thought-free state.’ (Muktananda 2000 p.118-9)
• ‘Now I began to roar like a lion. My tongue came right out of my mouth. I went on roaring for forty-five minutes.’ (Muktananda 2000 p.111) Compare to biblical stories of ‘the lioness’, and to war rituals in Pacific Ocean culture.
• ‘Strong Prana is an asset for attaining success in spontaneous practice. Hence willful practice is very important for beginners. Pranopasana and Pranavidya are Sanskrit terms used for the spontaneous practice of Yoga, in which the vital force of Prana plays the key role. Before beginning such spontaneous practice, one should cultivate the intensifying of the vital force... The next step is the release of the vital force... The third step is the raising of the vital force... along the path of the central subtle channel (Sushumna). The fourth step is the stabilisation or conquering of the vital force in the frontal region. The fifth and final step is that of annihilation or dissolution of the Prana. Strong vital force is a must for an aspirant who intends to take up the spontaneous practice of yoga. Weak vital force cannot take one very far on the path. In order to strengthen the vital force one should... and practice willfully the Yogic exercises. When, through such willful practice the vital force is intensified, one should lift mental control over the body through the relaxation of the bodily organs and limbs. If this is done properly, the intensified vital force is released. This is Pranasurana, in which various physical movements occur spontaneously. Thus one gains entry into spontaneous practice.’ [...] ‘Any of the following manifestations may spontaneously occur in an aspirant's body when the vital force is released. Performing various special Yogic gestures with hands and fingers. Leaning forward, backward, or sideways. Rocking or swaying in a circular manner from the waist, or stretching and twisting the body. Shaking of the body or jerking of the limbs. Rolling on the floor. Spinning around on the buttocks while in a sitting position. Crying or laughing. Emitting meaningless sounds from the mouth. Singing or chanting holy Mantras. Getting up and beginning to dance.

The above list of manifestations is only illustrative and not exhaustive. In fact, countless manifestations occur as a result of the release of the vital force. Moreover, apart from the gross physical manifestations, certain subtle processes are also experienced as mentioned below. Visualizing the inner light and various colours with closed eyes. Visualizing various angelic or demonic forms or fierce animals through the inner vision. Visualizing pleasant, frightful, or miraculous dreams during the relaxation caused by the release of the vital force.

All these manifestations being of a subtle nature, are not visible to the external eyes but are perceived through the inner vision. In the initial stages the gross manifestations may appear to be more interesting, but as a matter of fact, the subtle experiences are more important for attaining the higher spiritual levels.’ (Rajarshi 1993 p.170-171)

C9 ‘Nexial resonance’

Dynamics and resonance are the terms most often used to discuss ‘fundamental’ reality(ies) in ‘advanced’ explanations, whether human (eg H-duality and polarisation), or scientific (eg Sc-chaotic emergence, stochastic resonance, or a combination such as a quantic jump). What these words describe arises from the fundamental parameters (see chapters <Many perspectives> & <Nexial-topologic deployment>) that thinkers of all kinds come to consider fundamental to ‘reality’. These parameters constitute the basis for the explanatory and experiential frameworks from which our cultures and civilisation derive. They create a world of interactions and connections, both splitting and binding. Paradoxically, they are used in spiritual explanations that aim to deconstruct both binding and division experientially, and in the strategies that people use to seek freedom from both through certain special states.
Dynamics and resonance, or duality and polarisation, are used in research attempts at explaining the paranormal and anomalies, yet ‘a full-fledged theoretical framework for the description of mind-matter systems is not available’ (Atmanspacher & Jahn 2003) The idea of resonance is an ancient one: in Chinese tradition (‘Kuan Yin’, Le Blanc 1985), Indian (praise song), and Western (the biblical Word). It is usually interpreted in terms of connection, interference, sound or shape. It is also at the root of some very negative archaic interpretations (e.g. behaviour getting out of hand, curses and jinx, the archaic fear of the menstruating woman).

The New Age view that ‘all is inter-connected’, and that the cosmos or universe is ‘resonant’ is a ‘turned-around’ notion, compared to what I call ‘Nexial Resonance’. Resonance happens both ‘within’ the self and body and ‘without’ it (‘in the world’, in ‘the environment’), and spirals-up out of control: into instability, or even ‘all hell breaks loose’. This manifests, in my lifeworld, into health crises, ‘brain storms’, social and economic emergencies, blown light bulbs, machine malfunction or breakdown (e.g. car motor, fridge, computer…), but the phenomena cannot be called ‘mind-matter effects’ because there is no intentionality, and because the effects modify the entire lifeworld, in any of its aspects. Repeating the ‘pushing’ (activation or direction) results in ‘endless’ states, damage, and ‘wasting’ (see Conclusions).

**C10 Mathematical ‘ball’ versus sphere**

Some geometric distinctions concerning the words ‘sphere’ and ‘ball’ are source of much confusion in the use of topology:

‘Then n-ball, denoted $\mathbb{B}^n$, is the interior of a sphere $S^{n-1}$, and sometimes also called the n-disk. (Although physicists often use the term “sphere” to mean the solid ball, mathematicians definitely do not!) The equation for the surface area of the n-dimensional unit hypersphere $S^n$ gives the recurrence relation…’ (Weisstein 2006)

There is a similar distinction between the inside curved surface of a bubble (concave), and its outside surface (convex). This surface is called a sphere. The union of this spherical surface and its interior ‘mass’ (a ‘ball’), is often called a ‘solid sphere’. In common usage, however, the word sphere is used for both (summarised from Weisstein 2006). These definitions have deep implications for nexial-topology, for the use of topology (issue of ‘smooth’
deformation, or distortion without ‘tearing’) and are related to the basic understanding of intervals (see chapter <Nexial-topologic deployment>).

**C11\ Non-algorithmic, non-linguistic, non-imagistic apprehension of ‘likeness’**

Nexial-topologic imaging in its non-deployed form, can be qualified through ‘negative’ definitions (of what it is not) in a number of ways that demonstrate the limitation that words, numbers and images impose on apprehending how a situation ‘presents’, and to explain how conventions produce only RePresentations. Nexial-topology is not naturalistic or realistic, algorithmic or linguistic, and in Nersessian’s terms (2002), it is not ‘imagistic’ or ‘picture-like’. It is not quite ‘cognition’ either because it is not brain-based and related to sensory perception or activated emotions, nor is it ‘pure perception’ or ‘absolute objectivity’. It is not ruled by logics of reason, although it is far from lacking consistency, meaning or good sense. It models cohesion or integrity without circular self-consistency: it shows ‘being on track’ (which archaic thinking formulates as ‘straight’, and antiquity thinking as ‘upright’, and since then we use a derived word: ‘right’). The imaging can be called neither concrete nor abstract, neither physical nor mental, but it is very practical for the health of the body, lifeworld, and the collective ‘physical space of humans’, and yet it cannot fit the term ‘pragmatic’, nor any valuation. In its deployed form, nexial-topology makes use of flat (projective?) geometries to split ‘aspects’ as generic or modal, but it is not limited to reduced or split- schemas or symbol. It does not make use of hyperbolic geometries and their topographic reductions, landscapes.

Some rare mathematical physicists such as Roger Penrose and Steve Hawking, philosophers such as Spinoza, and mystics (eg Ou Wen Wei 1999 – see <PPT2 Models collected>), appear to use a source of knowing that is obscure to most. I seem to understand their images intuitively, with much more ease than most conventionalised complex works (which require much learning and analysis on my part). This suggests that they may be using the intuitive-instinctive or ‘native’ form of nexial-topology to consciously ‘deploy’ it and develop models and theories. The closest descriptions I could find to ‘what it is like’ concern such thinkers:
Henri Poincaré ‘never evokes a concrete image, yet you soon perceive that the more abstract entities are to him like living creatures’ (Poincaré quotations). A movie on Hawking showed Penrose playing, on a board in the park, with images that were meaningful to me, and a television show showed images of the ‘mysterious’ kind that Hawking is said to ‘see in his mind’. See also the images in the <PPT4 Einstein> presentation. The imaging is not a ‘creature’ or ‘entity’ nor is it abstract but is how ‘being aware, knowing, alive, and acting’ are ‘presenting’ the situation, or ‘showing-living’ a ‘likeness’ of it. The following extracts are aimed to demonstrate that nexual-topology fills a gap in our understanding:

- ‘The fact that there is some definable limit to the human inventory of “abstract” signs irrespective of culture would be an avenue well worth pursuing. It may imply that there is some cognitive mechanism which lies behind the generation of the visual form of such signs, behind the diverse meanings which the signs impart in various cultural settings.’ (Rudgley 1999 p.79)
- ‘Embracing modelling practices as “methods” of conceptual change in science requires expanding… [to] forms […] which cannot be reduced to an algorithm in application…’ (Nersessian, 2002 p.135)
- ‘In model-based reasoning, that the internal representations are iconic does not mean that they need to be picture like in format at all, but can be highly schematic… The conflation of mental imagery with pictures-in-the-head stems from the fact that we presently lack an adequate means for expressing the notion of a representational format that is neither picture-like nor linguistic.’ (Nersessian, 2002 p.140)
- ‘Is sensory experience fixed and neutral? Are theories simply man-made interpretations of given data? […] In the absence of a developed alternative, I find it impossible to relinquish entirely that viewpoint. Yet it no longer functions effectively, and the attempts to make it do so through the introduction of a neutral language of observations now seem to me hopeless. […] Our hope for such an eventuality still depends exclusively upon a theory of perception and of the mind.’ (Kuhn 1996 pp.126)
- ‘No current attempt to achieve that end has yet come close to a generally applicable language of pure percepts. And those attempts that come closest…. presuppose a paradigm, taken either from a current scientific theory or from some fraction of everyday discourse. And then they try to eliminate from it all non-logical and non-perceptual terms. In a few realms of discourse… [the] result is a language that – like those employed in the sciences – embodies a host of expectations about nature and fails to function the moment these expectations are violated. […] Nelson Goodman makes exactly this point… “phenomena known to exist… possible cases…” No language thus restricted… can produce mere neutral and objective reports on “the given”.’ (Kuhn 1996 p.127)
- ‘Alternatives to such misleading images exist, but the unconscious hegemony of canonical iconography has generally prevented their consideration and the canonical icons have therefore continued to constrain our thinking, for pictures are such powerful guides to our theorizing. (Unconscious hegemony may sound oxymoron, but such quiet and unobtrusive rule can be the most powerful of all. We all know, after all, that the administration of our offices is most effective when smooth operation remains unnoticed.’) (Gould, 1995 p.66)
- ‘It is the non-linguistic iconic dimension of these illustrations that […], I want to argue, entangle[s] the reader’s mind and psyche in a whole web, […] which cannot be seen. The apparent ‘naturalness’ of these icons needs to be dismantled if we wish to understand their impact on the common image of science.’ (Hüppauf 2003 p.1 & 5)
- ‘The gestures we use as we speak are integrally connected to both our speech and our thought processes. [In] this new scientific direction… [the] method is the comparison of matched gestures, which overlap in meaning with the accompanying speech, and mismatched gestures, which either
complement or conflict with the linguistic meaning... The researchers observed children explaining their answers to piagetian conservation tasks (conservation of mass, number or volume when physical appearance is altered). Some children produce mis-matched gestures,.......say that "a tall thin container has a large volume" because it's taller, but simultaneously make a gesture indicating width. These children, it turns out, are the ones who are most ready to learn about conservation, either by instruction or experimentation. [...] The contrast between matches and mis-matches turns out to be a remarkable tool. Mis-matched gestures bring in another cognitive model besides that presented in speech. However, Goldin-Meadow argues that mismatches are advantageous. Mismatched gestures allow speakers to express models that are inaccessible to speech but also give listeners access to those models. Apparently conflicting mismatches often reflect different aspects of a potentially unified larger cognitive framework. Purely gestural communication, that of deaf children becomes language like informational...becomes conventionalised. She and her co-workers are currently researching such applied issues as the need to interpret children's gestures alongside speech in legal and psychiatric questioning.' (Sweetser 2004 pp.606-607, on Golding-Meadow's work)

- 'Different kinds of representations such as linguistic, formulaic, imagistic, and analog / iconic enable different kinds of operations. (Nersessian 2002.p.135) [...] 1. Operations on [linguistic and formulaic] expressions are rule based and truth preserving if the symbols are interpreted in a consistent manner and the properties they refer to are stable in that environment. Additional operations can be defined in limited domains provided they are consistent with the constraints that hold in that domain.

2. On the other hand, analog models, diagrams and imagistic representations are interpreted as representing demonstratively. The relationship between this kind of representation, which I will call "iconic", and what it represents is "similarity" or "goodness of fit". Iconic representations are similar in degrees and aspects to what they represent, and are thus evaluated as accurate or inaccurate. Operations on iconic representations involve transformations of the representations that change their properties and relations in ways consistent with the constraints of the domain... [which] can be implicit... [and they] enable simulations in which the model behaves in accord with constraints that need not be stated explicitly during this process.' (op. cit.p.135)

'My analysis of model-based reasoning has required adopting a... hypothesis: that in certain problem-solving tasks human reason by constructing an internal iconic model... that... can be manipulated through simulation... The task is made easier when the physical [object] is in form of the reasoner acting to support the structure in imagination. [...] – revision and evaluation are crucial components of model-based reasoning. In the evaluation process, a major criterion is goodness of fit to the constraints of the target phenomena, but success can also include such factors as enabling the generation of a viable mathematical representation that can push the science along while other details... are still to be worked out... [...] Concept formation and change is a process of generating new and modifying existing, constraints. This is accomplished through iteratively constructing models embodying specific constraints... ' (op. cit. p.137)

'Other research indicates that people use various kinds of knowledge of physical situations in imaginary simulations.' (op. cit. p.140)

- 'Various anthropologists have created phrases to describe this mythic dimension of time: ... "pre-time"... "pre-temporal time"... "time that is not time at all"...and he concludes, 'Taking a loose, general consensus, then, we can view myths as having ... their own dimension of time – at once ancient and present [...] People from any culture, modern or traditional, who experience altered states of consciousness can encounter this mythic time, Great Time, in which a sense of ... timelessness... they can "look back to the very beginning" and go "where the world is born". [...] By using the Dreaming, [James] Cowan argues, the Aborigines [of Australia] were able to find in topographical features a 'profoundly symbolic language'... a topographic story elicited from a given landscape by a tribal member is not a 'just-so' tale but a demonstration of mythic data.' [...] The Dreaming is 'not a divine place... but a return to the source', whose meaning encompasses dreaming as a 'share of the secret myths... of the old or eternal dreamtime' but can also be 'summed up in the long-past time when [ancestors] introduced the tribal culture...In 1935, Levy-Bruhl acknowledged that "the mythic world and dreams have some important principle in common". [...] "because of some awesomeness of the surroundings, or some important incident or some
hallucinogenic sound, waves waters, or wind, suppliants, any supplicants, could still “hear” a bicameral voice directly: [Jaynes says] [...] the Aborigines were able to find in topographical features a “profoundly symbolic language” [...] the land had a story to tell to mankind, a topographic story elicited from a given landscape.’ (Devereux 1992)

C12\ Carson: An example of analysis based on nexion-topologic understanding of ‘derivation’ in language

‘To sense this world of waters known to the creatures of the sea we must shed our human perceptions of length and breadth and time and place, and enter vicariously into a universe of all-pervading water. For to the sea’s children nothing is so important as the fluidity of their world (Lear 1998: 4)’ (Victorin-Vangerud 2003)

This passage from a 1935 text by the aquatic biologist and ecologist writer Rachel Carson, was originally called ‘World of waters’, and retitled ‘Undersea’ by editors. It pre-dates other texts titled: ‘Under the sea wind’ (1941, following 3 groups of animals), ‘the sea around us’ (1951, on oceanography), ‘The edge of the sea’ (1955, on patterns and rhythms of coastal shore habitats), ‘Silent spring’ (1962, about ‘the’ ocean as ‘source of life’), ‘The pollution of our environment’ (1963). This series denotes an originally nexion-topologic approach (‘waters’ is an archaic term, used here for an undifferentiated world with its creatures also containing water in approximately the same proportion as the planet’s surface). The language, and with it the general approach, is shifted to a physicalised ‘undersea’ by the editors. This orienting is also reflected in the next title, which denotes a 3-modal approach (3 groups of real living beings), with systemic boundary (‘around’) and a physicalised, objectified ‘sea’, and to a topographic and nexion mode (patterns and rhythms). Eventually, the abstract notion of ‘life’ emerges, with a final, covariant, concern for wasting (polluting the ocean kills creatures). The interpreter of Carson’s work twists this development further, by psychologising it:

‘We are geo-centric beings in our perspective’ and Carson aimed to take us out of being ‘landlocked’ and ‘understand ourselves within the household of life’ (Victorin-Vangerud 2003)

Victorin uses Carson’s scientific and activist work to ‘bring theology down to earth, or perhaps... down to the sea’ and build an ecothealogy’ (ibid.). Her own words express a topologic re-deployment that uses the vocabulary of medieval ‘inner’ landscapes but has lost grounding in the nexion-topologic undifferentiate and in the integrity of physical bodies.
‘in this short piece [‘world of waters’], Carson travelled from the coastal shallows, through the layers… down to the muddy, abyssmal floor…[and showed] that the ocean is not a silent and empty void, chaotic and evil, but teeming with life, sounds, currents and communication’, the ‘life in the dark and dense “recesses of the deep” (Job 38:16),’ (ibid.)

Victorin-Vangerud then rephrases her explanation in an ‘advanced’ vocabulary that would befit modern science as well as the Old Testament:

‘She conveyed her own awe and wonder at the mystery of life… [and] held together a focus on the small, individual and particular, with the great, collective and universal.’ (ibid.)

‘The stem “eco” in the word ecology… meaning “house” or “habitation’ (Paul Brooks quoted in Victorin-Vangerud 2003)

This progressive drifting deployment in perspectives is typical of the interpretation of many ideas and works in many fields, and denotes Carson’s struggle to express something that was not what others understood, right away, or eventually. The deployment of her work led her to fighting for the survival of the creatures of the watery world… and she died in 1964 of cancer and heart disease.

C13\ Etymology of ‘experience’, ‘explanation’, ‘empirical’:

The following is a summary of one of my etymologic analyses.

‘ex-’ from Indo-European *eks, away from, variant of eghs, out.

‘Experience’ from Latin experiri, to try, learn by trying,
from Indo-European *per-yo:
per-², to risk, try, lead over, press forward,
and yo- verbal suffix marking present tense

Compare:

per-², through, forward [nexual meaning: ‘going’, moving, passing through a ‘sky’ functional boundary]
[imaging: tunnel, drilling through, twisting through]

per-², pass over, lead [topographic meaning: directional passing-over to the other side of structural boundary]
[imaging: arrow, arrow head]

per-², to’ press forward’,’ lead over’, risk, try [nexual-topographic meaning: risky]
[topographic imaging: push], [nexual sensation: pressure]

‘ExPERIENCE’ represents a meaningful sensation: ‘under pressure’ or ‘peril’, interpreted as a strategy of risky ‘going out’, ex- traction, or ‘push-through’ (which nexual-topology can model). This is translated into chronic adaptive learning and repeated trial & error.

‘Explanation’ from Latin planus, flat, level, even, plain, clear
from Indo-European *pla-no, suffixed form of plo-², flat, to spread
-no, suffix forming adjectives [shaping properties]
Compare:

\textit{pela}^1, to fill \begin{itemize} \item nexual meaning: make full, one, even \end{itemize}
(derivatives: abundance, multitude) \begin{itemize} \item imaging: ball \end{itemize}
\textit{pela}^2, flat, to spread \begin{itemize} \item topographic meaning: spreading flat \end{itemize}
(derivatives: field, floor, flat land, palm of hand, -plasty) \begin{itemize} \item imaging: surface, membrane, FlatLand \end{itemize}
\textit{pela}^3, fortified high place, citadel \begin{itemize} \item nexual-topographic meaning: rising fortifies \end{itemize}
\begin{itemize} \item topographic imaging: mountain, ‘high place’ \end{itemize}
\begin{itemize} \item nexual sensation: strong, fortified \end{itemize}

From the nexual-topologic viewpoint, ‘ExPERience’ means pushing under pressure to direct, and risks the vicious-virtuous cycles of \textit{adaptive learning by the hard work of repeated trial \& error} – the harder way to live. ‘ExPLANation’ means fortifying to flatten out, even-out difficulty, and is paid for by the difficulties of spelling out explanations in detail, according collectively accepted standards and convention, and gaining acceptance for the choices or decisions – the hard way to know what to do. A correlate is that ‘self-expression’ and expressing new paradigms, in science or humanities, belong to the same realm of drifting topologic projection: they make daily life living harder, although they have a useful power at helping us adapting to extremes and emergencies.

‘ExPLANation’ represents a sensation: ‘fortified’, interpreted nexual-topographically as a tactic of ‘filling’ like a sphere (rather than a ‘ball’), or of ‘pushing’ or ‘raising’, to even-out, flatten out irregularity or smoothen instability. This is translated into detailing spatially (geographically) the workings of acutely timed-events – critical phenomena.

\textbf{C 14/ Study of the I Ching trigrams and Elements}

The 4 of directions in the Earth model is here doubled by \textit{mathematical} combination of 2 and 3, producing 8 trigrams that can be matched to sets of \textit{complex} correspondences. The meta-correspondences are: cloud (water, abyss, trigram \textit{K’an}) \& lake (\textit{Tui}) \begin{itemize} \item [Water], heaven \end{itemize}
(also sky, \textit{Ch’ien}), \& earth (\textit{Kun}) \begin{itemize} \item [Earth/sky, the Sun in later ‘onescape’ frameworks], thunder \end{itemize}
(also wood, \textit{Ch’en}) \& lightning (light, fire, \textit{Li}) \begin{itemize} \item [Fire], wind \end{itemize}
(also wood, trigram \textit{Sun}) \& mountain (\textit{Kên}) \begin{itemize} \item [Air/Wind]. [Wilhelm’s transliteration, 1989, p. 357]. The complex and simplifying ‘meta’-thinking behind this is visible in the fact that there are two ‘wood’ attributions in Wilhelm’s translation (to \textit{Chên} and \textit{Sun}), and ‘lake’ (\textit{Tui}) also corresponds to the uniquely Chinese element ‘metal’. In a child’s book, these 8 trigrams are given in a
naturalistic form based on Western 4 Elements, as: water (K’an) & marsh (Tui), the sun (Ch’ien) & earth (Kun), thunder (Chên) & fire (Li), wind (Sun) & mountain (Kên). The 4 elements wind/air-water-earth-fire(or cold) usually correspond to East-West-South-North respectively. With South and Earth, usually comes the ‘underworld’, the ‘sub-human’ attribute, and the ‘place’ that is ‘The Pit’ or ‘The Below’.
Appendix D – Research materials and techniques

The following text describes two techniques that were developed during this study, and other research materials. A collection of working documents is added in <PPT6 Research notes>

D1\ ‘Ring temperature’ technique for changes in body heat distribution

This technique uses a combination of 4 kinds of observations:

- **Peripheral temperature (ring technique):** using a finger ring that changes colour and is sold (to adolescents) with a colour chart of correspondence with emotions or ‘level of stress’. The said colour is a ‘measure’ the peripheral temperature in a finger. It can detect ‘hot’ and ‘cold’ in hands, feet with more subtly than a mere naming.

- **Core temperature:** measured by a thermometer. Later I compared head (mouth) and anus measures.

- **Internal localisation:** where general sensations of feeling hot-cold are localised in the body. Such sensation is little differentiated and mostly helps detect ‘projection’ into the head (brain-mind activation) or ‘down to the body’ (eg ‘hot flashes’ that rise to the head, or the ‘cold of dying’ that rises inside the spine – see <EE16\ Cold of dying>)

- **External localisation:** using the hands’ touch to find specific cold spots (eg on the abdomen, corresponding to small intestine or large colon slowed activity of digestion) and hot areas (eg see if ears are hot or even red, and on which side?). This describes a surface topography, and is very effective in detecting uneven sides.

Peripheral and core localisation is useful to detect radial projection. External and internal localisation can detect ‘uneven’ (L-R) skewing and vertical projection to-from the head. Radial expanding-contracting and skewing permit to map ‘twisting’ in the temperature distribution. All the descriptions together gauge the changes in distribution and correlate with the combination of nexial (or general) activation of the system and topographic vertical projection.
I found the gauging correlated also to the cognitive (intellectual and sensory) sense of ‘mental projection’ (eg defining boundaries, sense of ‘ego’ sharp or dissolving, to emotional stress, physiological strain and metabolic dys-regulations. The gauging also correlates with the existential sense of feeling ‘activated’ into the ‘survival mode’ (in which objective-subjective reality is one of ‘suffering’. This can be reduced by using food and nutrition to nourish for the nutrients ‘used up’ by stress, or by physical exercise to compensate and oxygenate the system. It can also be undone, by ‘stopping’ and ‘coming back’ so the state in which ‘spontaneous yoga’ (or DaoYin) can occur to un-prime ‘defence’. The temperature distribution changes also reflect the nexial-topologic impression of systemic ‘swelling’ which, in the more projected states, shows in visible swelling of face or extremities.

**D2\ ‘Body indicators’ and other indications (N2d-signs and N3p-signals)**

Certain aspects of physiology and anatomy can serve as ‘body indicators’. These help me gauge my ‘state’ of ‘deployment’ – of activation and projection – in conditions where there are no symptoms a doctor would take into account. These include:

- earwax release (the side of the ear affected counter-correlates to brain side activity) (see Goleman 2003, and a response from Tart to an email I sent describing this, in <Extracts F6\ Brain central control>);

- uneven nostril breathing (see <Extracts F10\ Left-Right>), related to swelling mucosa in a dry nose (low-grade dehydration) and swelling sphenoid sinuses, or even ‘face pain’ (spreading through the bones of the face, from the core of the head – see <PPT1 Body>);

- colour of the white of the eyes, and degree of shining; (colour of teeth is related, but less sensitively changing)

- colour (and depth of colour) and smell of urine, without or without ‘froth’ or even ‘white strings’ (and how much); this is related to sweating and kidney function, and to metabolic syndrome and diabetes;

- colour and texture of stool, dryness, frequency, and ease or difficulty;
- colour of complexion, including on the body (e.g. uneven colour, stains) and the face and lips (e.g. the ‘bloodless’ appearance in ‘Green sickness’ – see <Extracts F4> Syndromes of instability>, which is nowadays often considered just a ‘body type’ characteristic);
- vaginal secretions (or dryness), consistency, colour, smell, amount;
- ‘eruption’ (a projection to and/or break-through skin surface) of boil, blemishes, stains (e.g. spread of red spots of subclinical scurvy [vitamin C deficiency], and of ‘liver spots’, ‘ageing spots’, and other names);
- ‘red spot’ between eyebrows appearing or disappearing (see <Extracts F11> Red),
- sense of ‘collapse’ (e.g. need to breathe felt at diaphragm as ‘shrinking’, with mood of ‘catastrophe’ or ‘doom’, or ‘misery’;
- global sense of ‘melting away’ – ‘Turning to Water’ (also affects mind and psyche, and social life: feeling ‘transparent’), of ‘loosing substance’ and ‘turning to fat’ and cellulite, of ‘turning to stone’ (calcium concretions, fibrous growths, irritation and stiffness in tendons and muscle fascia...).

I also made use of certain idiosyncratic particularities of my body, such as the smell and pus oozing out of a small hole on the side of my ear. This helped me monitor the endemic infection in my head and brain (including bacteria that drill holes in my neurones). Looking for descriptions of such holes in that location produced an understanding of a stage of my embryonic development, which contributed to my understanding of how my body could have come to be the way it is.

Many of these ‘body indicators’ are topographic in nature (textures, flows or lack of, signs at surface, reaching boundary conditions in which integrity is damaged), or nexial (colours, smells, sensations, labile emotions such as adrenaline-related anger and fear). Others are ‘global’ and nexial-topologic in nature (e.g. general mood). All of them are ‘primitive’, simple things to observe, but which most people do not. The words used here recall many of those used in the earliest Western texts on medicine, as well as in myths, folkloric stories worldwide. The topographic signs are used in tradition-based diagnostic techniques that
Western medicine considers nonsense (eg head shape, face shapes, iris colours, etc. – see for example Kushi 1980 [macrobiotic]). The particular diagnostic systems often are too distorted to be valid, but dismissing their origin altogether as unreal robs medicine of an important way of understanding health. At higher degree of ‘deployment’ and dysfunction, they become objectively visible enough to be called ‘symptoms’ that doctors look for; but if within ‘normal’ standards, they are ignored in Western biomedicine. Yet they disclose much about the body’s topography, nexial activation, and the changes of these and of distributions (eg temperature, water flows, fibre secretion…), and can provide a imaging of ‘deployments’ that relate to both origins of the condition and risk of developments, including in diseases. At the lowest degrees, these observations are what leads teenagers to look at themselves in the mirror with a valuing (or judging) mind and find ‘faults’ in their appearance. This is an externalised way of observation that psychology attributes to mental lack of self-confidence or even self-destructiveness, or to cultural-collective influences of standards of beauty.

This style of observation of ‘signs and signals’ rather than ‘symptoms’ appears to be innate: it recalls a cat smelling its excrements. My research produced explanations for countless little bodily behaviours and patterns that doctors found meaningless. For example, after an appendicitis operation, I felt pain in my thigh and could obtain no explanation, at the time. I now know that I was feeling catabolism in the muscle, and this could have served as warning.

Correspondence of sensations with the named symptoms of a disease described by medicine is a very useful means of gaining specific clues about the physiology in unexplained low-grade conditions. An undiagnosed low-grade condition can be related to a worse-case scenario that has received a disease name – for example, dryness and jaw tension to TMJ jaw pain, and to the following:

‘The dominant symptom [of Mumps] is inflammation and swelling of the parotid gland… People with mumps say it hurts to open their mouth or chew.’ (Marieb & Mallatt 2003, p.643)

Such unlikely connections developed into my performing systematic searches. Being aware of nexial-topologic ‘orders’ of deployment evades the risk of ‘hypochondriac’ auto-diagnosis,
ie. misguided adopting a disease-name as describing what one feels and being the case. Yet many times, a doctor does not distinguish between believing one has a disease and worrying about the onset of such a disease, or requesting tests just to understand sensations or to prevent worsening. I have used both clues and what I learned in anatomy, biochemistry (etc.) to draw mind-maps of ‘how my body works’, and to build a biochemical-anatomical profile of my ‘body/personality type’, of my ‘health states’, and what I call the ‘proto-health’ state. Some such searches uncovered the direct similarity, in different orders, of some of the sensations, signs and signals I detected with the symptoms described as related to death (see <D3\ Signs of dying> below).

**D3\ Signs of ‘dying’ and sense of ‘in-dying’**

Some of the signs I observed denoted simultaneously loss of systemic, connective integrity and of operational capacity – weakness under effort –, together with straining metabolic effort to compensate and correct. I could find no wholistic description of this state, but I found, for a number of aspects, clear similarity, in a scattered manner, with signs that are listed for recognised medical conditions, at a different order of gravity. Particularly striking were the similarities of descriptions of life threatening ‘medical emergency’, of the approach of death, and of the process of dying. They involve the same parts of body, of metabolism (signals), or apparent signs or behaviours. An osteopath confirmed to me that he observes similar unusual behaviours and high-reactivity in cancer patients and in those with low-grade chronic illness. The following list (in no particular order) of descriptions associated with dying and death corresponds to observations I made: bitter taste, loss of healing capacity, tooth loss, hair loss, loss of appetite and thirst, low blood pressure, dark urine, bloodless face and lips (no colour) or ashen complexion (grey appearance), agitation, confusion, mouth breathing (and dry mouth) and breathing with long pauses (temporary stop), weak body tone, swelling in throat that makes breathing and swallowing difficult, brain lacking oxygen, ‘cold of death’ (see <EE16\ Cold of dying in the spine).

In the local case studied, there was, of course, no ‘physical death’ or ‘process of dying’ involved – only a sense of being in a ‘state’ of ‘in-dying’ – that is, of structural and functional
damage and progressive destruction. This state comes in chronic form, as well as acute form, each presenting more obviously different signs and signals.

The signs-signals listed above and my observations strongly suggest that two different ‘orders’ of deployment can give a sense of ‘dying’ and produce phenomena that have similarity in shaping, although not in medical gravity. One is related to ‘physical death’ and psychic ‘process of dying’, the other is a global ‘sensation’ related to systemic ‘damage’ (Selye’s term) that can manifest with astonishing detail in dreams of the body ‘seen from the inside’ (see <Extracts F20\ Published EEs\ Teresa of Avilla>). This sensation is ‘global’ because it involves not only the physical body (internal physical sensations and actual physical ‘wasting’ or ‘consuming’, which is medically recognised in low-grade damage syndromes) but also the entire lifeworld (eg behaviours of wasting things, a neighbour property being grazed down into a wasteland for building…) (see <Endnote C9\ Nexial resonance>).

Another situation relates to the systemic damage to tissues from fever that is described in medicine. This suggests a comparison to the instability of the histidine molecule to heat, and the systemic rise in temperature with ‘activation’. The body’s core temperature rises by more than 1ºC (35.4ºC - 36ºC to >37.2ºC (I reproduced this occurrence at least twice), although extremities become cold, and the person ‘feels cold’ more easily – ‘being hot’ yet ‘feeling cold’ is recorded in the Bible. (Compare also to original definition of ºF in the 19th century). The projection into higher-order nexial-topologic deployments leads to the perspectival reification of ‘in-dying’ sensations (eg ‘I’m dying here’ said under stress) into R-‘dying’ and L-‘death’. In turn, the brain-central-control that accompanies this projection-activation leads to the limitation of ‘observing’ to sensory information and limits conscious observation to the symptoms of the most drastic form – ‘physical death’. ‘In-dying’ becomes a ‘normal’ baseline, no longer observed. This shift can be detected in the expressions, from ancient Indian tradition: ‘1st dying’ and ‘not dying a second time’ (thanks to asuniti – conducted breath/ life/ vitality –, in Miller
1974 p.144-45). The archaic knowledge of such reformulation of notions of ‘dying’ at different orders of deployment, and its effects, can be seen in the guise of a myth (see (<Extract F3\ Chameleon and Hare>). See also <EE8\ Undoing the ‘in-dying’>.

**D4\ Rediscoveries in bodily health experience**

Here is a list of discoveries I made in my body and health. For many of them, I later found names in the literature, or found them echoed only in archaic literature.

‘Spontaneous yoga’ (see <Endnote C8\ Spontaneous yoga>).

‘Mysterious Pass’ (see <Endnote C6\ Core culture>, and <EE18\ Episode of heart congestion, hypoxia, & pain behind sternum); to me, it is a sensation at the diaphragm, where geographic ‘orientation’ can be felt (I can find my way despite closed eyes, and physical equilibrium in walking is more stable than in a normal state not feeling this ‘pass’, and with open eyes).

Yin Yang dynamics, Male-Female, acupuncture points and meridians (especially points on the ear lobes and ‘penetration’ reversed as ‘projection to surface’ – eg of fat to surface: skin).

Elements: 4: Earth-Air-Fire-Water; Wet-Cold-Dry-Hot, 3: Water (serous secretions), Wind (‘turns’ Left or Right), Earth (undifferentiate ‘substance’, full or swelling, shrinking or sinking, or melting away). Left-Right changes in nostrils breathing (related to sphenoid and other sinuses congestion), which are described as normal in Western scientific inquiries into psycho-physical effects of yogic breathing techniques (see also Goleman and Tart in <Extracts F6\ Brain central control>). 3 tastes: salty (salty taste in mouth), bitter (taste in food, and in mouth: compensation requires to add lemon juice to drinking water [supporting ‘cellular energy’, mitochondria function and ‘advances’ to need to eat salt, and to need to eat bitter salad such as dandelion, endives and fresh catnip leaves), and sweet (sugar needed for coping with emergency and stress]. 4 yogic chakras; 3 Chinese 'tantiens' (two sets – one set with neck, ‘going up’, and one set with head, ‘going ‘down’, developing into a single female model with the head; see <PPT1 Body>). ‘Silver’ body (bloodless face) and ‘Jade pillow’ (damage and restoration in spinal discs) in Chinese inner alchemy; ‘green sickness’ or ‘White Fever’: this latter name, coined by medieval women themselves (King 2004); this is related to ‘rib pain’ (see <Extracts F10\ Left-Right> and my discussion there). ‘Tao Yin empty force’
breathing (inverting diaphragm action to expel air and let inspiration be spontaneous) and other spontaneous breathing patterns. Archaic Yellow and Red, The Dark Pit, the red spot on forehead between eyebrows, (see <Extracts F11\ Red>). Production of ‘Number’ in geometric and generic models (a male style cognitive activity), and of ‘Naming’ (a female style of cognitive activity, related to higher-order alliteration (see <EE9\ Alliteration>).

For some nexial-topologic observations, partial descriptions in the literature and indirect confirmations provide clues that might lead to understanding. Here is what I observed as correlated with activation-projection to the head: loss of internal bodily sensation, which becomes limited to sensing pain of rather large intensity, senses are blunted as compared to animals, limitation of ‘observing’ to external sensory information (which objectifies the body as machine-vehicle-container) and loss of internal sensation, blunting of physiologic effectiveness and instinctual behaviour, high mental focus and reduced breathing (up to breathing that ‘pauses’ and stops and blocks in effort), physiologic strain (which I construe as related to anaerobic metabolism). Vertical re-activation correlates with increased pains, especially along the spine, and seems to correspond to brain-triggered cytokines release, which has been described in CFIDS.

One particular observation has fascinating ramifications. A ‘rib pain’ on the right side (see <Extracts F10\ Left-Right\ In the body>) that is recurring when a particular state of occurs, resembles Thoracic Outlet Syndrome in women or costochondritis, which is deemed ‘of unknown cause’ and is common in children and adolescents. The appearance of ‘rib pain’, in my case, is related to nexial-topologic activation-projection, which eventually manifests as hormonal changes that trigger ‘masculinisation’ signs (testosterone). As a gender-specific effect found in children and women, and if it involves hormonal function (a medical kind of ‘gender change’), rib pain might turn out to be related to the biblical story of Adam and Eve (rib of man to ‘make’ woman), although this is near unrecognisable due to the countless perspectival shifts that intervened before Genesis was written (it is one of the most recently
written parts), and due to the nexial-topologic ‘turn around’ (inversion of the progression female → male hormones, into ‘creation’ of man→ woman).

**D5\ Two aminoacid-mineral-vitamins nutritional formulas**

Partly derived from the early amino-acid treatment of my fibromyalgia, and based on the experimental results of my tests of various nutrients, and the bio-chemical profile I built of my physiology and metabolism, I devised two formulas (tables 10 and 11) containing the amino acids, vitamins and minerals that become most exhausted in my strained physiology (a) any time and (b) in times of stress. Stress is known to ‘steal’ nutrients from the tissues if the diet does not provide enough of them. The formulas might be generalisable strategies but, within certain domains: Although based on specialised medical literature on the general functions of the nutrients, they correspond to certain topologic ‘states’ of health, and roles can reverse (eg histidine vs synthesising histamine). Therefore different persons in different states may react differently to such preparations, partly due to different biochemical profiles.

<table>
<thead>
<tr>
<th>Table 10: Formula 1 ('Topo-mix') (= Formula # AA2946*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nourishment for 'unaffected' state (6 Feb.2004), designed according to the Water-Earth-Fire framework</td>
</tr>
<tr>
<td>(non-defence-'immune') anti-cycling between N2d-reaction ↔ N3p-extremes</td>
</tr>
<tr>
<td>Topologic N2-N3</td>
</tr>
<tr>
<td>Histidine (prevent auto-cannibalised ground substance) (anti-' negative nitrogen balance')</td>
</tr>
<tr>
<td>Vitamin B5 - Pantothenic acid (for Co-enzyme A)</td>
</tr>
<tr>
<td>Lithium (against alternative or cycling N2d↔ N3p)</td>
</tr>
<tr>
<td>N2-pro-Water equilibrium</td>
</tr>
<tr>
<td>Glycine (step in Histidine synthesis)</td>
</tr>
<tr>
<td>Boron</td>
</tr>
<tr>
<td>anti- N3-Fire (or ‘Wind’) (support for oxygenation)</td>
</tr>
<tr>
<td>Taurine</td>
</tr>
<tr>
<td>Vitamin B3 (‘flush’ reaction in ‘endless’ state → replaced by B1 for ACH+ pyruvate [June-06])</td>
</tr>
<tr>
<td>Selenium</td>
</tr>
<tr>
<td>General ‘foundation’ N2d-N3p (baseline ‘health’) – Earth functional binding (‘ψ-s-substance’)</td>
</tr>
<tr>
<td>Leucine</td>
</tr>
<tr>
<td>Isoleucine</td>
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<tr>
<td>Valine</td>
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<tr>
<td>Vitamin B2</td>
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<tr>
<td>Silica (Organic Si: herb Equisetum if possible)</td>
</tr>
<tr>
<td>Mineral: 2 mg</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Table 11: Formula 2 ('Nexial-Mix') (= Formula # 2911*)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small emergency support (13 May 2004) designed according to the N2d-N3p fine-tuning framework</td>
</tr>
<tr>
<td>Nexial-N3p, Downstream: Anti-Waste / Skew, Anti-Extremes</td>
</tr>
<tr>
<td>Histidine (replacement)</td>
</tr>
<tr>
<td>Betaine HCl [N2-N3]</td>
</tr>
<tr>
<td>Sodium Sulphate [Salty]</td>
</tr>
</tbody>
</table>

*Produced by Visionary Health – Roch Shamley, 136, Beaumont St., Hamilton, NSW 2303  (02-4969 5081)
The ‘Topo-mix’ was created according to (a) an archaic 3-Elements framework (Fire-Earth-Water), which is characterised by N2d-N3p conventionalised properties, and (b) its ‘undoing’ (using non-dualised/polarised topology: N2-N3). It is designed as a ‘foundation nourishment’ formula, to help the ‘ground of health hold’, to maintain the integrity ‘under operation’ of ‘ground substance’ (the jelly-like connective tissue that is the basis of all other tissues) and of cell walls. It aims to maintain a state of being ‘unaffected’ (un-strained or stressed ‘immunity’ that is non-defensive and does not ‘use up reserves’), and to prevent what I understand is called the ‘water metabolism’ (including forced directional flows of water and topology-ruled swelling). Thus it aims to prevent water movements from being disturbed and from producing damage from producing damage (eg unstable distribution of water, with swelling and other body areas dry).

Both histidine and vitamin B5 are unstable to heat, which is increased in stress-strain, so the ‘anti-Fire’ is a necessary part of the formula. The major roles of B5, here, relate to lipid metabolism and coenzyme A (CoA) in the cellular Krebs cycle (to use a ‘short cycle’ for energy rather than the full biochemical cycle, which can be impaired if enzymes are impaired).

The ‘Nexial-mix’ is an ‘optimisation’ formula, designed according to the N2d-N3p ‘fine-tuning’ framework, for ‘feeding’ and ‘fuelling’ the nexial activation (eg immune) and topologic projection (eg to brain-mind-head). This formula supplies in greater quantity the nutrients that are most ‘used up’ by stress-strain or work (including healing or repair), and thus to ‘support’ the stress-state and prevent auto-cannibalisation such as muscle catabolism. I use it in conjunction to adding lemon juice in my water (citric acid for the Krebs cycle).

This formula helps my bodymind-brain ‘cope’, produce the work, thinking, or ‘working things out’ (eg psychological, dreams, problem solving) necessary or inevitable in the given conditions, without being too much victim to ‘strain’, physical ‘loss of substance’, mental disorientation, and lifeworld loss of capacity to keep integrity under extreme operations. The nexial formula is combined with other targeted strategies. For example, I also eat gelatine to supply ribose so it is not stolen from the ground substance; to cut catabolic pain, I use HMB;
for dehydration, I eat salt and catnip fresh leaves; for modulation of immune defense, I use sterolins ['Moducare']; I take taurine to prevent brain storms; if necessary, the herb Kava Kava can ‘modulate’ emotions and prevent the ‘crash’ that manifests as a depressed mood and physical and mental exhaustion. These added nutrients are idiosyncratically related to my biochemical profile (or ‘body/personality type’). The food choices that used to be instinctive, behaviours of unconscious ‘self-medication’ (eg dark chocolate for Arginine) are now deliberate and understood choices. The effectiveness of these formulas and foods has much reduced in later stages of writing words for this thesis and dealing with consequent disruptions to my life and health. (Since mid 2007, I stopped using the ‘Nexial-mix’, which is no longer effective enough.) At orders of activation-projection beyond what is described in images in chapter <Nexial-topologic deployment> – that is, in ‘re-deployment’ stages –, the state is ‘pushed’ further than the ‘adapted’ state, eventually to an ‘endless’ state of ‘scattering’ and ‘wasting’ (eg my current pre-cancerous state as of April 2008 is a start), where adaptive strategies become useless but even counter-productive. The improvement effect of coping strategies becomes reversed (eg an acupuncture session causing an unbearable mood of ‘waste’; a histamine flush from vitamin B3 rather than a ‘cooling of Fire’). [– Hence I replaced, in 2006, the B3 vitamin with B1, which ‘facilitates acetylcholine synthesis and pyruvate metabolism’, and is used for ‘burning feet’, and for fluid swellings or congestions of various kinds (Osiecki 1998, p.5), and started complementing with higher doses of B6 and Magnesium – a less complete, but more focused strategy].

Conversation with biochemist: I told the biochemist who manufactures the formulas: “The nutrients are organised in 4 groups because each is expected to perform a certain aspect of ‘nourishment’. Please, if you notice, in this mix, a manifestly inadequate or dangerous quantity, or anything that might cause damaging interactions, please tell me.” He found no fault, and called the Nexial-mix a formula ‘for digestion’ (a biased, limited interpretation).

The 1/3-1/3 1/3 strategy for diet: I use this strategy, applying it to 6 basic nutrient categories: proteins/ glucids/ lipids [the ‘large’] and micro-minerals/ vitamins/ enzymes [the ‘small’]. It
‘keeps the balance’ in a 3-modal way (as opposed to symmetric), because excess in any can yield extreme behaviour of physiology/metabolism and body-mind-lifeworld. (This was known, apparently, in early archaic times). My ‘ideal diet’ (reference to a ‘wild’ state): unprocessed foods (especially important for enzymes), including nuts, seeds, berries, eggs, greens, and watery fruit (rather than sweet), few roots or pulses and no grains (too dehydrating, cause hiccups, especially processed flours – Chinese inner alchemy advises to ‘give up grain’ as well). When ‘pushing’, taste and food attractions are altered and unstable, and make it impossible to follow this. Instead, I become dependent on whatever provides easiest access to nutrients that need to be replaced with least digestive work, on what cuts pain, or worse, on what only provides a ‘quick fix’ of energy or mood, or triggers brain-central-control (eg breathing, kidney function). These pseudo-addictions disappear spontaneously if the ‘activated-projected’ state stops.

**D6 Dr Johanna Budwig’s spread**

Many chronic illnesses can be greatly improved by including omega 3 oils in the diet. One particular tactic attracted my attention, partly because of its general domain of application (acute as well as chronic illness), partly because its scientific background was accessible (see Budwig in reference list). ‘The Flaxseed (linseed) Oil Diet was originally proposed by Dr. Johanna Budwig, a German biochemist… in 1951 and recently re-examined by Dr. Dan C. Roehm M.D. FACP (oncologist and former cardiologist) in 1990.’ Originally designed for cancer and heart disease patients, but found very effective for arthritis, diabetes, and other chronic conditions, its effectiveness has apparently not been challenged – merely ignored by mainstream medicine. The principle is that ‘the use of oxygen in the organism can be stimulated by protein compounds of sulphuric content, which make oils water-soluble and which is [sic] present in cheese, nuts, onion and leek vegetables such as leek, chive, onion and garlic, but especially cottage cheese… Released oxygen is "attracted" to the cells by the "resonance" of the "pi-electron" oxidation-enhancing fatty acids.’ (Roehm, Dan C., 1990)

The core of the diet is the ‘Budwig spread’ recipe, which is easy to prepare. I have fed myself this preparation for six years, now, and have found it highly effective in easing chronic
irritation and congestion, carbohydrate cravings, and digestive difficulty. I tend to cut down the oil content and add more water than advised in the recipe, and find that it also helps prevent dehydration. I have dropped out of using it during the last six months of writing my thesis, because the hyperactive, brain-driven state, alters my taste (the spread does not taste nice to me any more) and the stimulation has to be higher, and more focused on the brain (to the detriment of the rest of the body, its vital activities such as breathing, and hydration). Fish oil (for omega 3) and evening primrose oil (for omega 6) are more effective for this ‘hyper-’ state, but I will return to the ‘spread’ when I stop this work.

The ‘Budwig spread’ recipe

In a mixer bowl, place 450g of low fat creamed cottage cheese (called ‘quark’ in Germany), 250ml of flax oil, and about 150ml of water (enough to obtain a fluid creamy texture that thickens a little in the refrigerator). Blend well. The preparation has no oily taste: the oil reacts with the sulphur proteins of the cheese. The flax oil should be cold pressed, organic, kept in a dark bottle and in the refrigerator to avoid oxidation, which is toxic (summarised from Budwig 1996). This spread can be used as a basis for mayonnaise (add mustard and lemon juice, or vinegar and herbs), or be added to sauces (off the stove: flax oil is damaged by heat).
Appendix E – ‘EEs’: collected special experiences

Most of the special experiences related here are not quite ‘Exceptional Experiences’ (White 1998) as such. The first and last three have a strong physical basis, but are similar to psycho-
physical experiences described in spiritual or mystic literature. Most of the others, however,
do not seem to belong to culture. I could find no such description in any body of literature
(within the limitation of my ‘essentialist’ style of literature review, of course), or in talking
with people, although I am sure some others must know such states (but not express them?).
The appellation ‘EE’ tends to challenge normal ideas of experience, and so I retain it (also to
be consistent with my previous research).

‘Proto-health’

EE1\ Proto-health: Drinking and eating less but utilising nutrients better

In the state I call ‘proto-health’, the breathing is like ‘ball breathing’ (see <E4> below), with
the nostrils evenly and wide open (see <D2\ ‘Body indicators’>, <Extracts F10\ Left-
Right>), the nose and skin are moist, the temperature feels ‘even throughout’ (no cold or
hotter areas – see <EE3> below). Waking up in the morning is easy, pleasant, and both rising
and retiring are early. The lightly happy general mood reflects the body’s ease and it feeling
light, easy to move, control and keep still. The mind is peaceful (see <EE2\ Looking in the
vague’>), and so is the lifeworld. The whole being is free of heaviness and of effort,
physical, or mental. This state is free of chaotic emotions, of the ‘up’ as well as ‘down’
kinds, free of the ‘monkey mind’. By this I mean the unstoppable ‘stream of thoughts’ [W.
James], mental and emotional agitation, problem solving, goal seeking, consciousness of
one’s ‘self’, defensive aggression, and the normal, detailed specific-general thinking.
Instead, the ‘knowing’ is based on nexial-topologic animated imaging. One of the major
benefits of this state is that the body seems to metabolise better the water I drink. There is no
more need to add lemon juice or to make water cold (up to eating ice), I drink less, yet no
longer feel dehydrated, thirsty, and swollen, as usual, and urination is more effective in several ways. The same is true for food and digestion, my taste for fresh foods, berries, nuts, leaves, is restored, as is the sharpness of other senses (especially, the ‘normal’ degeneration of eyesight linked to ageing stops). Sleep is restful, not agitated by dreams, and more restoring than usual, and self-care as well as family care are much easier: no need to will to take a break from hard work, etc. Spontaneous yoga (or rather Dao Yin – see <Endnote C8>) occurs, and keeps posture and physiology on track. Below are some descriptions of certain other aspects of this state.

EE2\ Looking in ‘The Vague’: [‘proto-health’]

This is a process that is most often spontaneous when I stop focused activity, stand or sit still, letting go of any particular concern, looking at nothing in particular (eg the sky). [Imagine someone standing on the edge of a cliff, looking in the distance, one foot held against a thigh, or sitting by an open fire without talking.] The eyes widen a little, the sight remains sharp but not focused, the vision is less interpreted, peripheral vision becomes conscious, perception and cognition become ‘natural awareness’ of an ‘unbounded space’ (without the boundaries of objects and subjects). Tulku (1976) gives the closest description I could find:

‘The meditative state of awareness […] As a living experience, natural awareness is […] – neither a subject nor an object, neither time nor space.’ […] Mind itself has […] no beginning, no end. […] The “field” of awareness is completely open “space”, but this space is neither “outside” the body nor “inside” the mind. […] In meditations, we are first trying to “pin down” mind, to hold it so that we can observe it. But finally, more advanced meditation says, “Let it go, give it up, cut it out. Just relax, without effort, completely natural. Just be, without holding, without concepts, without thoughts.” This is the natural state of mind which is our own self-healer.’ (Tulku 1976)

I suspect that this state is close to what St. Teresa of Avilla called ‘recollection’ when she sat in the garden. This is foremost a physical state, to me, free of the ‘monkey mind’. Breathing becomes fuller but without any effort or intent; its activity-shape ‘even like a ball’ (see <EE4> below). After a few minutes, the heart beats more regularly, effectively, but again
without sense of effort or ‘power’, and can be felt more clearly. The spine straightens, the posture becomes more tonic if it was weak, more relaxed if it was tense. Similarly, the deadened mind become more aware (senses, and sense of ‘aliveness’), and the over-active mind more peaceful. There is a sense that ‘it all works easier’, effortlessly. The flow of air through the L-R nostrils becomes even, and the increase in oxygenation eases the sense of struggle and misery. Other vague sensations give a sense that stress and ‘aggressive-defence’ are ‘un-primed’, deeper than conscious relaxation can go, and any general mood of ‘in-dying’ (low or high-grade distress) gives way to a peaceful aliveness without any particular need or want, without particular concerns, discomfort, focus, or anything special ‘to do’. This gives a sense of freedom and of gentle joie de vivre. – a sense of being ‘at ease’. This, needless state is without the excitement of ‘joy’ and without any specifiable ‘satisfaction’. In this state, neither body-mind, nor self-environment, nor space (here) and time (now) matter; one ‘just is alive’ or ‘just is’. Yet trying to express, describe or explain it, runs into confusions due to language:

‘We sometimes label it (the mind) “consciousness” and sometimes “awareness”. […] Our tendency is to dissect each experience with our interpretations rather than experience the present moment directly, totally, and fully. […] we may be pointing to the mind that “thinks”, the mind that sorts our information computer-style, or the subjective mind which is really just a reflection of the self-image. […] Beyond this level of perceptual processes and interpretations… there is a more pervasive substratum of consciousness, termed kun-gzhi in Tibetan, which is a kind of intrinsic awareness which is not involved in any subject/object duality. […] The] sensory-intellectual awareness is not what Buddhism means by mind, for mind as such is not limited by any conceptions or ideas we might have about it. […] Mind itself has no substance. It has no colour or shape. It has no form, no position, no characteristics, no beginning, no end… beyond time. […] The meditative state of awareness…, does not exist in consciousness. […] The ”field” of awareness is completely open “space”, but this space is neither “outside” the body nor “inside” the mind.’ (Tulku 1976)

Sometimes, this state triggers a desire to go and walk, or to sleep, but more often, it triggers some gentle motions of ‘spontaneous yoga’ (or spontaneous Dao Yin). This state can sometimes be difficult to achieve if one is extremely stressed or in the middle of a problem
solving or meticulous task. In less active or projected conditions, it is easy to ‘get into’; it feels more ‘natural’ than any other state, the simplest, and most basic (in my view) way of ‘being’. It is not a rare state but often attracts negative social judgement (appears distant from others, although everything is perceived clearly and one can react if need be), and is actively discouraged in school (eg looking out the window). This state is no kind of epiphany, to me. It simply feels like getting ‘back on track’ (but not an active ‘healing’ reconstruction). It is a state I need in order to not ‘spend’ my life just surviving, stressed, and straining most of the time. I understand this ‘undoing aggressive defence’ and ‘effort’, as ‘evening out’ the distribution of water in the body, thus easing the pressure from gravity – and graveness, ‘smoothing’ the whole lifeworld. This state is a way of allowing the benefits of what is here called ‘proto-health’, as opposed to having to work against degeneration, to ‘practice’ to chronically heal rampant damage, or to undergo medically corrective treatments, once it goes too far.

EE3\ ‘B3 ‘even-throughout’ temperature distribution [‘proto-health’]

One particular situation does not match any description in anatomical, medical or experiential literature. When the body temperature is distributed in a completely ‘even-throughout’ manner in the body (throughout the mass), it is also highly stable through time, and reduced greatly pointed needs to react, control, or compensate. More importantly, this state gives a sense of being ‘unaffected’ by external temperature changes: there is no shivering, no sweating, and no reaction to cold or to heat. Even cold skin necessitates no covering. I only tested the properties of this state within a daily life range such as standing against a supermarket freezer, entering ocean water, being in a cold wind, standing in the hot sunshine or a hot room, etc., but nothing appeared to cause reaction or internal change.

I have seen such a distribution of temperature only in an infrared film of newborns (who, incidentally, do not learn to shiver until later): their temperature appears as an even pink colour throughout body and head. Later in childhood, it seems to be considered normal to
find a temperature imaged by red in the head, and colours unevenly distributed in the body, closer to yellow and blue.

My sense being ‘unaffected’ was not only physical but global (eg emotional and mental calm and ease of self-governance, physical well being without need, stress or problems to solve, etc.), and related to the ease of retaining both structural and functional integrity, even under stressful conditions. This state lasted for about six weeks, is a rare, and is an aspect of ‘proto-health’. I have such ‘proto-health’ states about six times in my life, all for the same length of time, although arising differently and with different obvious qualities. There are indications, in published experiential reports, that six weeks to two months is an average length of duration for such states (usually said to arise after what can be qualified as ‘Exceptional Human Experiences’, and sometimes called ‘flow’*) but I have not found literature studying this timing. The usual period of six weeks is the time it takes, in my case, for the ‘un-priming’ to be cancelled out by re-priming due to stress.

**EE4\ B3 ‘Ball breathing’: unpatterned, but sensitive [‘proto-health’]**

This way of breathing matches no functional or pattern description of breathing that I could find. Breathing is usually described in terms of functional dynamics, of patterned activity, or of interactive structures. ‘Ball’ breathing is not patterned. It is not tense or ‘coupled’ to outside events by external sensitivity, but it matches more directly and sensitively the physiologic needs in very slight changes of activity than normal breathing or even breath practices. For example, such a change can be stepping over a stone, or a change in direction, changes too small for normal breathing to react. The lungs fill more completely than usual and empty more completely, effortlessly. They expand evenly in all directions, like through the mass of a ball, without localised strain. This kind of breathing is the most effective to sustain endurance conditions. This happened to me for about six weeks, and is part of ‘proto-health’.

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*Csikszentmihalyi 1992 – see <PPT2 Models collected\slide2>
EE5 ‘Ease walking’, a ‘walkabout’ style aided by gravity [proto-health]

Walking is an activity recommended for health, but most people walk either too strongly, and bent forward, increasing the deleterious effects of postural twisting and bending, or too slowly, stepping on the heels, also increasing negative postural effects. Slow walking (eg in a museum or shopping), or standing in line, have always been painful for me, because muscles are used to chronic tension: I need movement for gravity to help rather than weigh down.

There is a third way, the ‘beaten-up’ way, in which I feel so bad that I shrink and walk with my head down. We are told that we must ‘fight gravity’ to walk, and both slow and strong walking do give this appearance, and this sensation, but this is only a ‘normal’ state, not the only one. ‘Walkabout’ and ‘ease walking’ are the closest terms I can think of to describe yet another style I have discovered, which is fluid, and easy. One friend of mine, seeing me walking that way on the beach said I looked like a dancer. I walked in 30cm of moving water, at the water’s edge, on the ball of my feet, because this helps straighten my posture and open my chest (at sternum level) for breathing, and eases motion. Neither fast nor slow, without focused attention, goal or a ‘direction to go’, its most important characteristic is that it is effortless: it is aided by gravity and the movement of water. In ‘ease walking’, the stepping is done on the front of the feet, which are parallel, with flexible knees. On dry ground, each step of this walking feels propelled by gravity and bouncing on the ground, somewhat like hopping up a mountain path like a goat, or like the appearance of ‘flying over the dance floor’. This walking is active but not powerfully energetic: there is no ‘effort’. It is ‘relaxed’ but not floppy, without slouch or bend forward. Breathing is easy, ample, the arms swing without effort, and the head is flexibly balanced on top of the spine, hovering easily: no effort needed to keep it in place. Going uphill requires little work: gravity seems to provide much of the work of walking, and the walking ‘moves all the fluids’ in the body (especially lymph and cerebrospinal fluid), rather than just move muscles, joints, and work hard the heart to pump blood. The deep sensation felt after ten minutes is one of ‘cleansing and freeing’, in all senses of the word (including mental and physical fluidity), and of ‘renewed resources’. This way of walking feels like ‘first nature’ to me (as opposed to
‘second nature’) if I am in natural surroundings, but it appears difficult for others, even
difficult to fathom what it might feel like.

‘Coming back on track’

**EE6\  Exercise-ball pose: ‘Head water & oxygen’  14-October-04**

*From my notes:* I did the ‘Fish Pose’ practice on the exercise ball, but it was not comfortable
for my spine and neck (compressing discs onto bone spurs), and for breathing. Instead, I
found myself getting into another, spontaneous pose, lying on my belly rather than the back.
This is more comfortable for the spine, the rib cage can expand towards the back (unusual in
normal postures), the compressed belly prevents the belly breathing, yogic style that hardly
uses the rib cage and has become habitual for me. Elbows on floor reduce the effort to
stabilise the body. Bending forward makes defocusing and ‘looking in The Vague’ more
likely than with closed eyes and than shut-down-sleepiness. This is more effective at un-
priming immune activation (swelling, irritation) and restoring tonus rather than only ‘relax’
(which makes my body weak and very floppy). There is no sensation of blood pressure in the
head. I felt water glazing over my eyes a number of times: the posture does something to the
water metabolism and fluids in the head, something useful.

**EE7\ ‘Whiff of wind’ in the spine  8-Jan-05**

The 'fountain of youth' and the 'spring of life' might well have a physical correlate in the
fontanelle, where cerebrospinal fluid moves around the brain and under the skull. 'Sunken' in
a dehydrated infant (a dire sign), it is also the seat of strange and subtle sensations I felt after
a session of bioenergetics (movement and breathing). It is also the locale of the 'crown
chakra' in yogic and other traditions, where the ‘Spirit’ can hopefully be felt. Sensations
there are usually explained in terms of spiritual or life energies flowing. A session of
acupuncture for immune system stimulation brought me such strange gentle sensation of
fluid motion, but inside the spine, like 'a whiff of wind'. I have found that walking with an
erect spine, head flexibly on top, moves the fluid too. So do craniosacral therapy and
Qigong (Chia pp.540-551 for 'spinal rocking' health exercises, similar to some spontaneous shaking that happens to me).

**EE8\ Undoing the ‘In-Dying’ and ‘Turn-Around’**

‘Death’ is a notion that concerns many fields of the human domain. The reified notion of a clear-cut ‘physical death’ is becoming fuzzier and fuzzier as medicine refines its measurements of ‘aliveness’ and becomes capable of ‘bringing back’ people from many apparently dead or temporarily dead states. Previously, mystic practices such as violent ‘Kundalini rise’ also developed means of doing that, and archaic remnant stories of sleeping in caves, ‘falling on his face’ and ‘deep sleep’, are also reminiscent of apparently unresponsive states (not necessarily near-dead) that can ‘come back to life’. These denote an early understanding of ‘death’ as a process with various faces rather than a singularity.

I discovered the artificiality of that notion and the limitations of the notion of ‘body’ when I was fourteen. I witnessed the pain contortions of a kitten dying from poisoning, and buried it. The living thing was ‘dead’, but its personality remained alive in my mind (not just as a fixed memory), still does. After a week of intolerable sadness and mental torture, when I dug up his grave, I did not find a ‘body’, but grubs busy breaking down material remnants. I dealt with the issue of dying again more recently, as a process. The expression “I’m dying here!” formulates that high stress feels like an ‘in-dying’. In May 2002, I had been under extremely stressful conditions that I could do nothing about. The strain had been such that, for the past month, I had experienced various symptoms of health damage, episodes of weakness in the legs, and an unbearable sensation of physical and existential pain that only sleep could alleviate. I felt I was ‘in-dying’. The pressure had led me to harbouring, daily, depressive ideas of ‘I want to die’ – which fortunately, my body has never let me act out (instead, it induced sleep). Then, suddenly, in the space of two days, the situation resolved itself. On the second day, as the cause of lifeworld-wide fear and distress disappeared, so did the sensation of ‘in-dying’, suddenly, as I opened a door. The powerful need to ‘make the pain stop’, the wish of ‘I want out!’ all settled instantly into a new sense of relief, ease and freedom, and I
noticed a clear sensation of ‘I can breathe again’. I suddenly realised that the powerful desire of ‘I wish I were dead’, had ‘turned around’, instantly. It had merely been a reified generalisation, a mental projection of the sensation of ‘shrinking of my body and my whole world’, of sensing I was ‘in-dying’. The ‘in-dying’ sensation had been ‘turned around’ into a ‘wish I were dead’, ‘make it stop’, and derived further into a depressed but self-driven ‘I want to die’. The projection disappeared instantly as the distress stopped. The ‘will to live’ has its symmetric: ‘wish to die’. Both are ‘turned around’ from sensations related to struggle and a sense of ‘in-dying’. Our poor teenagers take it literally and commit suicide. We also thus reify ‘Life’ (into ‘survival’, ‘lively’, and ‘spirited’), ‘Human’ (into specific-general intelligence of detail), and ‘Nature’ (into fighting and victimising).

**EE9\ Alliteration, ‘activation causes projections’ & ‘coming back on track’**

16-July-06

Sunday – I definitely ‘came back down’, reducing the ‘off track’: I am back to alliterating again! Produced this morning a few little gems, such as mysterious Female, mysterious Pass, mysterious Place – they usually go in lots of three, or of two, expressing the parameters. The ‘hit’ of fever and rhinitis that hit me hard after the stress of the trip to the conference, is over. Much spontaneous yoga (really DaoYin) happened last night, loosening the entire pelvis, the swelling-congestion in nose and everywhere, freeing the nerves, and easing the neck strain. Still, the burning pain woke me up twice. Uncharacteristically, the body decided to sleep on the back! This never happens in the activated state. I nearly always, in my life, have slept on the side – usually the right. Which side depends on how activated my state is. During the period around two years ago, when my health was beginning to be restored, when I was not yet under time pressure, and pressure to express my findings in conventional simplifying words, then I slept on my back, for the first time in my life. So good for the spine. It looks like, this time, my body reached the ultimate capacity to keep up adaptive behaviour, and has triggered the ‘coming back’. Hope this will slow down the accelerating eyesight damage and blur, chronic lung disease, and asthmatic lung swelling. Hope it will also help not get lost in details, stay in nexial-topologic thinking. [Not: I could not remain in this state, had to use to
stimulant food for the brain-mind) *Monday* – When I just ‘stop’ and ‘come back’, for my sanity and health, or involuntarily after crisis (I ‘hit the roof’ before a ‘stop’), all the mind/senses projections stop as well – the transformation of everything into patterns and polarities –. Then, it is easy not to be stuck in the conventional ideas, in the details and complexities, and go back to the imaging of nexial-topology. Right now, under pressure, I can only come back to alliteration, which belongs to the first arising of nexial-topologic deployment, before order 1 established.

**Examples of alliteration:**

<table>
<thead>
<tr>
<th>stretch</th>
<th>shiver</th>
<th>sneeze</th>
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<tbody>
<tr>
<td>gravity</td>
<td>gravid</td>
<td>graveness</td>
</tr>
<tr>
<td>scale</td>
<td>shaping</td>
<td>sound</td>
</tr>
<tr>
<td>sane</td>
<td>safe</td>
<td>safe</td>
</tr>
<tr>
<td>spread</td>
<td>swell</td>
<td>scatter</td>
</tr>
<tr>
<td>place</td>
<td>vortex</td>
<td>pace</td>
</tr>
<tr>
<td>vertex</td>
<td>coherence</td>
<td>consistency</td>
</tr>
<tr>
<td>wobble</td>
<td>bubble</td>
<td>cohesion</td>
</tr>
<tr>
<td>toggle</td>
<td>stumble</td>
<td>wrinkle</td>
</tr>
<tr>
<td>integrity</td>
<td>individuality</td>
<td>gooogle</td>
</tr>
<tr>
<td>establish</td>
<td>quantise</td>
<td>identity</td>
</tr>
<tr>
<td>set points</td>
<td>standard</td>
<td>stabilise</td>
</tr>
<tr>
<td></td>
<td></td>
<td>set range</td>
</tr>
</tbody>
</table>

As cognitive events, alliterations are a kind of ‘sounding out’ modelling of ‘aspects of reality’ that produces formulaic expressions. They come as ‘dream messages’ upon waking up, in the shower, or when gardening, more often as 3-modal triads but also as dyads. My ‘rising’ bias is Right, contrary to order 1-deployed bias, Left.

The alliterations are relative to different orders of nexial-topologic deployment, and each type arises from different ‘states’ of activation-projection of the brain-mind. They can be primary (eg stretch, shiver, sneeze), starting with the same sound, and arising from sensation and mood. They can also be secondary or ‘advanced’ linguistic productions from learned knowledge, created by abstraction-synthesis and operational-connection, and arising from brain-mind activity (conventionally: from ‘unconscious creative activity’). One 3-set is the result of ‘advanced’ unfoldment of complex ideas and enfoldment into entire realms of experience real to the self: Mysterious Female (for men), Mysterious Pass (in Qigong), and Mysterious Place (in ‘deep’ philosophy and Chinese inner alchemy). This set is ignored in most scholarly research, and yet demonstrates the limitations of conventionalised understanding in both Sc- and H- domains. Its problems reappear in the form of statistical approximation and probabilistic uncertainty, which are modern reformulations.
Dreams of body and topography

EE10\ Dream 1: Who remembers the body talking to the dreamer? 7-Oct-2000

I was riding huge, menacing and rolling waves on the ocean, hearing or telling myself, “Your body is forced to learn to negotiate and ride huge waves… of discomfort and pain, of body-distress.” I woke up with pain in my left kidney. Dreams of water actually relate directly to a body problem with water metabolism and distress! All the psychological interpretations will not rehydrate my body. Who remembers that the body talks to the dreamer? At least as much as the mind can control the body and ‘set meaning’ in it. My conclusion: the ‘soma-analysis’ I have begun is reversing the psychosomatic analytical process. Instead of ‘making meaning’ out of the body and its (e)motions, I am finding physical explanation to the dreams, ideas, and psychological emotions.

EE11\ Dream 2: Gluey road tar 11-April-05

The most striking and repetitive nightmare of my childhood imaged my nexial sense of struggle. I was forever ‘trying’ to cross ‘The Road’ but could not, because I was stuck in its gluey black tar (a reference to the ‘stuck’ sensation of entanglement, and to the stickiness sensations of what I call ‘The Dry’). This crossing was fraught with danger, fear, and pain, and the ‘Red Alert’ state of ‘survival mode’. A physical interpretation could have brought simple solutions related to food, exercise and stress level that psychologising did not. Trying to ‘cross’ is related to establishing-stabilising of ‘Flatland’ normality, like the expression ‘cross the Great Water’ in the I Ching. Dreams of water, I have found, have wide-ranging health implications, and are very apt to be understood through nexial-topology. The ‘black’ tar is related to the archaic colour schemes that represent perspectives. Black represents the fourth aspect of ‘Flatland’, the bodily damage that results of nearing its complete expression.

EE12\ Dream 3: Body message: ‘Stop!’ 7-Aug-06

A man, blind, running after a dog. Breaks his walking stick in two. Runs this side of the fence: broken stick. Runs the other side of the fence: stick still broken, and he runs into a wall. Moral: Either side of the fence, the stick is broken. On one side you run, on the other
you run into a wall. *Dream Message*: “If you keep going this way, you will end up BLIND! Your eyes are being damaged and once they are dried out, they cannot be restored! Stop allowing the pushing so hard.”

**EE13\ Dream 4: Bottom of Mountain and Water** (topographic dream) 1-April-05

My dwelling is at the bottom of the mountain. Leena [*pseudonym*] comes to see it, but does not 'see' it. I tell her, 'This year, we are coming to visit, to ski.' I have the snow boots and she lends me the jumpsuit. We go across the Water. It is not 'deep' or threatening, just a creek downhill, up to knee height, the 'river'. Once on the other side, she can see my bottom-of-mountain as part of the mountain, and my 'bottom' is not 'dark'… but she never 'sees' my dwelling Place, whether she is on this or that side of the Water. On my part, I can never 'cross the water'.

**EE14\ Dream 5: Crocodile and the 'Restaur'-Place** (topographic dream) 1-April-05

I am in the Restor-ant. It is a dangerous place. Creepy dark waters full of crocodiles surround it. One has come up and lurks around. There is no way of getting rid of Crocodile (or any of them). One had to just be constantly careful, defend oneself, evade Croc, run away. Croc sneaks around and surreptitiously wraps his toothed Mouth around Turtle, and swallows it Gone. Turtle is gone. Now Croc lurks toward Snake. Snake is Amy [*pseudonym*]. I warn her, tell her to move away from Croc. She does not hear me. Croc begins, sneakily, to wrap his toothed mouth around half-of-the-body of Snake. Snake still does not notice, feel, or take heed of my warnings. So I rush in, pull up Croc's nose, stretch his Mouth open, and pull out Snake to safety. Croc goes away, but only temporarily. I have put Snake on the bar bench, which looks like a like Moebius band. Croc manages to sneak up on Snake again, from 'below' the Table (the Table now has an UnderSide). I snatch Snake away. Snake does not see a thing! Croc gives up – for now, and creeps back to the murky Waters. These Waters teem with many crocodiles. Another Croc will soon be back. I feel like I am the 'Keeper', the 'Safeguardian' of both Snake and Turtle, of all who come to 'ReStore': they do not know about the Table and the Below (and conversely, I am invisible to them). I could not save
Turtle so that Snake and others could see Croc. Turtle is the key to the effectiveness of Keeper, because it does not have ‘UnderSide’, but Turtle has been eaten away, has disappeared. Nobody knows where Turtle came from, where it is now… and Keeper is now little effective, cannot make the ‘Restore Place’ safe. No one who comes to ‘Restore’ has enough latitude to actually be nourished. Too busy waiting for ‘It’ to be dished out, relying on invisible Safeguardian to keep them out of being 'killed'. Even Keeper is exhausted and ineffective. The Restore Place has many customers, but it is mostly empty, most of the time, because people are quickly eaten up. (The terms mouth, tooth, turtle, snake, crocodile, table, etc are common in archaic myths of Creation, and below or under, keeper, guardian, etc., are common in spiritual, esoteric literature. This dream was a ‘storying’ based on what I read at the time.)

Sub-health
The following experiences have been reproduced many times, including in controlled conditions.

EE15\ ‘Red Spot’ – see <Extracts F11\ Red>

EE16\ ‘Cold of dying’ in the spine
The ‘cold of dying’ inside the spine is a terrible sensation of cold that develops from the bottom of the spine, up towards the shoulders and neck, nearly paralyses me. It is a dire sign that requires seeking urgent correction or compensation: lying in front of an air heater for about twenty minutes. It is so overbearing that it makes it impossible to do anything but shrink, impossible even to sleep, until heat is applied. This cold is much worse than any other, nothing like ‘feeling cold’, even ‘to the bones’, and it is accompanied with a sense of ‘in-dying’ (which could, I surmise, be reified into ‘impending death’, even though nothing near an objective ‘physical death’ is involved here). It happens as a result of pushing too far the strategies of the ‘survival mode’. Shivering or moving cannot fix this, and hot flashes do not happen in that state. Yet, the doctor does not seem to recognise it. The closest description I could find is as follows:
‘There was also a widow whose feet and legs gradually grew cold and numb, spreading up past the knees, growing painful bit by bit until she could scarcely move about. Cold crept inward from the extremities toward vital body centres, a trajectory that resembled the creeping cold in the dying.’ (Furth 1999 pp.234-5)

**EE17 ‘Burning Fire’**

(See the corresponding ‘body map’ in <PPT1 Body\ slide 18>). I had experienced this ‘burning’ pain twice. This pain came at the end of a spontaneous fast (2001) that I never ‘decided’ or ‘chose’ to do. It just happened. I was not very surprised about the fasting, because I had undergone twice before spontaneous one-week fasts (‘anorexic episodes’ in medical parlance), and both times had been very beneficial to my health and mind. This time, it lasted longer but was only *partial*, and after about two months, the ‘burning fire’ started, throughout my spine, lower back and spreading to limbs. It was so unbearable at night that I slept very little, only in short drowsy bursts, sitting up, propped against the wall and cushions. The pain was much worse when lying down, so I did not. It was much reduced during the day, bearable. This lasted for about eight days, and the idea never even dawned on me to go to buy some pain killer pills. Someone told me that such pains had been described in dying prisoners on hunger strike. I also later found a similar description in the Kundalini literature (Gopi Krishna – see <Endnote C6>), and in a biography of Blaise Pascal. After that week, I began, very slowly, eating a little more, again without really deciding anything. In the following months, I realised that the ‘madness’ of my nervous system (pains, pressure points of Fibromyalgia, and near epileptic brain behaviour) had gone. No more days spent mostly having to press points all over my body as taught by the physiotherapist, in series of over an hour, having to repeat the process less than two hours later, several times a day. It appears that the episode had deconditioned the neuro-muscular system. However, I paid for it by an increase in the chronic loss of body substance, system-wide (proteinuria, catabolism,— see the many names, in medical history and its fragmented fields, for ‘wasting’, ‘consumption’, ‘autophagy’, ‘self-cannibalisation’, etc. in <Extracts F17\ Anatomy notes>).

This had has been going on since my twenties, since I stopped being a competing gymnast,
and had accelerated since my health breakdown, and during this fasting. The burning pain has now come back, several years later, progressively developing from swelling to congestion to irritation-related substance-break-down that ‘eats up’ at my nerves, makes them ‘raw’ (demyelisation) and me increasingly subject to nerve pain. The ‘burning’ has now become a ‘fact of daily life’, yet still deemed ‘unexplained’ medically because chronic rather than acute, because I do not have an obvious brain tumor. A quick way to control the pain temporarily is to constantly re-trigger brain-central control by eating chocolate ice cream, but this causes dependence, and adds to the underlying tissue breakdown and pain. Another way is to take HMB, beta-hydroxy beta-methylbutyrate, a substance used in sports nutrition.

**EE18\ Episode of heart congestion, hypoxia, & pain behind sternum** 19-May-04

See also <Extracts F17\ Anatomy notes\ Heart>, <Extract F10\ Left-Right\ In the body> (for rib pain).

An hour or so before the episode, I felt an instinctive desire to go for a walk to move my fluids and oxygenate my system, but did not heed the call. The first sensation that occurred was an 'empty-shrinking' feeling at diaphragm level ('in the pit of the stomach' some might say?). At the same time, there was a sensation of 'starvation' or dire 'lack': This 'empty' feeling is a habitual sensation of hypoxia, for me and a trigger of the 'need to have a cigarette''*. I was also thirsty. I drank. This developed into feeling hungry, then nausea. Then came the sensations of 'tired', 'need to sleep', and 'shut down' (this requires nearly immediate lying down to sleep). I did not heed the need to sleep nor even yet the need to breathe oxygen – I was busy working. I ate, and this compensated for the fatigue – for a time. Instead

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"…that is, if I am in a ‘low-activation’ state, which was not the case then. In my youth, this ‘emptiness’ was the chronic sensation that led me to begin smoking. In more recent times, the hypoxia has deepened to a more acute state, and this sensation triggers automatic, autonomic, deep sighs (related the 'hypoxic drive' of breathing, I think), after a while without breathing (recurring ‘pauses’ – stopping of breath). This is similar to my childhood unconscious auto-training into the ‘anaerobic mode’, by diving underwater. This auto-training appears common in children. I believe that nexusial-topology could give a new view of the behaviour of smoking, not plagued with the current personal devaluation and devaluation of this effective treatment – in certain circumstances: if there is no repetition (see Despeux & Obringer 1997), no addiction. (Smoking was used as treatment in ancient China)."
of moving fluids, breathing oxygen, and reducing ‘resources wasting’ by sleeping (stopping activity), the drinking and eating 'picked me up', 'reactivated' me. The effect did not last and triggered the episode, whose main characteristic was pain behind sternum. Up until then, I had made connections between fluids (water), inflammation (or irritation and congestion), the diaphragm, oxygenation, and physical movement or sleep (shut-down) but at this time, an intuition had me read the section on the heart in my textbook of anatomy. I found that ‘pain behind the sternum’ is associated, medically, with heart congestion events: my episode fitted with a description of 'pericarditis', but in a very mild, ‘subtle’, and 'subclinical' way: The subject the heart had been mostly irrelevant to my experience until then (only irregularity had manifested, and occasional stop-restart in meditation). There was no medical emergency here, nothing measurable by conventional tests. (An angiogram performed soon after this showed no detectable abnormality). Yet, to me, it was an ‘acute’ episode, if small, a warning: it stopped my activity and gave me a ‘sick behaviour’ countenance my neighbour at the door noticed, and it was the result of a whole series of unheeded calls for physiologic correction. This could also be taken as a warning of ‘risk’ of ‘future’ disease – an expression of ‘preparing a disease’. This time, I drank, ate, eventually breathed, and went to sleep. My ‘primitive' view, using the Elements, led me to think of this event as a being Dry causing irritation, which triggered a reaction of swelling, and a slight congestive event.
Appendix F – Text extracts from the literature

The following referenced quotations are classified into sections, according to topic. The main text refers to them by a mention with the appendix letter and number and the topic name in the following format: <Extracts F5\ Gauging thinkers>.

The sections contain selected extracts from the literature for the benefit of the reader who is unfamiliar with these subjects. A number of these do not belong to dominant culture, but are ‘hidden’, and therefore few people are aware of them. The introductions present the issue and sometimes summarise the relevant literature.

Some sections aim to demonstrate directly patterns of language, thinking or experiencing, without commentaries that would interfere by adding interpretation. Some aim to demonstrate the existence of issues that are not taken into account in academic research.

Text extracts F1, F2, F3 – Myths

F1\ Myth from the Yauelmani Yokuts

‘The beginning of the world (Myth from the Yauelmani Yokuts in Eliade 1996).

First there was water everywhere. A piece of wood (wicket, stick, wood, tree) grew out of the water to the sky. On the tree there was a nest. Those who were inside did not see any earth. There was only water to be seen. The eagle was the chief of them. With him were the wolf, Coyote, the panther, the prairie falcon, the hawk called po’yon, and the condor. The eagle wanted to make the earth. He thought, ‘We will have to have land.’ Then he called k’uik’ui, a small duck. He said to it: ‘Dive down and bring up earth.’ The duck dived, but did not teach the bottom. It died. The eagle called another kind of duck. He told it to dive. This duck went far down. It finally reached the bottom. Just as it touched the mud there it died. Then it came up again. Then the eagle and the other six saw a little dirt under its fingernail. When the eagle saw this he took the dirt from its nail. He mixed it with telis and pele seeds and ground them up. He put water with the mixture and made dough. This was in the morning. Then he set it in the water and it swelled and spread everywhere, going out from the middle. (These seeds when ground and mixed with water swell) In the evening the eagle told his companions: ‘Take some earth.’ They went down and took a little earth up in the tree with them. Early in the morning, when the morning star came, the eagle said to the wolf: ‘Shout.’ The wolf shouted and the earth disappeared, and all was water again. The eagle said: ‘We will make it again,’ for it was for this purpose that they
had taken some earth with them into the nest. Then they took telis and pele seeds again, and ground
them with the earth, and put the mixture into the water, and it swelled out again. Then early next
morning, when the morning star appeared, the eagle told the wolf again: 'Shout!' and he shouted three
times. The earth was shaken by the earthquake, but it stood. Then Coyote said: 'I must shout too.' He
shouted and the earth shook a very little. Now it was good. Then they came out of the tree on the
ground. Close to where this tree stood there was a lake. The eagle said: 'We will live here.' They had a
house there and lived there.'

F2\ Mother Corn leads the first people to the surface of the Earth

A Pawnee emergence myth from the ritual account given by the Pawnee Indian, Four Rings, to
Dr. Melvin Gilmore. (in Eliade 1996)

'Before the World was we were all within the Earth.
Mother Corn caused movement. She gave life.
Life being given we moved towards the surface:
We shall stand erect as men!
The being is become human! He is a person!
To personal form is added strength:
Form and intelligence united, we are ready to corn forth
But Mother Corn warns us that the Earth is still in flood.
Now Mother Corn proclaims that the flood is gone, and the Earth -now green.
Mother Corn commands that the people ascend to the surface.
Mother Corn has gathered them together, they move half way to the surface;
Mother Corn leads them near to the surface of the Earth;
Mother Corn brings them to the surface. The first light appears!
Mother Corn leads them forth. They have emerged to the waist.
They step forth to the surface of the Earth.
Now all have come forth; and Mother Corn leads them from the East towards the West.
Mother Corn leads them to the place of their habitation. . . . All is completed All is perfect!'
The Khoi-khoi people have a story about an insect and a hare taking different messages about death to the first people. This story is also from southern Africa, but the messengers this time are Hare and Chameleon, or Mr Tread-Carefully, as he is sometimes called.

God's message to the first people

Chameleon is wise. He treads carefully, gripping twigs firmly, looking where he places his feet. Even on his longest journeys, he does not hurry. He stops to nibble leaves. He waits silently and looks about him before moving off. He is slow, but sure.

Wherever he goes, Chameleon concentrates so hard that he makes himself look like that place! On a rock he is grey, in a tree he is green. Sometimes he is multi-coloured. That's why Chameleon is a good visitor. When he is with you he can be like you are. He can change and seem to be another person. That way he understands many different things.

This is why, when the world was new, God chose Chameleon to take an important message to the first people on the earth. He knew Chameleon would understand the message, and not forget it. He knew that though Chameleon would take his time, he would go in the right direction and find the first people.

The message was very important: 'People shall not die. When they have finished their time on earth, they shall go away, and then return from time to time, like the moon.'

Chameleon studied the message and memorized it slowly, in his usual careful way, and then he set off to find the first people. It would be a long journey, and he had to conserve his energy, so he stopped frequently to nibble shoots and leaves. Because he hadn't walked along the earth before, he had to keep studying the stars and the shadows of the sun and moon to check he was going the right way.

Along he went steadily, over burning sand and rock and cool river-mud, through soaking jungle and tall dry grass, always watching where he placed his feet. God's message was important, and Chameleon must deliver it without any mishap along the way. Concentrating hard as he walked, he changed into the different colours of the places he passed through. He became yellow with the desert sand, mottled and dark with the shadow on the floor of the jungle, then grey with the hard rock.
Days and days passed. God was beginning to worry. It had been a long
time since Chameleon left. What could have happened? Had he lost the way?
God thought he would send another messenger, just to make sure the message
got through. So he called Hare, the cleverest of the animals, to come to him.
He told Hare what had happened. Perhaps Chameleon had lost his way, or
fallen off the earth somehow. Hare would have to go and take the same
message, in case the people hadn’t received it.

God spoke the message very clearly and slowly. Hare said it over once,
then again. "People shall not die. When they have finished their time on earth,
they shall go away, and then return from time to time, like the moon." There,
I’ve learned it by heart already,’ Hare said. It was exciting work and he wanted
to be off. Without another word he raced down towards earth at top speed.

Unlike Chameleon, Hare was there in no time. Soon he was running
through the wet grass of the world, tearing this way and that in sheer fun.

He would stop for a second and twiddle his ears, to check on the right
direction, then he was off again. He was enjoying his run more than anything
he’d ever done. He was full of amazement at all the things he was seeing and
doing on earth, and thinking excitedly of the people he would meet.

Hare raced past Chameleon just a little way before he found the first
people, but he didn’t see him, because he was in an impetuous dash to get to
the people’s village before night. And suddenly, there Hare was, standing on
his hind legs among the people, with an important message from God. ‘Now,
what was it?’ he thought to himself. ‘Ah yes, about returning to earth.’

Speaking loudly, Hare gave the message: ‘People shall
die. When they finish their time here on earth, they shall
go away, and not return.’ It was not God’s message,
but Hare brought the words from God and once
they were spoken they could not be altered.

Hare stayed with the first people for a
while, then hurried off to look round the
rest of the earth. When Chameleon
arrived, it was too late. It had
already been decided that people
should die and never return
to earth. All the people
knew.

Chameleon could
not change the way the
world was. Instead, he decided
to stay with the people and try to
share his wisdom with them. He
would teach them to concentrate on
where they were on earth and to think about
how they went along. He would help them to
tread carefully on all their paths through the world.
Text extracts F4 – Syndromes of instability

The FM-ME-CFIDS syndrome appears, at face value, as a curiosity of medicine, not worth much attention, compared to ‘killer diseases’. Yet digging into the issue reveals that these three names are barely even the tip of an iceberg. There are countless low-grade conditions, chronic and acute, that have similar characteristics, but whose existence is always challenged. Their wide spreading in the population are hidden by the diversity of their names and synonyms (under physical and human headings), by the overlapping of symptoms in countless differently named medical conditions, and by the acceptance of many of their symptoms as part of normality. Internet message boards are witness to the despair of those affected by such symptoms (unspoken of when low-grade) who complain about the lack of explanation or help, and welcome finding out that others also experience them, and not ‘just in their head’. The general, cultural focus on dire emergency (linked to the idea of survival) hides their role as pre-‘disease’ developments. Some of the names of such conditions are listed in the section <Names and synonyms> below, and the many perspectives on them are detailed in the rest of Part 3 (<The H-clinical viewpoint>). Part 2 (<The Sc-medical viewpoint>) reviews various technical explanations to highlight certain patterns.

The low-grade chronic syndromes studied in this work have general similarities: they are systemic but manifest preferentially as clusters of symptoms that affect various bodily systems (thus appearing as different illnesses) or locate in various places of the body (eg ‘burning feet’, ‘hot ears’, ‘hot flashes’, acne). They also display some contrary characteristics of ‘hyper-’ and ‘hypo-’ function in different aspects, simultaneously or in turn, which denotes their bimodal and unstable nature.

Among all the names and description, I find that the most adequate one for the ‘hyper-’ part of the generic case I studied through my own (local case), is ‘white fever’. It is, according to Furth (1999), women themselves who used the name ‘white fever’. As I see it, it
represents at once the damage (it is a named ‘condition’), the agitated reactions or behaviour, and the ‘bloodless’ facial appearance, in a descriptive manner (colour), without naming any causal origin or triggering process. For the ‘hypo-‘ part of the syndrome, the exhaustion and weakness, the terms ‘depletion’, ‘wasting’, or ‘consumption’ would describe the diminishing of the ‘bodily reserves’ and of the person’s ‘resources’ to cope or survive, and the loss of integrity under physical strain or mental stress that are attached to this condition. The words wasting, white, fever (which means both agitated and hot) are also typical of the archaic literature. They provide an understanding of the syndromes that is completely lost in contemporary causal medicines (dominant or alternative), and with it, the easiest way to undo and prevent these states.

The following extracts will help the reader ‘see patterns’, understand the ‘workings’ of such syndromes, and gain an overall view of the medical-clinical landscape concerning them.


Reactivity and extremes of sensitivity: disrupted stability

- ‘The “Specific Adaptation Syndrome” has been described in humans to differ from the “Generalized Adaptation Syndrome” in that maladaptation can occur to one specific stress, in particular a single chemical (Randolph, 1962). The extent to which these stress syndromes are equivalent can be debated, but in any event they are very similar. The concept that multiple chemical sensitivity is a distinct entity that is mused by responses to chemicals originated in the work of Randolph in the 1950s (American College of Physicians 1989, Ashford and Miller 1991). In the disease model proposed by Randolph, multiple chemical sensitivity consists of an inability to adapt to chemicals and the development of responsiveness to extremely low concentrations after sensitization (Randolph 1956); the model postulates multiple symptoms that reflect involvement of multiple organ systems. Randolph’s pathogenic schema includes “adaptation.” Symptoms can occur on exposure to chemicals or on withdrawal from exposure after an adaptive response has taken place. Randolph and others who apply this model of pathogenesis have used controlled exposures to establish the presence of multiple chemical sensitivity: patients are placed in environments judged to eliminated deleterious agents and then exposed to suspect chemicals. Many of the physicians who apply that model are now referred to as clinical ecologists.’ (Randolph 1956)

- ‘describe how the insulin glucagon flip-flop controller can be complemented by growth hormone despite both being integral controllers. [...] Here we describe how the insulin:glucagon flip-flop controller can be complemented by growth hormone, despite both being integral controllers. Homeostatic conflict is prevented by somatostatin-28 secretion from both the hypothalamus and the pancreatic islets. [...] Our synthesis of the information that has accumulated in the literature pertaining to the glucose homeostat predicts that disruption of the flip-flop mechanism... will lead to ... insulin
resistance, glucose intolerance, and impaired insulin responsiveness... it explains Syndrome X (or Metabolic Syndrome).’ (Koeslag 2003)

- ‘Recently proposed methods of assessment of the cardiovascular reactivity, the “thermodynamic instability score” (HIS) and the “Fractal and Recurrence Analysis-based Score” (FRAS) [...] may be used to support the diagnosis of CFA, [...] A pilot study suggested that midodrine treatment directed at the autonomic nervous system in CFS, results first in correction of dysautonomia followed by improvement of fatigue [and] that manipulating the may be effective.’ (Jochanan et al. 2004 p.203)

- ‘When the ergotropic system is activated, the entire body/mind becomes aroused. By comparison, the trophotropic system is “wired” for the fine tuning of organs in relation to each other as the demands of internal maintenance shift and change...The point to emphasize is that whereas the trophotropic system is designed for continuous activity. We are “wired” for short, infrequent bursts of adaptive activity interspersed with relatively long durations of rest, recuperation and growth...Prolonged ergotropic reactivity may cause depletion of vital resources stored by the trophotropic system in various organs, and may cause fatigue, shock, body damage, and in extreme cases, death (Selye 1956; Antonovsky 1979)... The particular balance of ergotropic and trophotropic activities under particular environmental circumstances is susceptible to conditioning... and there is evidence that their characteristic balance under stress is established as early as pre-and perinatal life (Grof 1976; [etc.])’ (Laughlin et al 1990 p. 316)

- ‘Two somewhat different but related sets of ideas have been presented: nonlinear dynamics and information exchange within the organism and between it and the environment by signals. Both of these concepts speak a language that expresses the basic characteristics of the dynamics of whole living organisms and other complex systems: function in its various forms; qualitative (parametric) changes in function; rhythmic and usually stable modes of functioning; and individual variations in function. [...] Integrative concepts have been needed in the field of stress research. [...] An integrated portrayal of the organism in its world was sought. Until recently no common language seemed to exist... A long sought-for language seems now to be evolving that may accomplish this unifying purpose. Function is such a unifying and dynamic concept.’ (Weiner 1992 pp.283)

- ‘Nonlinear mathematical models are approximate descriptions of the dynamic functions of biological systems. It is acknowledged that a more realistic account of physiological rhythms is needed. Feedback, that in part accounts for them, is provided by information exchange within the organism and between organisms by signals of a large variety of kinds. In this way, the organism is kept informed about its own internal state and the condition of the external environment.’ (Weiner 1992 p.283)

- ‘Patterns are rhythmic. Rhythms have qualitative properties by which they can be described and distinguished. The genesis of rhythmic patterns of biological and behavioral systems – i.e. the function and behaviors of cells, organs, or whole populations or organisms – can be described by the mathematical concept of self-organization in nonlinear systems. Nonlinear characterization of a system also defines the conditions for stability, fluctuation, and phase transitions of functions into other stable conditions or those that favor the evolution and emergence of new properties of a system over time.’ (Weiner 1992 p.283– see <Extracts F8> Establish: forms of stability>)

- ‘Selye believed that many diseases – hypertension, peptic ulcer, and allergic, rheumatic, and collagen diseases were the product of excessive or “adaptive” reactions, in which the corticosteroids played a pathogenic role.[...] We know today that these varied diseases are not only multifactorial and heterogenous in their etiology and pathogenesis, but are also characterized by disturbances …’ (Weiner 1992 p.15)

- ‘Rhythmic functions manifest stability but, being dynamic are perturbable.’ (Weiner 1992 pp.284)

- ‘Empirical advances: Until fifteen years ago stress research consisted of correlations between the stressor and the physiological and/or anatomical changes in the body. The discovery of the brain-gut peptides and other advances in neurobiology have [...] a new impetus to stress research. (1)Two forms of stress analgesia have now been described [...] (2) The function of brain peptides is to produce patterned physiological changes, which are exactly what an integrated view of the responses to stressful experiences demands...’ (Weiner 1992 p.5)

- ‘...the organism responds in a patterned and integrated, [...] to ... perturbations, ... or complex changes in the environment. One seeks to understand by what means the organism recognizes them, what is
the meaningful signal that is perceived... behavioral and physiological responses designed to ensure survival..' (Weiner 1992 p.2)

‘the person for diverse reasons has failed to cope..’ (Weiner 1992 p.15)

• ‘There is another category of pain, however, called chronic pain. As far as we know, this type of pain does not serve any known purpose; it has outlived its usefulness. Think of it as the signaling system stuck in the "on" position. This type of pain can be caused by an obvious source of ongoing damage to the body, such as in rheumatoid arthritis. The nerves themselves can be damaged, such as with shingles or carpal tunnel syndrome. However, the most frustrating problems for both patient and physician are those involving a more mysterious dysfunction in the pain sensing or interpretation centers of the spinal cord and brain. Fibromyalgia and chronic migraine fall into this category. […] ‘Doctors are now practicing in an era of “evidence-based” medicine. If one can't prove something, based on randomised double-blind placebo-controlled trial, then it must not be true. Taken to excess this view discounts individual clinical experiences.’ […] Jackson attempts to pull together information from history, science, philosophy, culture, religion, and from the patients and pain specialists she interviews, in a search for the meaning of pain. […] The author writes about the "Myth of Two Pains" -- physical vs mental – [that has plagued us for centuries and continues to adversely affect our treatment of patients suffering from chronic pain. She notes the 19th-century view that: "pain wasn't legitimate unless it could be pointed to, probed and measured; otherwise it was 'hysteria,' 'neurasthenia,' or simply madness. […] On the other hand, Jackson also discusses why pain is not simply about altered neurochemistry. She writes about the need to acknowledge psychosocial/spiritual contributors in a patient with pain, without "blaming the victim" or dismissing the problem as "all in the head." She touches on the intriguing idea that our early life experiences of suffering, such as childhood traumas, can hardwire our "pain thermostats" to be more sensitive to pain later in life.’ (Jovey 2002)

Part 2: The Sc-medical viewpoint

Inflamed: developments of a syndrome of reactivity

• ‘The most obvious pathology in IBD is inflammation, probably with an autoimmune element, and there are certainly numerous inflammatory mediators and metabolites present (e.g. cytokines). Of the other typical pathologies, those with a nutritional element include […] increased gut permeability, increased oxidative stress...abnormalities of nitrous oxide...changes in the local bowel environment...abnormal metabolism of short chain fatty-acids and food allergy...Of course many of these are interrelated ... making it all very hard to unravel the 'cause' in a strict sense. […] With such uncertainty about cause it is hardly surprising that nutritional therapy has tended to be more pragmatic than derived from some fundamental understanding of the aetiology of IBD. […] There are many reasons why IBD patients might be malnourished.' (Helman 2005)

• ‘Knowledge of the world outside... Our senses relay this information to the brain...information, chemical, electrical...five primary senses- sight, sound, taste, smell and touch... directed outward...immune system surveys the world within... translates into a language the brain itself uses to regulate body processes... No one would now question that the mind can accelerate, or possibly even initiate, morbid conditions in the body through the immune system. But could it just be that the mind, in addition to causing disease, can also help us actively to ward it off... Which system dominates in a crisis?’ (Clark, pp.240-241).

• ‘For many disorders inflammation is so obvious it does not have to be measured. For example, the pain of arthritis is a clear enough sign of inflammation. Swelling redness, and tenderness to the touch also are obvious signs of inflammation [...] These are typically localized forms of inflammation. [...] More general systemic, or bodywide, inflammation is not always apparent. Inflammation of blood vessel walls increases the risk of a heart attack...’ (Challem 2003 p.15)
• ‘Background: Sepsis is a vast clinical entity that takes a variety of forms. The spectrum of disorders spans from relatively mild physiologic abnormalities to septic shock. The focus of this chapter is on systemic inflammatory response syndrome (SIRS), a syndrome that encompasses the features of systemic inflammation without end-organ damage, identifiable bacteremia, and the need for pharmacologic support. […] Stages: A continuum exists from an immune trigger to SIRS to sepsis to severe sepsis to septic shock that leads to MODS and death. The “window of opportunity” for targeted intervention is immediately after SIRS develops. The patient’s course along this continuum may be charted as a prognostic indicator. Clearly, progression towards the latter elements in the continuum is a poor prognostic event. The key transition from SIRS to sepsis according to definition is the presence of an identified pathogen.’ (Kaplan, et al. 2004)

• ‘Inflammation by remote control: …adaptive immune system orchestrate the innate inflammation that promotes tumour progression. The link between inflammation and the promotion of cancer was first observed in the nineteenth century, but only in recent years has it become generally accepted. Overall de Visser and colleagues draw attention to the poorly explored issue of the interplay between the innate and adaptive arms of immunity – on the one hand in surveillance against cancer T cells, and on the other in inflammation–driven cancer promotion. Therapeutic targeting of cancer-promoting inflammatory reactions is in the early stages of development, and its progress will depend on defining the underlying cellular and molecular mechanisms in the relevant systems. […] Surface cytokines-remodelled triggers mast cells.’ (Mantovani 2005)

• ‘…Doctors are loathe to believe that he patient’s list of symptoms has any validity without some blood test, x-ray or palpable lump. When I found food sensitivities in myself and my family that explained… it was easy to find similar reactions in my patients… Most readers will discover that they are not hypochondriacs or emotional cripples.’ (pp v and vi) […] ‘Many scientists now believe that disease, including allergy, can first be detected as a disturbance of the normal flow and balance of the energy in the body… Since every cell in the body produces energy and has polar energy, energy is the fundamental principle that underlies everything that happens in the body including biochemical changes.’ (Bateson-Koch 1994p.163)

• ‘Autoimmune disease is now the third major category of illness in the U.S.: Seventy-five percent of those affected are women.’ (Vennum, 2001)

‘White fever’, ‘Green sickness’ and exhaustion:
Female instability in medieval frameworks

• Furth (1999) describes the medieval Chinese ‘the earned doctors’ efforts… to find the roots of women’s illnesses in holistic clinical patterns beneath the surface of ordinary symptoms. […] They medicalised menstruation as a bodily signifier of ideal female normality identified with fertility’(p.60) This shifted how ‘the female body was read. Abnormal vaginal discharges took a back seat to irregular menses, shifting the pathological sign from the foul to the unpredictable’. (Furth 1999 p76)

‘No special prescriptions for women were indicated for any febrile disorders from Cold Damage (shanghan) or Warm epidemic (wenyi) – the largest, most important syndrome clusters thought to arise from pathogenic qi in the environment. This was in keeping with Sun Simaiao’s classic statement that disorders due to external agency were no different in males and females.’ […] (Furth 1999 p.79)

‘However, three broad internal syndromes clusters were given a place in the fuke chapters, indicating that in females doctors should look for signs of gender difference. First, Wind stroke was grouped under a master pattern functional disorders [sic] from Wind (feng). Wind was found both in the external world and within the body… manifest in pathological internal changes – rapidly moving symptoms and sudden loss of function. […] The paradigmatic Wind attack was a stroke, apoplexy, paralysis coma, or perhaps a fit marked by ravings and convulsions. Working more slowly, pathodegic wind might lodge in the limb that withered, the extremity that was numb, the rheumatic joint, the palsied tongue. (Furth 1999 p.79)

‘The second broad cluster, depletion fatigue, assembled afflictions marked by slow, chronic wasting, where the sufferer grew emaciated and debilitated, accumulating a host of secondary symptoms from
pallor, indigestion and shortness of breath to hair loss, hot sensations on palms of hands and soles of feet, and palpitations, while also experiencing destabilized psyche marked by disturbed dreams or insomnia, fits of melancholy or anger.' (Furth 1999 p.79)

‘The third cluster, “swellings and accumulation” (jiju), produced as “swellings”, masses, tumors, lumps or circulation blockages where the movement of qi up and down was impeded.’ […] As illness labels, this kind of symptomatic nosology represented only the beginning of diagnosis, which ideally proceeded to distinguish patterns… Fuke emphasized disorders from Wind presumed to agitate and destabilize Blood and qi. […] Wind-generated itching and irritation of skin, or hives, also were included…’ (Furth 1999 p.80)

[…] ‘Finally, the most dangerous, life-threatening forms of depletion fatigue – “bone steaming” – required “separate prescriptions”. To today’s readers, such advanced fatigue, eventually penetrating to bones, sounds like the tubercular “consumption” of early modern European medicine in its patterning of physical decline, respiratory distress, emotional volatility and sexual excitability. The sufferer experiences shortness of breath, loss of appetite, fierce sweats, cold extremities, dreams of intercourse with ghosts, … coughing and pain in the side…’ (Furth 1999 p.79-81)

• The second broad cluster, depletion fatigue, assembled afflictions marked by slow, chronic wasting, where the sufferer grew emaciated and debilitated, accumulating a host of secondary symptoms from pallor, indigestion and shortness of breath to hair loss, hot sensations on palms of hands and soles of feet, and palpitations, while also experiencing destabilized psyche marked by disturbed dreams or insomnia, fits of melancholy or anger.’ (Furth 1999 p.79)

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Green sickness, white fever, chlorosis, disease of virgins, anorexia nervosa, irritable bowel syndrome, or M.E. (myalgic encephalitis), hypochondriasis:

• ‘Both chlorosis and pregnancy were thought to cause paleness, but the areas of potential overlap between them were reinforced by a further, and striking, symptom they had in common: pica, the consumption of non-food substances such as earth, coal, chalk, and ashes.’ (King 2004 p.10)

‘…dyspnoea, a trembling palpitation of the heart, swelling of the liver, aversion of the stomach towards food, cardialgia, and not uncommonly epilepsy with madness and delirium. Hippocrates vouches for this in his book On the diseases of virgins, in these words: afflicted with fancied terrors of spectres, […] menstrual blood descends… into the small spaces of the womb, as if it were going to flow out. But the mouths of exit of blocked […] It is not at all surprising… that the tissues of the hypochondria swell, and this compresses the diaphragm, as in dropy, and causes difficulty in breathing.’ (King 2004 p.47)

‘This could suggest that green sickness operated as a form of internal poisoning. This would be compatible with the Galenic view that the retention in the womb of menstrual blood… can lead to substance rotting, giving off noxious vapours which affect the rest of the body.’ (King 2004 p.26)

‘Liébault went on to claim that few of Hippocrates’ successors, ancient or modern, had been able to match this knowledge of gynaecology, because the subject is inherently shifting and unstable; the diseases of men are easier to treat because they remain constant over an individual’s life, whereas women move between the categories of virgin, wife, pregnant woman and mother.’ (King 2004 p.44)

‘She regarded menstruation and male nocturnal emissions as equivalent, representing “the natural healthy actions of self-balance”; both occur spontaneously in healthy people, and can frighten young people.’ (King 2004 p.136)

‘Hirsch’s survey of medical journals also suggested that chlorosis was widespread in Mexico, the West Indies, Brazil, Algiers, India, China and Japan.’ (King 2004 p.136)

‘Many educated women [1880’s] continued to present female adolescence as a time of dramatic change and instability.’ (King 2004 p.137)

‘By the nineteenth century, the first [menstrual “retention”] was “primary amenorrhoea”, and the second [menstrual “suppression”] was secondary amenorrhoea.’ (King 2004 p.10)
‘… similar symptoms would receive very different diagnoses depending on the age and gender of the patient.’ (King 2004 p.16)

‘What was the disease of virgins?… The broad symptom picture meant that it could include what we would currently want to label as anorexia nervosa, irritable bowel syndrome, or M.E. (myalgic encephalitis), but the idea of such a disease could also account for vague feelings of tiredness or malaise, provided they occurred in a young girl.’ (King 2004 p.139)

‘… his own recommendation of marriage as a cure, because this will remove any obstacle preventing the blood from flowing out, and “if they become pregnant, they will be cured”. However, the last lines of the text warn, even married women may suffer this way if they do not have children.’ (King 2004 p.50)

‘Jacobi… mentioned what he called “chloranemic girls” who could often be cured by pregancy..’ (King 2004 p. 138)

‘Both chlorosis and pregnancy were thought to cause paleness, but the areas of potential overlap between them were reinforced by a further, and striking, symptom they had in common: pica, the consumption of non-food substances such as earth, coal, chalk, and ashes.’ (King 2004 p.10)

‘But different labels have always been available to apply to a young girl, “pale as if bloodless”, with disturbed eating patterns who failed to menstruate, and different stories can be told depending on whether food consumption is thought to affect menstrual cycles…’ (King 2004 p.2)

(See also the ‘green substance’ that Budwig is purported to have found in the blood of cancerous patients.)

Water: fluids, cerebrospinal fluid, allergy and immune defence

- ‘Malnutrition could contribute to neurotransmitter disturbances.’ . (Anderson & Kenedy, 1992 p.120)

  ‘Neurotransmitter disturbances could be related to… fluid or electrolyte abnormalities. (op. cit. p.120)

- ‘In general, prostaglandin E\textsubscript{1} (PGE\textsubscript{1}) is thought to relax smooth muscles in the airway and to inhibit muscle constriction. We hypothesized that, under the specific conditions, PGE\textsubscript{1} induces bronchoconstriction, resulting in the promotion of inflammation. Examples of the specific conditions where this mechanism may occur include cases where patient [sic] who are susceptible to inflammation receive a continuous infusion of PGE\textsubscript{1} during induced hypotension or during treatment for intraoperatively abnormal hypertension. [...] Induced hypotension is often used during surgery to decrease the intraoperative bleeding volume… The maintenance of induced hypotension requires a continuous infusion of PGE\textsubscript{1}, since approximately 90% of the dose is inactivated after a single pass through the pulmonary vascular bed.’ (Uchida et al. 2003)

- ‘Cerebrospinal fluid (CSF) volume depletion [...] is typically indicated when patients present with orthostatic headaches, with or without several other symptoms: neck or interscapular pain, nausea, emesis, diplopia, changes in hearing, visual blurring, facial numbness or weakness, and radicular upper-limb symptoms. [...] with or without evidence of sagging of the brain… Magnetic resonance imaging has revolutionized detection of spontaneous CSF leaks, leading to identification of far more cases and recognition of several clinical/imaging forms of presentation of the disorder. These forms, which are different from the “typical” presentation, include a group with consistently normal CSF pressures (normal pressure), another group without abnormal meningeal enhancement (normal meninges), and a group without headache (acephalic). Each of these forms can be seen in a setting of documented and ongoing CSF volume depletion. Awareness of CSF volume depletion is increasing, and its clinical and imaging spectrum is broadening.’ (Mokri 2000)

- ‘Most knowledge of human synovial fluid comes from patients with joint disease. Because of the clinical frequency, volume, and accessibility of knee effusions, our knowledge is largely limited to findings in that joint.’ (UW Medicine, orthopedics 2005)

  ‘A number of factors interact to confer stability, while permitting motion in active human joints… the shape of the component parts… Ligaments provide a second major stabilizing influence… Muscular stabilization is perhaps most obvious in the shoulder, which is the quintessential polyaxial joint. The rotator cuff muscles approximate and stabilize the articular surfaces. [...] Synovial fluid contributes
significant stabilizing effects as an adhesive seal that freely permits sliding motion between cartilaginous surfaces while effectively resisting distracting forces. This property is most easily demonstrated in small articulations such as the metacarpophalangeal joints. The common phenomenon of "knuckle cracking" reflects the fracture of this adhesive bond. Secondary cavitation within the joint space causes a radiologically obvious bubble of gas that requires up to 30 minutes to dissolve before the bond can be reestablished and the joint can be "cracked" again. This adhesive property depends on the normally thin film of synovial fluid between all intraarticular structures. When this film enlarges as a pathologic effusion, the stabilizing properties are lost. In normal human joints, a thin film of synovial fluid covers the surfaces of synovium and cartilage within the joint space. The volume of this fluid increases when disease is present to provide an effusion that is clinically apparent and may be easily aspirated for study. For this reason, most knowledge of human synovial fluid comes from patients with joint disease. Because of the clinical frequency, volume, and accessibility of knee effusions, our knowledge is largely limited to findings in that joint. (UW Medicine 2005)

Aquagenic urticaria
• 'No abnormal findings at the physical examination and the laboratory evaluation did not reveal any disturbances.' […] Aquagenic urticaria is diagnosed by exclusion (1, 6, 8); thus the investigator has to complete all the proceedings that are common for the physical urticarias and other systemic causes of this complex disease. In this case there was a curious parallel observation related to the side effects of the anti-H\textsubscript{1} drug cetirizine. Contrary to what was expected, the patient told of drowsiness with cetirizine, but on the contrary had no side effects and good therapeutic results with another type of anti-H\textsubscript{1} drug, hydroxyzine, which is known to produce drowsiness and other side effects. We do not have any explanation for this except individual response.' (Medeiros 1996)

• 'Exposure to water can cause urticaria in susceptible patients and antihistamine and anticholinergic medication may not prevent the reaction. The mechanism of this phenomenon remains poorly understood.' […] 'Approximately 25 cases have been reported… Females were affected more often than males. Of interest, dermographism may be present, especially in male patients with a history of asthma.' […] 'These findings suggested an association between cutaneous and bronchial hyperreactivity.' (Luong & Nguyen 1998)

• 'The relationship of acetylcholine and histamine [releases] to each other and to contact of water with the skin remains uncertain.' (Sibbald et. al. 1981)

• 'Urticaria is the most benign form of anaphylaxis.' […] 'By definition, the acute form of urticaria lasts less than 6 weeks, and the chronic form lasts more than 6 weeks.' […] 'Although the determination of the underlying etiology of urticaria represents a diagnostic challenge, the management of acute urticaria is more straightforward.' […] 'The etiology of chronic urticaria is undetermined in at least 80-90% of patients.' […] Recurrent urticaria can be: solar, cholinergic (sweating), aquagenic, related to cold, heat, or to physical or emotional stress.

Synonyms and related keywords: hives, allergy, allergic reaction, anaphylaxis, anaphylactoid reaction, angioedema, circumscribed areas of erythema, hereditary angioedema, acute immunoglobulin E-mediated hypersensitivity, pruritus, itching, rash, rhinorrhea, sore throat, demographism, SLE, pharyngitis, GI infections, genitourinary infections, respiratory infections, fungal infections, dermatophytosis, malaria, amebiasis, hepatitis, mononucleosis, coxsackievirus, mycoplasmal infections, scabies, parasitic infections, ascariasis, schistosomiasis, strongyloidiasis, trichinosis, food allergies, penicillins, sulfonamides, salicylates, NSAIDS, codeine, pollens, chemicals, danders, dust, mold, latex, pruritic urticarial papules and plaques of pregnancy, PUPPP, cholinergic urticaria, hyperthyroidism, rheumatoid arthritis, polymyositis, amyloidosis, polycythemia vera, carcinoma, lymphoma, cold urticaria, cryoglobulinemia, cryofibrinogenemia, syphilis, connective tissue disorder, urticaria pigmentosa, Darier sign, solar urticaria, aquagenic urticaria' (Scott & Crawford, 2006)

Anaphylaxis
• 'Synonyms and related keywords: allergy, allergic reaction, anaphylactoid reaction, urticaria, angioedema hypersensitivity, hypotension, bronchospasm, pruritus, dizziness, myocardial ischemia, wheezing. […] Background: Anaphylaxis refers to a severe allergic reaction in which prominent dermal and systemic signs and symptoms manifest. The full-blown syndrome includes urticaria (hives) and/or
angioedema with hypotension and bronchospasm. The classic form, described in 1902, involves prior sensitization to an allergen with later re-exposure, producing symptoms via an immunologic mechanism. An anaphylactoid reaction produces a very similar clinical syndrome but is not immune-mediated. Treatment for both conditions is similar, and this article uses the term anaphylaxis to refer to both conditions unless otherwise specified. Pathophysiology: Rapid onset of increased secretion from mucous membranes, increased bronchial smooth muscle tone, decreased vascular smooth muscle tone, and increased capillary permeability occur after exposure to an inciting substance. These effects are produced by the release of mediators, which include histamine, leukotriene C4, prostaglandin D2, and tryptase.' (Krause 2005)

**A candidate for nexial-topologic topographic modelling: bronchial asthma**

- ‘The ancients considered asthma a guarantee of long life, certainly! But in France nearly 2 000 asthmatic die each year because of their disease.’ (Godard et al. 1998) [‘Les anciens qualifiaient l’asthme de brevet de longue vie, certes! Mais en France près de 2 000 asthmatiques meurent chaque année du fait de leur maladie.’]

- ‘The geometry and dimensions of branched structures such as blood vessels or airways are important factors in determining the efficiency of physiological processes. We present a study of the compatibility between physical optimisation and physiological robustness in the design of the human bronchial tree... Our results suggest that bronchial malfunction related to asthma is a necessary consequence of the optimised efficiency of the tree structure.’ (Mauroy et al. 2004)

- ‘Asthma, a chronic inflammatory disease of the airways involves activation of various cell types and development of various degrees of post inflammatory healing and repair processes which remodel the airways. The short duration of the severe episodes is clearly related to the degree of inflammation but the natural history of the disease itself remains unclear. Treatment must take into account the fact that clinical expression varies.’ (Bousquet et al. 1996)

- ‘Curiously enough, a kind of curse combined with therapeutic fatalism still hovers over bronchial asthma[...] In the past, this condition may not have been recognised for what it is, that is to say a multi factorial syndrome resulting from the innate and the acquired, from specific (allergic) and/or non-specific factors. [...] asthma is an inflammatory illness of the bronchi provoked by the liberation of mediators. [...] If bronchial asthma remains under-diagnosed and under-treated in France and in Europe it is due to the fact that the artificial distinction between paroxysmal (bronchitis called “asthmatic”), and persistent (that is to say a so-called asthmatic illness), is often maintained.’ (Michel et al. 1986)

**Chronic Obstruction Lung Disease**

‘COPD is the new name for emphysema and chronic bronchitis. Chronic Obstructive Pulmonary Disease is a long-term lung disease’ that makes it hard to breathe because:

- the tubes (airways) and air sacs in your lungs lose their shape and stretchiness = turn to fiber
- the walls of the alveoli become thick and swollen, = swell
- cells in the airways are irritated and red make too much sticky mucous, = Red
- the walls between many of the air sacs are destroyed

(Summarised 9-August-2006 from Canadian Lung association 2006)
These topographic elements (tubes, sacs boundaries and walls, thickness), nexial elements (red, sell, sticky), and topologic elements (shape and stretch), make this disease a good candidate for nexial-topologic modeling of ‘deployment’, with asthma and repeated dry cough as its early stages.

**Similarities**

- ‘Many of the symptoms of CFS are consistent with a host response to pathogenic challenge. We are focussing on proteolytic response, or catabolism, which involves muscles, acting as a protein reservoir, which release amino acids to fight infections and to build new materials when needed. This well documented response is seen in trauma, infection, stress, certain genetic anomalies, acquired disease states and cancers. There are two types of storage reservoirs, the fibrillar reservoir... and the non-fibrillar reservoir... When the non-fibrillar response is insufficient to meet demands, the fibrillar response is switched on like a backup system... (p.22) […] In many patients we see the amino-acid 3-methyl-histidine, which is the marker of this fibrillar response... So, using well documented markers of metabolism, we have found that the body is responding to some prolonged, traumatic, perhaps infectious challenge. We find in most patients that the leucine level is very low, sometimes undetectable, meaning that catabolism will be sustained. […] So we can begin to explain some of the digestive problems and some aspects of nutrient deficit in long term patients… Some clinicians use betaine HCl as that might be appropriate to assist in the improved efficiency of absorption of nutrients.’ (Dunstan 2001 p.22-23)

- ‘It is becoming more and more evident that Dr Levine is right when he says that stress, whether chemical, physical, infectious, viral or emotional in origin can deplete our defences to the point that we suffer an increase in inflammatory, infectious and degenerative diseases. There is not one cause for an illness like Chronic Fatigue Syndrome. There are many causes and each individual may have a different range of causes that produce a different range of symptoms... Patients have to learn to ask the right questions.’ (p.15) […] ‘Anything that affects our nervous system is likely to affect our immune system as well. And it often works the other way around. […] The brain is, of course part of what we call the “central nervous system” and disturbances of that system can give rise to physical neurological and mental symptoms and illnesses ranging from peripheral body neuropathy…’ (Vayda 199 p.112)

- ‘Euthyroid Sick Syndrome is… not considered to need treatment because there are no symptoms and the tests go back to normal when the stressful illness has passed. Wilson’s Temperature Syndrome causes severe low thyroid symptoms and is undiagnosable with thyroid blood tests. The symptoms can persist for years after a stressful illness and can worsen with subsequent stresses.’ (Willson 2005)

[Note: Wilson’s Syndrome: invisible symptoms, but feel sick; Euthyroid: visible symptoms, but do not feel sick]

<table>
<thead>
<tr>
<th>Euthyroid Syndrome:</th>
<th>Wilson’s thyroid Syndrome:</th>
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<tr>
<td>Thyroid blood tests</td>
<td>always abnormal</td>
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<tr>
<td>Low thyroid symptoms</td>
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‘Wilson’s Thyroid Syndrome is often reversible… Low body temperatures as well as other signs and symptoms of low thyroid function, which are unexplained by thyroid blood tests, characterize Wilson’s Thyroid Syndrome... Stress …can especially bring on the symptoms….The Treatment … involves the use of pure T3 powder mixed with a sustained release agent... patients take increasing doses according to the schedule and their signs and symptoms. ... Sometimes more than one cycle of treatment is needed. Comment: re-establishing operational set point for body temperature. …A person can be given enough T3 to capture her temperature and reset her system... The principle T3
replacement therapy in order to reset the system well enough for it to begin functioning properly on its own again.’ (Dunstan 2001 p.22-23)

- ‘In recent years terms such as ‘syndrome X’, ‘cluster diseases’, ‘5H syndrome’, ‘metabolic syndrome’, ‘multiple risk factors’ and ‘diseases of civilization’ have made their way into the scientific literature. Many health risk factors and disease states are beginning to be recognized as connected by common characteristics… chronic elevated circulating insulin is common in atherosclerosis, essential hypertension, non-insulin dependent diabetes mellitus, some forms of obesity, some forms of cancer, cardiovascular disease and some forms of stroke.’ (Heller et al. 1996)

- ‘So many patients are not diagnosed for years, due to overlooking a few of the simple tell-tale symptoms of a Pituitary Disorder [and tumors]: Headaches, Depression, Mood/Emotion Swings, Anger, Loss of Memory, Loss of Sleep,…’ (Pituitary Network Association 2006)

Akathisia and restless leg

- ‘Akathisia manifesting as violence […] and suicide’ (Sachdev 1995 p128-129) and with ‘subjective manifestations […]and] objective feature.’ (op. cit. p130) ‘Neuroleptic-induced dysphoria […] is marked by] slowing of thinking and movement… paralysis of volition… [without] sleepiness or sedation, severe anxiety’ (op. cit. p47) ‘In postencephalic parkinsonism… symptoms [are categorized into] paraesthesiae (burning, coldness, tingling and numbness)… and pain (poorly localized painful sensations without thermal or anaesthetic characteristics and not associated with increased muscle contraction or affected by movements or pressure). The pathogenesis of these symptoms is not understood. (op. cit. p51). ‘The effect of activating maneuvers […] The performance of voluntary movements, especially those involving concentrated effort, affects the manifestations of involuntary movements. Movements like tongue protrusion, finger tapping, or walking (1) may bring out movements not otherwise apparent. […] It is our observation that the movements of AA [acute akathisia] are usually diminished, and may disappear completely, during such activities. […] The adjective activating has been retained to describe these manoeuvres, in the case of akathisia they tend to produce the opposite effect, ie, diminishing or suppressing the movements… during the motor task.’ (Sachdev 1995 p 133).

Systemic aspects of chronic ill health: many causes

- ‘Brain and Central Nervous System symptoms include cognitive dysfunction, clumsiness, disequilibrium likened to ‘walking on rubber’, and word finding abilities. Problems with control of the autonomic nervous system results in palpitations, sweating episodes and symptoms associated with low blood pressure/postural hypotension.’ (Myalgic Encephalomyelitis Society of America 2004) [Expressive aphasia is the diagnosis for those having difficulty remembering words, naming objects or expressing ideas.]

- ‘The cleavage of poly (ADP-ribose) polymerase (PARP) is an essential link in the apoptotic pathway in animal cells, plant cells however, results suggest that apoptosis in plants and animals may share common mechanisms.’ (Tian, et al. 2000)

- ‘[…] oxidation of glucose requires less oxygen per mol of ATP generated, and thus is preferable to fat oxidation when oxygen availability is limiting… chronic use of these drugs [new anti-anginal drugs] can be expected to increase body fat stores until the original rate of fat oxidation is restored by mass action,… exacerbating the manifold adverse effects of insulin resistance syndrome…[With] a very low fat quasi vegan diet (i.e., 10% fat calories)… a reduction in diurnal insulin secretion might also be achieved, which would be expected to decrease sympathetic activity.’ (McCarty 2004 p.62)

- ‘For more than 2000 years philosophers, scholars and physicians attempted to discover the bodily cause of hypochondria... Modern investigators have attempted to understand the older theories but have been confused because there have been changes in language and word usage, and when current translations are made, the ideas do not seem to make sense, consequently most of human history’s knowledge, experience, evidence and ideas on this subject have been lost.’ (Bansfield 1996)
• ‘In civilized communities, better sheltered, less exposed, and with the aid of the ablest professional skill, the sanitary conditions of mankind, with its variety, its complications, and fatality of diseases – its aches and pains, and mental and physical deformities presents lamentable and mournful list, which plainly indicates the existence of some extraordinary latent cause, not yet as sufficiently appreciated, and which it is the sole object of this little work to expose.’ (Catlin 1870 p.1)

[…] ‘I have also extended my visits and my inquiries into the tribes in the same latitudes, living in their primitive State, and practising their native modes, I offer myself as a living witness, that whilst in that condition, the Native Races in North and South America are a healthier people, and less subject to premature mortality (save from the accidents of War and the Chase, and also from Small-pox and other pestilential diseases introduced amongst them, than any Civilized Race in existence [in 1870].’ (op. cit. p.2)

‘But when we turn to civilized life with all its comforts, it luxuries, its science, and its medical Skill, our pity is enlisted for the tender germs of humanity, brought forth and caressed in smothered atmospheres which they can only breathe with their mouths wide open, and nurtured with too much thoughtlessness to prevent their contracting a habit which is to shorten their days with a croup in infancy or to turn their brains into Idiocy or Lunacy and their spines to curvature—or in manhood their sleep to fatigue and the nightmare, and their lungs to premature decay.’ (op. cit. p.5)

[…] ‘This cause I believe to be the simple neglect to secure the vital and intended advantages to be derived from quiet and natural sleep.’ (op. cit. p.4)

‘Besides the list of fatal diseases already given, and which I attribute chiefly to the pernicious habit which I have explained, sleeping with the mouth open, there are other results affecting the senses, personal appearance, and the enjoyments of life, which though not fatal, are themselves of sufficient importance to demand its correction; such as Curvature of the Spine, Idiocy, Deafness, Nightmare, Polypus in the nose, Malformation and premature decay of the teeth, Toothache, Tic-douloureux, Rheumatism, Gout and many others.’ (op. cit. p.9)

• ‘The “dry mouth” is the very last sign of dehydration. The body can suffer from dehydration even when the mouth may be fairly moist. Still worse, in the elderly, the mouth can be seen to be obviously dry and yet thirst may not be acknowledged and satisfied.’ (Batmanghelidj 1997 p. 18)

‘Products manufactured in the brain cells are transported on “waterways” to their destination in the nerve endings.’ (op. cit. p.19)

‘The histamine directed and operated neurotransmitter system becomes active and initiates the subordinate systems that promote water intake. These subordinate systems also redistribute the amount of water in circulation or that can be drawn away from other areas. Subordinate systems employ vasopressin, renin-angiotensin, prostaglandins and kinins and the intermediary agents.’ (op. cit. p.19) (see also histamine as an integrator of the perceptual body schema)

• ‘It has long been recognized that the performance of voluntary movements especially those involving concentrated effort, affects the manifestation of involuntary movements. An examination of dyskinetic movements in TD is instructive. Movements like tongue protrusion, finger tapping or walking may bring out movements not otherwise apparent. The movements of AA are usually diminished, and may disappear completely during such activities. While the adjective activating has been retained to describe these manoeuvres, in the case of akathisia they tend to produce the opposite effect i.e diminishing or suppressing the movements a reduction of akathisic movements during a motor task.’ (Sachdev 1995 p.133).

• ‘Thus, the human body cannot intelligently be regarded as embodying an homunculus residing in the tower of the cranium, impervious to the physiological matriculations of the “basier” body.’ (Shane & Cooper 2005)

• ‘food affects mental well being and behaviour’ (Van de Courtney 2005)

**Physical names: key words for a ‘meta-condition’, ‘super-syndrome’ of instability**

Here is a list of names gathered from the literature, for syndromes that have many similarities and overlaps.
Metabolic syndrome, syndrome X, cluster diseases, fibromyalgia, myalgia encephalitis, chronic fatigue immuno-dysfunction syndrome, allergies, hypersensitivity syndrome, irritable bowel syndrome, multiple chemical sensitivity, idopathic environmental intolerance, candida syndrome, burnout syndrome, sick building syndrome, repetitive injury syndrome, carpal tunnel, functional syndromes, subclinical nutritional deficiency syndromes, 'hidden hunger', silent illness, stress syndromes, inflammatory syndromes, adaptation diseases [General Adaptation Syndrome (Selye 1956), Specific Adaptation Syndrome (Randolph 1956)], diseases of civilisation, diabetes type 1, hypoglycemia, pain syndromes, side effects of implants (or of drugs or surgery), behavioural syndromes, Wilson cold syndrome, chronic multisymptom illness, 20th century syndrome, autonomic dystonia.

These names are reformulations of other names that have appeared since the medieval period: female depletion, exhaustion. consumption, or wasting, or green disease, chlorosis, diseases of virgins, etc. (see Furth 1999 and King 2004 in particular), and conditions related to coughing (see Despeux & Obringer 1997). More recently, in the modern period, these conditions took on more specific names, related to the namers’ perspective (eg interest in nerves, behaviour, immune system, pain, female physical nature, etc.): asthenia, myasthenia, neurasthenia, melancholia, bipolar disorder, cylothymia, hypothymic, hypochondriasis, hysteria, menstruation disorders, menopause, andropause, ageing, Kundalini syndrome.

- ‘OBJECTIVES: The aim of this study was to evaluate the effects of exercise training and body-awareness training in female patients with Syndrome X. BACKGROUND: Patients with Syndrome X, defined as effort-induced angina pectoris, a positive exercise test and a normal coronary angiogram, suffer from a chronic pain disorder. We hypothesized that this disorder results in physical deconditioning with decreased exertional pain threshold. [...] RESULTS: Body-awareness training did not change the pain response. [...] Thus the pain-response-to-exercise curve was shifted to the right. [...] CONCLUSIONS: Physical deconditioning with lower exertional threshold for pain is a prominent feature in Syndrome X. [...] We suggest physical training as an effective treatment in Syndrome X.’ (Eriksson et al. 2000)

- ‘The disease of adaptation deals with maladies [...] which we consider to result largely from failures in the stress-fighting mechanism.’; (Selye 1976 p. xviii – my italics)

Confusing syndromes – clinical and sub-clinical –, ‘silent’

Definitions of ‘subclinical’ (summary from various sources):
‘without clinical manifestations; said of the early stage(s) of an infection or other disease or abnormality before symptoms and signs become apparent or detectable by clinical
examination or laboratory tests, or of a very mild form of an infection or other disease or
abnormality’; ‘relating to the stage in the development of a disease before the symptoms are
observed’; ‘of an infection: one that produces no material pathological changes or that
produces minor pathological changes’; ‘pertaining to a disease, in which manifestations are
so slight as to be unnoticeable’.

- ‘Scurvy is a disease caused by vitamin C deficiency. It is characterized by poor wound healing,
  soft and spongy bleeding gums, edema, extreme weakness, and “pinpoint” haemorrhages under the
  skin…. More common are signs of lesser degrees of deficiency, including gums that bleed when
  brushed; increased susceptibility to infection especially colds and bronchial infections; joint pains, lack
  of energy; poor digestion; prolonged healing time; a tendency to bruise easily; and tooth loss.’ (Balch
  p.18)

- ‘Vitamin D: The Photolytic Reaction – Vitamin D should be reclassified as a hormone since it is
  only under conditions of inadequate exposure to sunlight that dietary intake is required. Vitamin D is in
  fact a group of closely related sterols produced by the action of ultraviolet light on certain provitamins,
  ergosterol in plants and 7-dehydrocholesterol in animals. The latter is synthesized in the liver and is
  found in the skin. The products of the photolytic reaction are ergocalciferol (vitamin D,) and
  cholecalciferol (vitamin D) respectively…both being further metabolized, converted to a series of
  hydroxylated derivatives …in the liver and in the kidney, producing the active compound…Vitamin D
  […] it is transported to the liver in chylomicrons. […] The main site for further hydroxylation at the 1-
  position is the renal tubules, and although bone and the placenta can also carry out this reaction…the
  most potent of the vitamin D metabolites and the only naturally occurring form of vitamin D that is
  active at physiologic concentrations..can maintain normal serum Ca in animals that do not have
  kidneys or parathyroid glands.’ (Baynes & Dominiczak 1999 p.112)

- ‘Subclinical pellagra, the hidden disease caused by a deficiency of niacin (vitamin B-3), produces
  symptoms similar to those of hypoglycaemia (low blood sugar).’ (Pfeiffer 1975 p.411)

- “Wastebasket diagnoses” abound in medicine and psychology. […] Biological science is at best
  only a progress report, so the “wastebasket” of today may be the goldmine of tomorrow. […] The
  pediatrician has a simple label for some cases, namely “failure to thrive”. This “without prejudice”
  labelling highlights the fact that it is the doctors job to find out why the patient doesn’t thrive.’ (Pfeiffer
  1975 pp. xvii-xviii)

  ‘The etiology of malnutrition may be divided into two categories, primary and secondary. […]
  Secondary malnutrition is due to factors interfering with the ingestion, absorption, or utilization of
  essential nutrients, or to stress factors that increase their requirement, destruction, or secretion.’ (op.cit. 
p.4)

  ‘The schizophrenia have retained the unfortunate status of “wastebasket” or hopeless cases. […]
  many syndromes which “mimic” schizophrenia exactly.. (op.cit. p.396).

  […] Eight syndromes are chemically-induced metabolic disorders, which suggested the strong
  possibility that the “true” schizophrenias left in the “wastebasket” might also be due to biochemical
  abnormalities. …in 1996 Pfeiffer and Iliev …showed the possible role of histamine, an amine found in
  all organic matter and, most notably in the brain. […] they established two major categories of
  schizophrenia, low histamine and high histamine’ (op.cit. p.397)

  ‘[…] Lysosomes, small organelles inside the cells, are concerned with cellular digestion, protein
  turnover, tissue remodelling, and autolysis of dead cells. They may take part in the cellular aging
  process by causing damage to the cell, by damaging extracellular structures through enzyme activity,
  or by an inability to perform their digestive function.’ (op.cit. p.446)

- ‘Health is not the absence of illness in Jean Lebel’s perspective.’ (Lebel 2003, foreword, p..viii).
  ‘Instead of targeting the small fraction of the population that is severely affected by a given illness –
  and achieving a very relative success rate – the aim is to attack the root cause of health problems and
thereby protect a larger number of people from illness – Figure 5: The health pyramid: [increasing number of cases – illness: the tip of the iceberg; Subclinical cases: long-term effects; State of well-being.” (Lebel 2003 p.42)

- ‘There is increasing evidence that the development of atherosclerosis is associated with inflammation, and increased levels of inflammatory markers have been documented in various settings of coronary artery disease. Patients with chronic and stable artery disease have clear evidence of a low-grade inflammation, which is independent of traditional cardiovascular risk factors. More recently, intriguing observations have shown that there is a particular bio-chemical pattern of inflammatory system activation (an increased production of inflammatory cytokines) that explains the lack of anginal symptoms in patients with myocardial ischemia.’ (Li Jian-Jun, 2003 p.252-256)

- ‘One Differential diagnosis for Hypochondriasis is undifferentiated somatoform disorder. This is characterized by the presence of one or more clinically significant, medically unexplained somatic symptom or symptoms lasting for 6 months or longer. Proposed alternative terms for this disorder include subsyndromal, forme fruste, or abridged somatization disorder. Some patients meet the criteria for somatization disorder upon follow-up evaluation.’ (Hilty & Marks 2005)

**Hidden Hunger (learning from plants)**

*Auto-Cannibalisation:*

Nutrient deficiency relates to advanced nutrient lack or deficiency of macro-nutrients.

Nutrient stress relates to early nutrient lack, before visible symptoms appear.

- ‘Hidden hunger’ in plants relates to micro-nutrients whose absorption is connected to water. In humans, the term 'hidden hunger' has undergone a semantic drift and is used to describe nutrient deficiency of macro-nutrients (zinc, iron, iodine, vitamin A...), that results in malnourishment symptoms (anemia, retarded growth and cognitive difficulties), a less obvious condition than the outright malnutrition described in the seventies that killed people more quickly. Nutrient deficiency is considered a root of 'cluster illnesses' (syndrome X, metabolic syndrome, inflammation syndrome, insulin resistance). (summary from various internet sources)

- ‘In extreme cases the imbalance can set off a chain of events resulting in the plant feeding off the nutrient reserves in its own cell walls to ensure kernel development…. The cannibalization weakens the plant, inviting disease.’ (Huber 2004)

- ‘In plants, there exists a period of nutrient stress before visible symptoms appear that is commonly referred to as “hidden hunger”. ‘Nutrient stress’ in plants, leads to alteration of gene expression and, if allowed to progress to ‘nutrient deficiency’, to fungal diseases,. Visually obvious symptoms of nutrient deficiency occur after it is too late to remedy the situation.. Nutrient stress can be ‘immunodetected’. ’ (Gray 2004) [relates to cytokins]

- ‘A rising tide of carbon dioxide could spark an epidemic of malnutrition in a world overflowing with food. […] We've known for some time that the amount of available CO₂ is what puts the brakes on photosynthesis. Raise CO₂ levels, and you increase photosynthesis, and hence plant growth can run riot.’ (Lawton 2002 p..26)

- ‘Nutrient balance is a very important aspect of nutrient availability as combinations of nutrients can synergize and/or antagonize uptake of another nutrients both minor and major (Diagram 1). The addition of a particular nutrient may have a positive or negative effect on the availability of another nutrient.’ (TJ Technologies 2004)

- ‘[...] the clinical findings of progressive dehydration and emaciation. The gastrointestinal tract was empty and gastric ulcers and melaena were frequently present. Other common findings included small livers, enlarged adrenals and pitted kidneys.( Clausen et al. 1992)
... ‘nature and origin of vacuoles in kidneys and liver unknown’ ... possibly ‘autophagy, amino-acid catabolism and gluconeogenesis’... development of a state of chronic nutritional exhaustion... age and initial weight loss significant factors
‘strongly support the hypothesis of a close relationship between the increased nutritional demand for continued milk production at a high level and the development of clinical signs of the disease.’ ... ‘... related to an unknown complex of nutritional, metabolic and environmental factors, which in turn, may influence the ability and capacity to meet the extreme demands for energy turnover...’ (op.cit. p.94)

- ‘Cachexia...involves catabolic substances generated by the tumor or by the body’s reaction to it. For example, inflammatory mediators such as cytokines. (eg interleukins and tumor necrosis factor) and a recently identified substance produced by cancer tissue known as proteolysis-inducing factor. [...] clinicians treating cachexia must measure not just weight, but also muscle mass. They [trials] also remind us how difficult it can be to get patients to consume enough supplement. [...] cancer cachexia is characterised by higher rate of protein turnover and breakdown, in part due to failure of fat utilisation to adequately ‘spare protein’ in energy metabolism.’ (Helman 2003 no171 p.3)

**Names for signs of ’in-dying’ (distress)**

A number of signs appear when reaching the extremes necessary to entrain the survival mode and correspond to ‘signs of death’ (announcing death in a grave disease) or ‘signs of dying’ (seen during the process of dying). In low-grade conditions, signs appear when establishing the alert-adapted mode, which are similar in nature although not in order of intensity (lesser and undiagnosable degree). They are signs of stress-hard work (chronic), or of strain-distress (acute), of ‘in-dying’, such as difficulty swallowing, kidney and water metabolism problems, loss of appetite, dry mouth, swollen sphenoid sinuses (in older people, children, women), swollen throat, visual blurring, need for supplementary oxygen, etc.. In my case, they signal the sense of ‘extremity’ (approaching boundary – see <Nexial topologic deployment> chapter), and the sensation of psycho-physical ‘in-dying’ that I associate with the activation necessary to reach and establish the chronic alert-adapted state, as well as with the exhausted state (‘hyper-’ and ‘hypo-’ both feel like ‘in-dying’: survival activation, or loss of integrity, physical and otherwise, under [dis]-stress. Some signs are found described in traditional literatures of the yogic type, and as part of the ‘normal’ state in Western medicine (eg alternate nostril breathing, studied by scientists in the latter 20th century, but less now, it seems), or only found in archaic literature relating to women – if it is interpreted physically – (eg rib pain on right side – see <Extracts F17\ Anatomy notes>, red spot on forehead – see <Extracts F1\ Red>). The established state only lasts for a time: it is never quite permanent, but may last for weeks or months, and can even be apparently
maintained for years if there is chronic drug or food-based activation, which is the case of most people (e.g., coffee, contraceptive pill). [The word ‘apparently’ means that stability is apparent, but there is an increase in invisible damage that is usually attributed to ageing.]

Internal signs of ‘in-dying’, of tissue instability, are variously attributed depending on the object or subject: (metabolic, physiologic, molecular, cellular, etc., or personal):

**Names for tissue instability, for ‘in-dying’**

Depending on the body parts affected, the damage and wasting inflicted by instability takes many names (gathered from literature and daily colloquial expression):

- proteinuria (protein breakdown), proteolysis, autolysis of dead cells, proteolytic response, negative nitrogen balance, catabolism, catabolism of non-fibrillar and fibrillar reservoirs, cachexia, apoptosis, auto-cannibalisation, autophagy;
- ‘hidden hunger’, nutrient deficiency or lack, nutrient stress, nutrient imbalance, cortisol damage and their related causal or resulting lack of oxygen: hypoxia, ischemia; fibrotic changes, tissue remodelling, scarring, fibrillar response;
- “surviving on my reserves”, “exhausted body resources”, “eating myself up from inside” [usually labelled ‘anxiety’], “eating my body substance to fuel (activity, brain), to cope”, “melting away”, “I am preparing a real [or big] disease”.

- ‘Chronic fatigue syndrome is controversial not only with respect to its possible causes but even concerning whether it is a disease. Even the name is controversial. In the past, the disorder has been given such names as [chronic Epstein-Barr virus syndrome and post-viral fatigue syndrome]; in Great Britain and elsewhere, it is called [myalgic encephalomyelitis]; and some researchers and patients prefer the name [chronic fatigue/immune dysfunction syndrome (CFIDS)]. Even more than the other cases I have discussed, chronic fatigue syndrome illustrates the vicissitudes of causal reasoning in medicine. [...] this multiplicity of symptoms causes great problems in diagnosing the disorder. Bell (1995, pp. 17f) draws an analogy with AIDS. The parallels in history of the recognition of AIDS as a specific disease and the recognition of CFIDS are remarkable. For years physician and health care administrators said that no illness could explain fatigue, weight loss, lymph node cancer, unusual parasitic pneumonia, and the purple spots of Kaposi’s sarcoma. Because patients with AIDS were dying, it was finally and somewhat reluctantly agreed that this constellation of unusual symptoms and events was not psychosomatic. And with the discovery of the HIV virus, a theory could be put forward that explained these findings. No similar theory has emerged to provide a unified account of why people get chronic fatigue syndrome.’ (Thagard 1999 p.127)

**Salmon (learning from animals)**

- ‘Total cortisol, free cortisol and percent free cortisol were all significantly higher in semelparous male Chinook salmon *Oncorhynchus tshawytscha* that in iteroparous and immature fish. The findings suggest that the regulation of both total and free cortisol concentrations may play key roles in mediating the post-spawning death of semelparous salmon. It is generally accepted that highly elevated cortisol levels mediate the post-spawning death of semelparous *Oncorhynchus tshawytscha* salmon by causing tissue degeneration suppressing the immune system, and impairing various homeostatic mechanisms (Dickhoff, 1989; Stein-Behrens & Sapolsky, 1992). However, hypercortisolism alone may not fully explain the mechanism of programmed death because total serum cortisol levels can be elevated in semelparous fishes at other life cycle stages without causing
significant mortality...that there is not necessarily a large evolutionary jump between semelparity and iteroparity. Indeed, the present results suggest that modifications in only a few key physiological thresholds, such as the regulation of cortisol negative feedback or cortisol binding protein levels, may be all that is necessary for iteroparity to appear in an otherwise semelparous population, and vice versa. The cause of such a shift, and its evolutionary significance are unknown, but somehow may be linked to the anadromous life cycle.' (Barry, Unwin & Quinn 2001)
‘Anadromy is generally associated with high growth rate, early age maturation and lower probability of repeat spawning. These life history traits vary within the family, ranging from fully freshwater, iteroparous, long-lived species such as lake trout (Salvelinus namaycush) to invariably semelparous, short-lived anadromous species such as pink salmon.' (Unwin, Kinnison & Quinn 1999)

• An email exchange:
Bouchon: ‘Do you know if anybody has tried modelling the salmon physio-biochemistry or ecological trends by using topology?’
Unwin: ‘I don’t know but I suspect the answer is almost certainly no. Anything topological in the salmon ecology literature would have caught my eye.’ (Martin Unwin 31 January 2004, personal communication).

Part 3: The H-clinical viewpoint

‘Not well understood’, unclear, unexplained

• ‘Optimal nutrition increases the ability to combat other influences. Our exploration of “hidden” stresses that have attracted very little attention points up how much is yet unknown about the many sources of emotional distress.’ (Cheraskin & Ringsdorf p.132)
‘Just as nutrition has generally been overlooked for many years as a factor in mental stability, so has exercise.’ (Cheraskin & Ringsdorf p.140)

• ‘Chronic fatigue syndromes (CFS) present a very difficult dilemma for both sufferers and health professionals. Particularly important is the notion of not blaming the victim….Pyrogens are substances from outside the body (exogenous) or from inside the body (endogenous) which generate fever. These are largely gram negative bacteria (endotoxins) and can result in mediator cytokine release … monocytes and macrophages, fibroblasts and glial cells….Fever can make it easier for the body to deal with microorganisms by impairing microorganism growth. There is, however, an energy loss to the host as a 1°C temperature increase, increases oxygen requirement by 13%, as well as increasing catabolism and caloric and fluid requirements.’ (Graham 2001)

• ‘Chronic fatigue syndrome (CFS) is an illness…often accompanied by numerous symptoms involving various body systems. The etiology of CFS remains unclear, however, a number of recent studies have shown oxidative stress may be involved in its pathogenesis […] Food intolerance may be involved in CFS symptom presentation and …[oxidation via cytokine induction].’ (Logan & Wong 2001)

Syndrome Names

• ‘The condition I have is called RNase Enzyme Deficiency Disease (I love the acronym: REDD). It is thought to be either fully or partially responsible for a host of illnesses, including multiple sclerosis, myalgic encephalomyelitis, ALS, inflammatory rheumatoid arthritis, Gulf War Syndrome, fibromyalgia, to name a few. […] Although the condition is often still called CFIDS… […] RNase is an enzyme produced by the human body when it is attacked by viruses or bacteria. As the name implies, RNase denatures messenger RNA wherever it finds its. as it comes in contact with the invading virus or bacteria, it destroys its RNA and thus kills the invader. This is a very quick-acting defense mechanism,
unlike the slower production of T cells, B cells, etc. [...] In REDD, the mechanism that produces RNase is damaged, [...] the body begins producing a shortened but highly active form of RNase [that] has no turn-off mechanism... which then proceeds to attack the RNA in literally every cell in the body. [...] It is considered a definitive test and a definite clinical entity. [...] If brain tissue, the result is myalgic encephalomyelitis, functionally indistinguishable from MS.... [...] The third phase begins when the cumulative damage to various tissue systems starts to take a toll. [...] The basic symptom is "hypoxia," or lack of oxygen in the cells (due to damaged mitochondria), so you feel like you are suffocating most of the time, and you're often bedridden around the clock (literally). Also fortunately for me, this means mega meditation. it also means depression, sadness, and pain, not so much for the pain in this body, but the pain of what this body can't do. [...] (Interestingly, REDD damages the aerobic system, and not so much the anaerobic system—which is why, although I didn't know it at the time, I stopped jogging and starting weight lifting.) [...] Fortunately, I had cultivated a lifestyle that never required a body. [...] Much of the time I am fortunate, and there is radiant sahaj, with a painful body spontaneously arising in an ocean of blissful emptiness. At other times, there is just the painful body. In all cases, my I is free and radiant, but my me is fucked, [...] Much of this information... has only been discovered in the last 5 years or so, which is why I previously didn't talk about it per se— I didn't know "it" was an it. [...] As for what specifically triggers the damaged RNase, nobody knows, although environmental toxins are a leading factor.' (Wilber 2002)

• ‘I have included all the many names that I have found for the syndrome first named neurasthenia in April 1869, up to the most recent proposal of Chronic Neuroendocrineimmune Dysfunction Syndrome. The dates refer to the year of the earliest (and often only one) published paper I could find that defines the disease.’ Among these over one hundred names are: Fibrositis, Heat, Cold and Effort Sensitiveness, Specific Adaptation Syndrome, 20th century syndrome, many names for neurasthenias, myalgias, fatigues, dysautonomias, syndromes related to encephalomyelitis, allergy, battle, related to hypochondriasis, neuroses and mental illness, Idiopathic Hypogeusia., and Chronic Habitual Hyperventilation Syndrome.' (Donnay 2002)

• ‘When one hears about another person’s physical pain, the events happening within the interior of that person’s body may seem to have the remote character of some deep subterranean fact, belonging to an invisible geography... Laden with consequence yet evaporating before the mind because not available to sensory confirmation, unseeable classes of objects such as... the pains occurring in other people’s bodies flicker before the mind, then disappear.’ (Scarry 1985 p.2-3)

‘This book is about the way other persons become visible to us, or cease to be visible to us. It is about the way we make ourselves... available to one another through verbal and material artifacts,...’ (op. cit. p.22-23)

**Names that denote many perspectives of understanding**

Following, is a list of words collected from the literature, that are qualificatives given to various clusters of symptoms of the syndromes of instability:

• *unexplained*: ‘unexplained by physical causes’, ‘causes not well understood’, ‘etiology unclear’, ‘cause unknown’, ‘unexplained physical symptoms’, somatoform disorder not otherwise specified (NOS)

• *non-localised or generalised*: ‘causing vague and diffuse symptoms’, ‘non-specific symptoms’, ‘undifferentiated somatoform disorder’, ‘syndrome X’, ‘systemic symptoms’, ‘clustered symptoms’ (classified, for example as neurological, endocrine, immune symptoms, or anatomically – eg fibromyagia),

• *N2d-N3p names*: Specific Adaptation Syndrome (Randolph 1956) (disorder in specific adaptive reactions), side-effects of drugs, surgery, and breast implants, General Adaptation
Syndrome (Selye ©1956, revised ed. 1976) (a general ‘damage syndrome’ or ‘strain’), often interpreted internally as ‘caused by’ stress and externally, behaviourally as ‘maladaptation to’ stress.

- **unfounded ‘sickness behaviour’**: ‘illness without signs’, ‘hypochondriac’, ‘hysteric’, ‘it’s all in your mind’, ‘it’s all in your head’, ‘paying too much attention to symptoms’
- **‘normal’ damage**: ‘It’s ….’ ageing, menopause, female weakness, side effects of menstruation, ‘children grow out of it’
- **instability**: [in-out] sensitivity, allergy and other immune reactions, maladaptation
- **cyclic, repetitive or bimodal**: cyclothymia, repetitive injury syndrome, depression and anxiety, fatigue and stress, melancholia and hysteria, bipolar disorder (mania and depression),
- **Hidden**: subclinical nutritional deficiency, silent illness, silent hypoxia or ischemia, ‘hidden hunger,’
- **failure of vertical control**: attributed to inflamed brain or disturbed mind, psycho-social maladaptation or stress, hypothyroidism, dysthymia, neurally mediated hypotension, personality disorders
- **names inspired by ‘cryptic core culture’**: Heat, Cold and Effort Sensitiveness, hypochondriasis, Wilson cold syndrome,
- **operational names**: metabolic syndrome, functional somatic syndromes (Barsky & Borus 1999), functional syndromes, stress syndromes, burnout syndrome, hypoglycemia, diabetes type 1, insulin resistance, conversion reaction, pain disorder, cluster diseases (occurring in location clusters, population clusters, or in a family ‘by mimicry’), irritable bowel syndrome, Kundalini syndrome (Sanella 1979 and 1987, Grof & Grof - obtained 1997)
- **connective names**: conversion disorder, somatoform disorders (Wiesmüller et al. 2003), somatisation, psycho-somatic, body dysmorphic disorder, personality disorder

**Spreading names**: candidiasis (candida syndrome)

### Names and synonyms

- ‘As with all psychiatric disorders, the somatoform disorders demand creative, intricate biopsychosocial treatment’ [...] Hypochondriasis and the other somatoform disorders are among the most difficult and most complex psychiatric disorders to treat in the medical setting. Because of many new developments in this field, diagnostic criteria have been revised to facilitate clinical care and research, and more empirical research is being performed. [...] Some degree of preoccupation with disease apparently is common; 10-20% of people who are healthy and 45% of people without a major psychiatric disorder have intermittent, unfounded worries about illness (Kellner, *JAMA*, 1987). [...] Hypochondriasis is usually episodic [...] Hypochondriasis is classified as one of the somatoform disorders, a class that was formulated to accommodate the differential diagnosis of disorders characterized primarily by physical symptoms for which no demonstrable organic cause can be found. […]
Synonyms and related keywords:

somatoform disorders, neurasthenia, chronic fatigue syndrome, CFS, hypochondriacs, hypochondriacal behavior, hypochondriacal episodes, hypochondriacal disorder, neurochemical deficits, depressive disorders, anxiety disorders, obsessive-compulsive disorder, OCD, obsessive-compulsive disorder, anorexia nervosa, body dysmorphic disorder, BDD, Tourette disorder, Tourette syndrome, Tourette's syndrome, impulsivity disorders, trichotillomania, selective serotonin reuptake inhibitors, SSRIs, malingering. (Hilty & Marks 2005)

• 'This paper will discuss the concepts of neurasthenia and somatisation and how these other psychiatric terms have infiltrated the psychiatric literature on CFS........"a disease of the nervous system, without organic lesion, which may attack any or all parts of the system, and characterised by enfeeblement of the nervous force, which may have all degrees of severity, from slight loosening of these forces down to profound and general prostration.' (Phillips 2003)

• ‘Conversion disorder is included as a somatoform disorder under the general classification of hysterias in the (DSM-IV). Although defined as a condition that presents as an alteration or loss of a physical function suggestive of a physical disorder, conversion disorder is more precisely understood as the expression of an underlying psychological conflict or need. The presence of the psychological factor usually is not apparent at onset but becomes evident in the history when a cause-effect relationship between an environmental event or stressor and the onset of the symptom is discovered. [...] The symptoms are... the result of unintentional motives. [not driven by brain-mind-self] This condition is not considered under voluntary control and, after appropriate medical evaluation, cannot be explained by any physical disorder or known pathological mechanism. Clinical descriptions of conversion disorder date to almost 4000 years ago; the Egyptians attributed symptoms to a "wandering uterus." In the 19th century, Paul Briquet described the disorder as a dysfunction of the CNS. Freud first used the term conversion to refer to the substitution of a somatic symptom for a repressed idea. [...] Pathophysiology: .... Reactions usually are characterized by symptoms that suggest lesions in the motor or sensory pathways of the voluntary nervous system. [...] Symptoms more often affect the left side of the body. [...] With newer diagnostic testing, instances of false-positive diagnoses of conversion disorder in which a neurological disease is later identified are now rare.' (Powsner & Dufel 2005)

Synonyms and related keywords:

somatization, body dysmorphic disorder, conversion disorder, hypochondriasis, somatization disorder, somatoform disorder NOS, somatoform disorder not otherwise specified, unexplained physical symptoms. [...] 'Other Problems to be Considered: Somatoform disorders must be differentiated from medical illnesses as well as from other psychiatric conditions; consider medical conditions that cause vague and diffuse symptoms. Also, consider somatization as part of a mood or anxiety disorder. [...] Somatoform disorders represent a psychiatric condition because the physical symptoms present in the disorder cannot be fully explained by a medical disorder, substance use, or another mental disorder. Often, the medical symptoms patients experience may be from both medical and a psychiatric illnesses. Anxiety disorders and mood disorders commonly produce physical symptoms. [...] Specific somatoform disorders include (1) somatization disorder, (2) conversion disorder, (3) pain disorder, (4) hypochondriasis, and (5) body dysmorphic disorder. Somatization disorder is a relatively rare disorder that is associated with high medical resource utilization. More common somatization syndromes may not reach the diagnostic threshold for somatization disorder but may be clinically and functionally significant. [...] Autonomic arousal may be high in some patients with somatization.' (Yates 2005)

• 'The Kundalini process can also simulate a variety of medical disorders. It can be diagnosed as Jacksonian epilepsy, a lower back problem, incipient multiple sclerosis, a heart attack, or a pelvic inflammatory syndrome.' (Grof & Grof, obtained 1997 – see also Sanella 1979 & 1987)
Explanations: old and new (many modern theories)

A number of syndromes are ‘not explained physically’, and are associated with women and children more than men. Their old names (eg hypochondriasis, hysteria, neurasthenia), have become more sophisticated names such as somatoform disorder, somatization, conversion reaction, body dysmorphic disorder, (adding, for children:) undifferentiated somatoform disorder, pain disorder, and other conditions that ‘cause vague and diffuse symptoms’, ‘somatoform disorder not otherwise specified NOS’. The lack of visible ‘physical cause’ has given rise to various perspective-based explanations.

• A cognitive model of hypochondriasis suggests that patients misinterpret bodily symptoms by augmenting and amplifying their somatic sensations. Patients also appear to have lower-than-usual thresholds for, and tolerance of, physical discomfort. For example, what most people normally perceive as abdominal pressure, patients with hypochondriasis experience as abdominal pain. When they do sustain an injury (eg, ankle sprain), it is experienced with significant anxiety and is taken as confirmation of their worry about being ill. This may be due to a tendency among patients with hypochondriasis to exaggerate their assessment of vulnerability to disease and their appraisal of the risk of serious illness. […] The social learning theory frames hypochondriasis as a request for admission to the sick role made by a person facing seemingly insurmountable and insolvable problems. This role may allow them to avoid noxious obligations, postpone unwelcome challenges, and be relieved from duties and obligations.[…] The psychodynamic theory implies that aggressive and hostile wishes toward others are transferred via repression and displacement into physical complaints. The hypochondriacal symptoms serve to “undo” guilt felt about the anger and serve as a punishment for being “bad.” […] Neurochemical deficits with hypochondriasis and some other somatoform disorders (eg, BDD) appear similar to those of depressive and anxiety disorders. For example, the aforementioned obsessive-compulsive spectrum described by Hollander et al in 1992 includes OCD, BDD, anorexia nervosa, Tourette syndrome, and impulse control disorders (eg, trichotillomania, pathological gambling). Although only preliminary data have been reported on these neurochemical deficits, such deficits may explain why symptoms overlap, why the disorders are commonly comorbid, and why treatments may parallel one another (eg, SSRIs).’(Hilty & Marks 2005)

• ‘Conversion disorder: With primary gain, the symptoms allow the patient to express the conflict that has been suppressed unconsciously. […] With secondary gain, symptoms allow the patient to avoid unpleasant situations or garner support from friends, family, and the medical system that would otherwise be unobtainable. […] According to sociocultural theories, the direct expression of emotions is impermissible and somatization takes its place. […]In behavioral models, conversion symptoms are viewed as a learned maladaptive behavior that is reinforced by the environment. The idea that conversion disorder does not have an organic basis has become entrenched. However, some evidence supports the opposite notion.’ (Landau & Carroll 2005)

• ‘Environment-related syndromes like multiple chemical sensitivity, idiopathic environmental intolerance, sick building syndrome, chronic fatigue syndrome, candida syndrome and burnout syndrome, […] show clinical similarities to classified somatoform disorders. […] Non-specific subjective symptoms spanning various organ systems are often attributed to “environmental illness”. […] These syndromes are typically described as distinct from each other because of an emphasis on one symptom more than others. […] The many different terms – atypical poliomyelitis, neurasthenia, myalgic neuromyasthenia, epidemic myalgic encephalomyelitis, postviral fatigue syndrome, chronic brucellosis, Icelandic disease, royal free disease, Lake Tahoe disease, yuppie flu, etc. – are evidence of… the hypotheses regarding its etiology… The syndrome is not an illness in the classical sense with a single cause.’ (Wiesmüller et al. 2003)

• ‘It's also very clear that there doesn't exist any clear border's between various diagnosis, nor to normality.’ (The Neanderthal theory of Autism, Asperger & ADHD, 2005)
• ‘Recent studies are showing that meditation can result in stable brain patterns and changes over both short and long-term intervals that have not been seen before in human beings and that suggest the potential for the systematic driving of positive neuroplastic changes via such intentional practices cultivated over time. These investigations may offer opportunities for understanding the basic unifying mechanisms of the brain, mind and body that underlie awareness and our capacity for effective adaptation to stressful and uncertain conditions.’ (Mind and Life conference 2005)

**Destabilisation & restabilisation**

• ‘All of this led me to question and ponder as to why some people failed to respond to treatment or were returning intermittently with recurrent, or seemingly unrelated, problems.’ (Jefferis 2001 p.11)

• ‘As professionals in the field of chemical dependency, we realize addiction has little to do with willpower or moral character…research which is now clarifying susceptibility factors leading to dependencies. We have known that abnormal neurochemistries occur as a result of genetic factors [and] also realize that environmental stressors …result in neurochemical depletions. These altered chemical states actually become the antecedents or factors necessary for a person to receive positive reinforcement through the use of chemicals. For every thought, feeling, and behaviour there exists a neurochemical equivalent in the brain. In other words, for people to become dependant on an externally sourced chemical to produce desired there must first exist, or be developed, a deficiency of a chemical component in the brain. (...) The only factor that was present in all reported relapses was that the client was NOT using amino acid supplements as suggested (...) supplementation with neuronutrients for precursor loading (...) encouraging brain function. (...) Stress is often predecessor to chemical abuse (...) As a sense of survival, or threat thereto, is stabilized it allows the patient to relax somewhat and begin to feel safe. When neurotransmitter availability is increased, the person can begin to ‘feel’ as the limbic system is spared the sedation or toxic effect of drugs including alcohol. (...) When sufficient dopamine and encephalin are available the patient begins to sense the feelings we call love. […] the patient is …able to balance feelings with thinking and produce assertive behaviour. Building towards effective self-actualization cannot use a short-cut approach. If we demand behavioural change….without allowing rebalancing the brain chemistry we simply set them up for failure. In persons with strong family histories of dependencies—significantly altered their brain chemistry via unmanaged stress it appears necessary to immediately impact the (...) The use if appropriate amino acid/vitamin/mineral combinations which have been carefully developed and tested is the most effective and least threatening method to enhance brain function (…) quotation by Herbert Spencer: […] There is a principle,…which is proof against all arguments (...) that principle is contempt prior to investigation.’ (Neher, Terry, 1993)

• ‘The second broad cluster, depletion fatigue, assembled afflictions marked by slow, chronic wasting, where the sufferer grew emaciated and debilitated, accumulating a host of secondary symptoms from pallor, indigestion and shortness of breath to hair loss, hot sensations on palms of hands and soles of feet, and palpitations, while also experiencing destabilized psyche marked by disturbed dreams or insomnia, fits of melancholy or anger.’ (Furth 1999 p.79)

• ‘The whole game [of nosological classification] consists in defining the rules of constancy and variability.’ (Despeux & Obringer 1997 p.77) [‘Tout le jeu consiste a definir des regles de constance et de variabilite.’]

• ‘Stability…means difficulty to initiate movement as well as difficulty to be moved.[…] Stability (when one is protected) increases the feeling of safety. Instability means risk but easy mobility. Both are biologically important. Becoming addicted to one of them makes one unsafe for lack of choice. (Feldenkrais 1981 p.39)

• ‘Akathisia manifesting as violence […] and suicide’ (Sachdev 1995 p.128-129) and with ‘subjective manifestations […] and objective feature.’ (op. cit. p.130) ‘Neuroleptic-induced dysphoria […] is marked by] slowing of thinking and movement…paralysis of volition…[without] sleepiness or sedation, severe anxiety’ (op. cit. p.47) ‘In postencephalic parkinsonism… symptoms [are categorized into] paraesthesiae (burning, coldness, tingling and numbness)... and pain (poorly localized painful
sensations without thermal or anaesthetic characteristics and not associated with increased muscle contraction or affected by movements or pressure. The pathogenesis of these symptoms is not understood. (op. cit. p.51) ‘The effect of activating manoeuvres […] The performance of voluntary movements, especially those involving concentrated effort, affects the manifestations of involuntary movements. Movements like tongue protrusion, finger tapping, or walking (1) may bring out movements not otherwise apparent. […] It is our observation that the movements of AA [acute akathisia] are usually diminished, and may disappear completely, during such activities. […] The adjective activating has been retained to describe these manoeuvres, in the case of akathisia they tend to produce the opposite effect, ie, diminishing or suppressing the movements… during the motor task.’ (op. cit. p.133) ‘(1) compare to some spiritual practices in the Pacific region and India’

- ‘The notion of Brain-derived neutrophic factor (BDNF) overactivity in mania suggests that factors associated with increased BDNF activity may proffer the etiological fundamentals for bipolar affective disorder. […] (3) Increase in mossy fibers were noted for bipolar affective disorder brain and BDNF is related to the induction of aberrant mossy fiber sprouting.’ (Shih-Jen, 2004 p.19)

- ‘The clonal selection paradigm describes an immune system whose homeostatic functions are at variance with integrated holistic homeostasis. Given the shortcomings inherent in this paradigm, the immune system is understood differently when the organism (the person) is described as autopoietic. In this view, homeostasis is the capacity to maintain organisational stability. The immune system then becomes a self-referential network of recognition interactions (the central immune system) and a peripheral immune system that is concerned with non-homeostatic, clonally driven defence. The characteristics of the immune network include connectivity, specificity, self-recognition, autoimmunity and tolerance; immunological identity and memory become the emergent characteristics of the network. The immune target of osteopathy is the central immune system, an organisationally closed network, so that resultant changes in immune status are more properly described as compensation by the immune network to perturbation by osteopathic treatment.’ (Degabriele 2002)

- ‘HeartTracker (also called an RSA Trainer) is a powerful performance enhancement tool. At reasonable price it helps you achieve optimal performance, relaxation, and autonomic stability (homeostasis)… HeartTracker includes a respiration pacer as a therapeutic aide to assist an individual in developing and maintaining breathing patterns leading to autonomic stability or homeostasis.’ (Biocom Heart Tracker 2006)

- ‘Unfortunately as you age, your brain cell membranes wear out, not unlike the tires of your car…. Phosphatidylserine (PS): The outside coverings of your brain cells are called brain-cell membranes. … An important nutrient called phosphatidylserine has been scientifically shown to preserve the stability and function of these membranes.’

- ‘Recent studies are showing that meditation can result in stable brain patterns and changes over both short and long term intervals that… suggest the potential for the systematic driving of positive neuroplastic changes via such intentional practices cultivated over time. These investigations may offer opportunities for understanding the basic unifying mechanisms of the brain, mind and body that underlie awareness and our capacity for effective adaptation to stressful and uncertain conditions.’ (Mind and Life conference 2005)

- ‘Strong Prana is an asset for attaining success in spontaneous practice. Hence willful practice is very important for beginners. Pranopasana and Pranavidya are Sanskrit terms used for the spontaneous practice of Yoga, in which the vital force of Prana plays the key role. Before beginning such spontaneous practice, one should cultivate the intensifying of the vital force… The next step is the release of the vital force… The third step is the raising of the vital force… along the path of the central subtle channel (Sushumna). The fourth step is the stabilization or conquering of the vital force in the frontal region. The fifth and final step is that of annihilation or dissolution of the Prana. Strong vital force is a must for an aspirant who intends to take up the spontaneous practice of yoga. Weak vital force cannot take one very far on the path. (Muni 1993 p.170-171)

- ‘When a sadhaka sits in the lotus posture and masters the prana through this position, he acquires the capacity to stabilize himself in the thought-free state.’ (Muktananda 2000 p.118-9)
• When the *nadas* are purified, the gastric fire begins to blaze, and when the *prana* is purified, the mind stops wandering and becomes stable.’ (Muktananda 2000 p.119)

• ‘I was empowered in various tantric practices and it was good to have my imaginative life enriched with such a wealth of symbolism. I studied the graduated path to enlightenment and I had some realisations. But experiencing the emptiness of phenomena did not stabilise my life and I still succumbed to simple temptations.’ (Brazier, 2006)
Text extracts F5 – Gauging thinkers

(See also <Extract F15\ Virtual reality>, and <PPT2 Models collected\ slides 18, 19>)

The following extracts aim to demonstrate the efforts of ‘gauging’ thinkers at formulating in scientific terms or in words something like nexial-topology, and the difficulty to explain the ‘undifferentiated’ domain.

‘If this were true, we would have to expect conflicts between our theories as soon as their number grows beyond a certain point and as soon as they cover a sufficiently large number of groups of phenomena. In contrast to the article of faith of the theoretical physicist mentioned before, this is the nightmare of the theorist.’ (Wigner 1960)

Of experience

• ‘The nervous system and the endocrine (or hormonal) system play particularly important parts in maintaining resistance during stress*. They help to keep the structure and function of the body steady, despite exposure to stress-producing or stressor* agents, such as nervous tension, wounds, infections, poison. [This is the] staying power of the body.’ (Selye 1976 pp.2, 12)

• ‘Paradigms determine large areas of experience at the same time.’ (Kuhn 1996 p.129) ‘[The] reactions, expectations, and beliefs [of the post-revolution scientist] – indeed, much of his perceived world – change accordingly. […] – [according to a] vision through another paradigm.’ (Kuhn 1996 p.128) (See also <Extract F15\ Virtual reality>.)

‘But it is hard to make nature fit a paradigm. […] Chemists could not… simply accept Dalton’s theory on the evidence… they still had to beat nature into line… When it was done, even the percentage composition of well-known compounds was different. The data themselves had changed. That is the last of the senses in which we may want to say that after a revolution scientists work in a different world.’ (Kuhn 1996 pp.135)

• Time Indexing technique (can be adapted for indexing scientific and human ‘spaces’):

‘Individualizing (indexes) [to highlight context] and temporal devices (dates), etc., should be used conjointly. Thus, obviously, chair11600 is not the ‘same’ as chair11930, nor is Smith1Monday the ‘same’ as Smith1Tuesday…. Through training in the consciousness of abstracting… we become conscious of … generalizations.’ (Korzybski 1933 p.ii)

‘Action is one of the terms of pre-einsteinian physics which has survived unmodified, the only other one being entropy.’ (Korzybski 1933 p.680)

• ‘The irritability of the tissue, as shown in its capacity for response, electrical or mechanical, was found to depend on its physiological activity…When made permanently irresponsible the tissue was said to have been killed…from a confusion of ‘dead’ things with inanimate matter, it has been tacitly assumed that inorganic substances, like dead animal tissues, must necessarily be irresponsible […] this ‘unexplained’ conception of irritability became the starting point… of vitalism …and introduced as an explanatory principle an all-controlling unknown and inscrutable “force hypermecanique … Thus it was easy to “explain” the most complex vital… phenomena [by] the super-physical character of response.’ (Bose 1922 p.182)
In animal tissues response becomes feeble at low temperatures. As an optimum temperature it reaches its greatest amplitude, and again, beyond a maximum temperature it is very much reduced.' (Bose 1922 p.188)

In certain types of tissue the stimulated is relatively positive to the less disturbed, while in others it is the reverse… this is accomplished either (1) by ‘injuring’ or (2) by introducing a perfect block.’ (Bose 1922 p. 183)

‘Action is one of the terms of pre-einsteinian physics which has survived unmodified, the only other one being entropy.’ (Korzybski 1933 p.680)

At present [1933] it appears that two other very general mathematical disciplines will be used increasingly in the future. One of them is the theory of groups; the other is analysis situs. In the latter we study only these characteristics of figures that are unaffected (invariant) by continuous deformation produced without tearing. Two structural points are relevant for us in this connection: namely that the analysis situs is fundamentally a differential and also an ordinal discipline, based on asymmetrical relations. In the next chapter, as an illustration of the actional, behaviouristic, functional operational, differential, contact method a short account will be given of the way Einstein structurally treated “simultaneity”.' (Korzybski 1933 p.658)

Of images

‘Diagrammatizing and even following with one’s hand, the visualized order of occurrences, helps enormously. […] We shall also be greatly helped in our power of visualization when we become acquainted with the structure of the Minkowski four-dimensional worlds.’ (Korzybski 1933 p.664)

‘If icons are central to our thought, not peripheral frills, then the issue of alternative representation becomes fundamental to the history of changing ideas in science (and even to the quite legitimate notion of scientific progress!) How shall we draw the geometry of contingency?’ (Gould 1995 p.67)

‘Why do scientists grasp the importance of visual imagery, while most humanists accept the hegemony of the word? Scholarly publication in the humanities generally degrades imagery and in many ways. Many thick tomes have no pictures at all… Images when present, are often only “illustrative”, are often collected in separate sections, divorced from textual reference and therefore subsidiary.’ (op.cit. p.40)

‘Visual imagery is central to our lives. […] Much can be learned from the study of imagery (including its neglect). […] Iconography is usually seen as superfluous [and] motives that attend the choice and form of images are less conscious than those of scientists [biases] – and therefore underlying personal and social biases become exposed in the pictures that we use.’ (op.cit. p.41)

‘I am particularly intrigued by the subject of “canonical icons”, i.e., the standard imagery attached to key concepts of our social and intellectual lives. Nothing is more unconscious, and therefore more influential though its subliminal effect, than a standard and widely used picture for a subject that could, in theory, be rendered visually in a hundred different ways, some with strikingly different philosophical implications.’ (op.cit. p.41)

‘The Ladder or Linear March of Evolution: …The most serious and pervasive of all misconceptions about evolution equates the concept with some notion of progress, usually inherent and predictable, and leading to a human pinnacle. Yet neither evolutionary theory nor life’s actual fossil record support such an idea. Darwinian natural selection only produces adaptation to changing local environments, not any global theme of progress. […] We can interpret local adaptation as “improvement” in a particular circumstance, … but a historical chain of sequential local adaptations does not accumulate to a story of continuous progress…’ (op. cit. pp.42-43)

‘The problem of diversity is so topologically distinct from the problem of transformation [anatomical change] that a different iconography must be employed for basic illustration. […] The cone… resides largely in textbooks and professional publications for scientists [rather than for the general public] – but it constrains thought no less.’ (Gould 1995 p.61)

The ‘idealizing primal establishment of the meaning-structure “geometry” ’ (Husserl 1939 p.180) appears as the corner stone of the ‘problem-horizon of reason’ (op.cit. p.180), but ‘what we learn [in
text books] is how to deal with ready-made concepts... substituted for the actual production of the primal idealities’ (op.cit. p.169). This production is the ‘animal rationale in every man’ (op.cit. p.180) and requires ‘the capacity for reactivating the primal beginnings... [which] has not been handed down with it [the learned geometry].’ (Husserl 1939 p.170)

‘The gestures we use as we speak are integrally connected to both our speech and our thought processes. [In] this new scientific direction... [the] method is the comparison of matched gestures, which overlap in meaning with the accompanying speech, and mismatched gestures, which either complement or conflict with the linguistic meaning... The researchers observed children explaining their answers to piagetian conservation tasks (conservation of mass, number or volume when physical appearance is altered). Some children produce mis-matched gestures,........say that “a tall thin container has a large volume” because it’s taller, but simultaneously make a gesture indicating width. These children, it turns out, are the ones who are most ready to learn about conservation, either by instruction or experimentation. [...] The contrast between matches and mis-matches turns out to be a remarkable tool. [...] Mis-matched gestures... bring in another cognitive model besides that presented in speech. However, Goldin-Meadow argues that mismatches are advantageous [...] Mismatched gestures not only allow speakers to express models that are inaccessible to speech but also give listeners access to those models. [...] Apparently conflicting mismatches often reflect different aspects of a potentially unified larger cognitive framework. [...] Another strand of Goldin-Meadow’s work, [the] purely gestural communication... of deaf children with hearing parents [shows that their] gestural system [...] is “language-like”, informational, ...conventionalised, segmented, and even “grammaticized”. [...] She and her co-workers are currently researching such applied issues as the need to interpret children’s gestures alongside speech in legal and psychiatric questioning. [...] Her book] may help to reshape the basic premises and methods of psychologists and other social scientists.’ (Sweetser 2004 pp.606-607).

Of localisation & extension

**Locally variable rather than localised**

- ‘The ether of the general theory of relativity therefore differs from that of classical mechanics or the special theory of relativity respectively, in so far as it is not “absolute”, but is determined in its locally variable properties by ponderable matter.’ (Einstein in Saunders & Brown 1991 p.18)

**No Boundary – no ‘system’ – non-objects**

- ‘[...] we may also see how easily men may fall into grave errors...such as believing that extension must be localized... that it occupies more space at one time than at another.’ (Spinoza 1901 p.30)
  ‘The exclusion of all idea of cause – that is, the thing must not need explanation by anything outside of itself.’ (op.cit. p.33)

- ‘Ever since the discovery of the kinship between the various Indo-European languages, scholars have puzzled over the original homeland of the Indo-European speakers. The similarities in their various languages pointed to a common ancestral language, and divergences were explained as the result of migrations from a shared place of origin.’ (Feuerstein, Kak & Frawley 1995 p.52)
  ‘By comparing phonetic and grammatical changes in diverse Indo-European languages, scholars have invented a series of hypothetical steps, suggesting a certain sequence among the languages involved. Moreover, reconstructing the lost Proto-Indo-European mother language, they also hoped to learn something from the reconstructed vocabulary. What kind of social, cultural, and natural environment did it suggest? The problem with such linguistic reconstructions is that they are purely hypothetical. The meaning of reconstructed words in Proto-Indo-European is completely unprovable.’ (op. cit. p.56)
  ‘The reconstructed Proto-Indo-European vocabulary is... controversial when it comes to descriptions of the natural environment, such as plants and animals. J. P. Mallory critically surveyed the evidence and
concluded the following: “If we try to draw the environmental evidence together... we arrive at a landscape...‘ (op. cit. p.56)

‘The British archaeologist Stuart Piggott summarized the vagaries of linguistic comparisons very poignantly thus: ‘The method has its dangers. [...the great Sanskrit scholar A. B. Keith once remarked that by taking the linguistic evidence too literally one could conclude that the original Indo-European speakers knew butter, but not milk; snow and feet, but not rain and hands!’ ‘(op. cit. p.57)

- ‘If the laws of positioning could not be influenced by physical factors..., and were given once and for all, such an ether would have to be described as absolute (i.e. independent of the influence of any other object).’ (Einstein in Saunders 1991 p.14)

- ‘Under such natural structural conditions it is a fundamental fallacy to ascribe to “lengths” or “shapes” or “times” any “absolute” significance. ... “matter”, “space”, and “time” ... appear as relations between events and some specified observer, and forms of representations. [...] We would evaluate the[se] terms as forms of representation, and non-objects.’ (Korzybski 1933 p.664)

- ‘The universe would be completely self-contained and not affected by anything outside itself. It would neither be created nor destroyed. It would just BE.’ (Hawking 1998 p.141).

- ‘When you are “nowhere” physically, you are “everywhere” spiritually.’ (Wolters p.142)

- ‘For even if a man is deeply versed in the understanding and knowledge of all spiritual things ever created, he can never by such understanding come to know an uncreated spiritual thing.’ (Wolters p.145)

- ‘Do not think that because I call it ... a “cloud” it is the sort of cloud you see in the sky, [...] I mean “a lack of knowing”... for you cannot see it with your inward eye. For this reason it is called “a cloud”, not of the sky, of course, but “of unknowing”.’ (Wolters p.66)

- ‘Gravitational energy is non-local, which is to say that one cannot determine what the measure of this energy is by merely examining the curvature of space-time in limited regions. The energy – and there fore the mass – of a gravitational field refuses to be pinned down in any clear location. [...]These are hints that our treasured intuitive views as to the nature of physical reality are less close to the truth than one would have thought... such conclusions must already be drawn on the basis of classical theory.’ (Penrose in Saunders & Brown 1991 pp.24-25)

‘Obscure’ wording of the ‘space’: an ‘ideal world’, a ‘mysterious place’, a globe-‘space’

A less differentiated view, induced or guided, of this ‘space’ is better expressed with simple animated images than with language. Translating it into languages (eg words or numbers) produces long and intricate works difficult to follow in their details, and which are often forced to coin new words. Such works are considered obscure, too abstract, ‘difficult’, intuitive, speculative, or dogmatic by the dominant L-R perspectives, and are understood as inductive (inductive inference rather than ‘induced’). ‘Advanced’ perspectives re-create them by using abductive methods, flat images to reconstruct animation, and a cryptic or abstruse vocabulary that lengthens words to reinterpret – in highly specialised ways – the non-differentiate as generic or generalised. I refrained for three years from doing this, and instead found the imaging of topology more adequate, but the imposed requirements of detailed and general explanation (remote from any actual particular situation) and of scholastic production in words rather than live imaging, eventually forced a progressive
redeployment of the ‘advanced’ sort, into this complex and now ‘difficult’ dissertation. The following quotations are attempts at expressing in words this global ‘space’ (‘non-local’, in natural science vocabulary) (see also <Extract F18\ Rules of localisation-extension in the literature>):

• ‘What does health look like?’ (Williamson & Pearse 1980 p.23)
  ‘The bionomist is perpetually faced with the insistence of the living entity to build up, i.e. to “grow” in specific diversification of structure and capability of facultisation…..’ (op.cit. p. 271)
  ‘Eutropy, positive, actional… tendency to Wholeness arises with the behaviour of motility in a field of choice, the tendency to Allness arises with the behaviour of motion in a field of chance. […] Neither then may eutropy be regarded as “negative” entropy… [but as] the emergence of originality, the origination of new “origens”. […] There is no inherent antipathy between the two conventions, Space-Time and Memory-Will’ (op.cit. p.273)
  ‘Motility in Will… is not effective: nor is it “causal”, inducing a chain of sequential events. On the contrary, motility spontaneously inducing fields of unity – so bringing together opposite diversities in Memory – is orientational of the content of Memory.’ (op.cit. p.190)
• ‘Husserl actually draws upon two different versions of the epoché in Ideas (as elsewhere), which versions he does not separate as clearly as one might have hoped: the “universal epoché” on the one hand, and a much weaker “local epoché” (as one could label it) on the other. The former version requires the phenomenologist to put all his existence assumptions regarding the external world into brackets at once, whereas the weaker version merely requires him to bracket particular existence assumptions, […] Only the universal epoché seems to conflict with our externalist reading: if no extra-mental existence assumptions whatsoever are admitted, then phenomenologically there cannot be object-dependent indexical contents, as externalism would have it. By contrast, there may be some such contents, even many of them, without indexical content generally having to be dependent on a particular extra-mental object. Which leaves enough room for the method of local epoché to apply to any given particular case.’ […]
  ‘Now the only function of the universal epoché is to establish the Residuum Thesis, which holds that the realm of (empirical) consciousness is “absolute” in that it does not depend on the existence of an external, spatio-temporal world (cf. Ideas, sec. 51, 55).’ (Beyer 2004).
• ‘Thus we can see that it is before all things necessary for us to deduce all our ideas from physical things – that is from real entities, proceeding as far as may be according to the series of causes, never passing to universals and distractions, […] It would be impossible for human infirmity to follow up the series of particular mutable things, both on account of their multitude, surpassing all calculation, and on account of the infinitely diverse surrounding one and the same thing, any one of which may be the cause for its existence or non-existence […] the essences of particular mutable things are not to be gathered from their series or order of existence, which would furnish us with beyond their extrinsic denominations, their relations or, at most, their circumstances, all of which are very different from their innermost essence.’ (Spinoza 1901 p.34)
• ‘At present [1933] it appears that two other very general mathematical disciplines will be used increasingly in the future. One of them is the theory of groups; the other is analysis situs. In the latter we study only these characteristics of figures that are unaffected (invariant) by continuous deformation produced without tearing. Two structural points are relevant for us in this connection: namely that the analysis situs is fundamentally a differential and also an ordinal discipline, based on asymmetrical relations. In the next chapter, as an illustration of the actional, behaviouristic, functional operational, differential, contact method a short account will be given of the way Einstein structurally treated “simultaneity”.’ (Korzybski 1933 p.658)
• ‘As a living experience, natural awareness is […] – neither a subject nor an object, neither time nor space.’ […]
Mind itself has [...] no beginning, no end. [...] The "field" of awareness is completely open "space", but this space is neither "outside" the body nor "inside" the mind. (Tulku 1976)

- ‘The boundary condition of the universe is that it has no boundary.’ (Hawking 1998 p.141)
  ‘The universe would be completely self-contained and not affected by anything outside itself. It would neither be created nor destroyed. It would just BE.’ (op.cit. 1998 p.141)
  ‘But if the universe is really completely self-contained, having no boundary or edge, it would have neither beginning nor end: it would simply be.’ (op.cit. 1998 p.146)

- ‘“Headlessness”, the feeling of no self that mystics of all times have aspired to, is an instantaneous way of “waking up” and becoming more aware...’ (Harding 2000 back cover)

- ‘According to Dr. Lee Zhan Tin, a professor at Gangzhou City Fine Art College, China, western culture is the yang culture...[and] Eastern culture is the Yin culture [...]. It treats people as a small universe. The body is a reflection of the bigger universe. Therefore, it is emphasising [the] study of the body as a method to study the universe.’ (Wen Wei Ou 1999)

The practice of a ‘form’ acted out in gesture is an ancient method to alter body, mind or one’s lifeworld in a nexial or topographic way (eg ritual, mystical Qigong form of Wen Wei Ou 1999, Reiki visualisation symbols of Porter 1997 – see <PPT2 Models collected\ slides 17 & 16> respectively).

**Space as boundaried: badly behaved Hidden, Below, negative sea, Abyss...**

- ‘The Apeiron: Its Repression and Resurgence: The Greek word peras means limit or boundary, and “a-peiron,” means without boundaries, boundless or indeterminate. Apeiron is variously interpreted as “the unintelligible; the many; the moving; the ugly; the bad...the inchoate flux of opposites or contraries...the principle of disorder or disharmony” (Angeles, 1981, pp.14–15). We can associate apeiron with the boundless chaos of primordial nature. [...] the Anaximander fragment of the 6th century BCE. Here apeiron is portrayed as the “boundless giver of boundaries.” [...] To the ancient Greeks, the apeiron posed a significant challenge. [...] It was therefore imperative for them to tame apeiron, given the primary impulse... [...] Achieving this end essentially has meant containing what at first appeared uncontainable: the boundless apeiron. [...] Being, says Heidegger, is the presupatial action “that provides the space in which space as we usually know it can unfold” (1962/1972, p.14). [...] Similarly, Merleau-Ponty speaks of “brute” or “wild Being” (1968, p.170) – meaning organically grounded, primally embodied [...] Conventional thinking will need to be turned upside down and inside out. [...] we require, an “epistemotherapy” that...regrounds us in the lived body.’ (Rosen 2004 pp.3.6)

- ‘The other great difficulty..., a null result to second order in powers of v/c on the detection of “ether wind”. The absence of first-order effects —... that electrostatic phenomena...— was well known;... no experiment sensitive only to effects of first order could detect the ether wind.’ (Saunders & Brown 1991 p.41)

- ‘We cannot say that the conventional theory is equivalent in all respects to the canonical second quantized theory with respect to the particle complex structure; this is true only for a limited class of global operators (which preserve particle number). In particular, the equivalence does not hold for local multiplicative operators, for these connect positive-and negative- frequency states. (They are “odd” operators... [...] For these the RHS of (14), if considered a perturbation, would induce transitions from particle to anti-particle states, which would be a complete disaster.’ (Saunders & Brown 1991 p.100)

- ‘The Dirac hole theory was developed in response to a growing crisis over the Dirac theory of the electron. It predicts the existence of antiparticles in a relativistic quantum theory; the antiparticle came into existence as a ‘hole’ in a sea of negative-energy particles.[...] the phenomenology, of pair creation
and annihilation processes, the basic mechanisms of relativistic dynamics. [...] If this concept was initially tied to the negative-energy sea, that is not the case any longer. The negative-energy sea remains a widespread heuristic device to introduce antimatter. But nowadays no one would claim that the negative-energy sea actually exists; it is no longer taken as a literal description of the vacuum.’ (Saunders 1991 p.65)

- ‘We may conclude that the negative-energy sea is what the particle vacuum looks like using the wrong notion of complex numbers (the natural complex structure). If the particle vacuum is to appear really empty, then we must use the particle complex structure at the Hilbert space level.’ (Saunders 1991 p.106)

- ‘Gödel extended Einstein's General Theory of Relativity with cosmological models —now known as “Gödel Universes”—with extraordinary properties, including the possibility of closed, timelike curves.’ (Sklar 2002)

  ‘Gödel's discovery of models of general relativity with closed causal curves,’ (Sklar 2006)

**The philosophically good enfolded-unfolded**

- ‘An inquiry into our language: [...] suddenly to invent a whole new language... is clearly not practicable. What can be done is... to introduce a new mode of language. [...] The *rheomode* (“rheo” is from a Greek verb, meaning ‘to flow’) [...] a mode in which movement is to be taken as primary in our thinking... by allowing the verb rather than the noun to play a primary role... Hidden variables in quantum theory.’ Quantum theory as an indication of a new order in physics: implicite and explicate physical law.’ ‘The enfolding-unfolding universe and consciousness.’ (Bohm 1980 pp.30-31)

**An ancient perspectivalist review of iconic analogies we reformulate**

In this perspectivalist review of different general frameworks of explanation (delineated below by [1], [2], [3], [4]) each set of iconic analogies is found reformulated in different historical periods, uses different topographic and nexial imaging, and are still found, respectively, in our modern models (whose deployment topology can model), human metaphors, natural sciences, and intuition-instinct.

‘*Tracing Dao to its source* is the opening treatise of the Huainanzi, [and is ] among the earliest and most seminal of the documents that illustrate how Han thinkers [syncretic way of thinking] came to see their world...’ (Lau 1998 p.3) ‘It is an argument against ... expansionism, and the zero-sum consolidation... that was driving...’ (op.cit. p.5, from the postface) ‘It investigates the cycles of calamity and good fortune, of benefit and injury.” (op.cit. p.9) ‘The underlying structure of most of the syncretic texts and their commentarial appendices tends to be a an illustration of what we will call an emanating and centripetal “radial” order [... with a] mosaic structure.’ (op.cit. pp.10, 12)

[1] ‘It shelters the heavens and supports the earth,  Extends beyond the four points of the compass  And opens up the eight points of the compass [...]  Flowing from its source it becomes a gushing spring,  What was empty slowly becomes full;  First turbid and then surging forward,  What was murky slowly becomes clear.  Hence, stand it up vertically, and it stuffs up the heavens and the earth;  Lay it horizontally on its side, and it fills the four seas.  Dealing it out it becomes endless, yet is without morning or evening.  Unroll it, and it blankets the six directions;  Roll it up, and it is less than a handful.  Compact, it can stretch out;  Dark, it can be bright. [...]
It is the thinnest of gruels, the finest and most subtle texture.' (Lau 1998 p.61)

[2] 'By virtue of it, mountains are high;
By virtue of it, abysses are deep;
By virtue of it, animals run;
By virtue of it, birds fly;
By virtue of it, the phoenix soars.' (op.cit. p.63)

'Thus, with the heavens as his canopy, there is nothing that is unsheltered;
With the earth as his boxframe, there is nothing that has no conveyance; (op.cit. p.71)
He knows the lay and the boundaries of the various divisions and quadrants of the cosmos. […]
Hence, there is nothing you can do about the world.

[3] You can only follow what is natural in pushing the myriad things ahead. […]
The likeness of the sound and shape is attained without fuss.' (op.cit. p.73)

‘Observe what is being accumulated,
And you will know which direction it is heading for: fortune or calamity.' (op.cit. p.97)

[4] [Water] 'is without private likes' (op.cit. p.103)
‘Following the water gauge and adhering to the plumb line,
He does in every way what is fitting to the circumstances.’ (op.cit. p.111)
‘Vaguely they feel as if something is missing
Or as if pinning after something lost.’ (op.cit. p.119)
‘If we seek for the cause behind this, we cannot get a hold of it,
Yet this is doing injury daily to one’s vitality.’ (Lau 1998 p.121)
Text extracts F6 – Brain Central Control

‘[…] Malnutrition could contribute to neurotransmitter disturbances…neurotransmitter disturbances could be related to …fluid or electrolyte abnormalities.’ (Anderson & Kenedy 1992 p.120)

The following extracts review some aspects of the role of the brain in health, which are rarely put together into a coherent ‘big picture’. This hides both ‘whence’ our focus on the brain comes, and ‘where’ it leads.

Double-binds: activated head and its lateralisation

- ‘When the parts of the body and its humors are not in harmony, then the mind is unbalanced and melancholy ensues but on the other hand, a quiet and happy mind makes the whole body healthy’ (Aristotle)

- ‘When the members work joyfully, The head rises grandly; And the duties in all the offices are fully discharged! […] When the head is intelligent, The members are good; And all affairs will be happily performed! […] When the head is vexatious, The members are idle; And all affairs will go to ruin! (Waltham 1971, Shu Ching, Yi and Chi p.35)

- ‘Laterality – it must be right – … Children who… are poorly lateralized, and who are emotionally unstable or immature are all likely candidates for dyslexia. There is no reason why the remedy for such deficiencies could not be carried out within the school itself. […] No doubt someone will ask, “What about the cost?” Surely to humanize a little child and make him into a man is something beyond price!’ (Tomatis 1991 pp.168,169)

- ‘By taking readings on hundreds of people, Dr. Davidson has established a bell curve distribution, with most people in the middle, having a mix of good and bad moods. Those relatively few people who are farthest to the right are most likely to have a clinical depression or anxiety disorder over the course of their lives. For those lucky few farthest to the left, troubling moods are rare and recovery from them is rapid. […] There was something about the training of lamas - the Tibetan Buddhist equivalent of a priest or spiritual teacher - that might nudge a set point into the range for perpetual happiness? Perhaps, there is a catch: almost no one can read these moments. […] Reading microexpressions, and seeks to help people better manage their emotions and relationships […] Finally, the scientific momentum of these initial forays has intrigued other investigators. Under the auspices of the Mind and Life Institute…’ (Goleman 2003)

‘In short, the results suggest that the emotion set point can shift, given the proper training. In mindfulness, people learn to monitor their moods and thoughts and drop those that might spin them toward distress. Dr. Davidson hypothesizes that it may strengthen an array of neurons in the left prefrontal cortex that inhibits the messages from the amygdala that drive disturbing emotions. Another benefit for the workers, Dr. Davidson reported, was that mindfulness seemed to improve the robustness of their immune systems, as gauged by the amount of flu antibodies in their blood after receiving a flu shot. […] The mindfulness training focuses on learning to monitor the continuing sensations and thoughts more closely, […] What difference such intense mind training may make for human abilities…’ (Goleman 2003 – see <Extracts F10\ Left-Right>)

The brain for health

The role of the brain and that of the mind in stabilising health is covered by a great amount of literature, Western and Eastern, conventional and alternative. Some examples are:

‘Brain, pain, drain’

- “The brain, the pain, and the energy drain!” … is how Charles Lapp, M.D. of the AACFS… describes CFS and FMS. […] sleep disorder is one of the symptoms… […] If you ask people why they visit the doctor, Jason states that the number one reason will be due to fatigue. Yet if you turn the situation around and ask health care providers (doctors)… “Fatigue will be at the bottom of their list!”. So biased perceptions about fatigue play a role in defining “who” receives the diagnosis of CFS.’ (Thorson 2003 p.9) […] ‘Biochemistry of CFS: The AVP is an enzymatic process that exists within the body’s white blood cells, called lymphocytes. […] These [pro-inflammatory] cytokines are produced by “activated” glial cells in the spinal cord. The glial cells become activated by any type of infection (not just viruses) physical trauma or tissue damage. […] The purpose of the AVP is to degrade RNA in order to halt protein synthesis, which in turn prevents the viruses from replicating. […] Chronic activation of the AVP interferes with protein synthesis […] In CFS patients, Suhadolinik found that two types of RNase L enzymes are present in a majority of patients. […] The smaller enzyme works three times faster than the larger enzyme to breakdown RNA. (Thorson 2003 p.11)

- ‘Headache is probably man’s Number One malady. […] Headaches have been with us for a long time. […] Between headaches the migrainous individual is usually perfectionistic, productive and unusually healthy. These individuals may actually live longer than others because of having a “safety valve” which creates a headache when too much stress occurs. […] A lucky one-third of mankind never has a headache of the kind that occasionally lays the rest of the world low. Excluding neuralgias and (back-of-the-head) muscle tension, one can state flatly that headaches are due to varying heart and blood volume output in relation to the local or peripheral resistance to blood flow. […] The headache does not occur during the drop in blood pressure accompanying the initial histamine shock.’ (Pfeiffer 1975 p.432-3)

- ‘Pain, explains Dr. Young, is “an unpleasant sensory and emotional experience, associated with actual or potential tissue damage. It is always subjective; there’s no such thing as a pain meter. [but topography] Many things influence pain; it can be viewed as a fifth vital sign, and gives us valuable information into inner workings of the body. […] Doctors often tell women that they’re getting old or it’s all in their head… it’s all in her mind […] often unwarranted psychogenic attributions for pain in women by doctors : all in your mind or head, hysterical, hypochondriac, getting old, …menstrual, …menopausal […] that statistics show they more frequently will be labelled as hysterical, [men: “drug seekers”] […] Such reactions are evidence of a lack of individual attention, and reinforce the desirability of an integrative approach that emphasizes customized or individualized care. […] The bottom line is that women are not small men when it comes to pain. […] ‘But what causes pain? What are the underlying mechanisms? It may be caused by increased central stimulation […] But pain can also be caused by decreased central inhibition,” says Dr. Young; the central inhibitory pathways are modulated by chemicals like serotonin and norepinephrine [known as noradrenaline outside the US]. Looking at the picture in total, both the mind and the brain may play a powerful role in modulating ascending and descending pain signals, and can truly shape the pain experience. […] regulate the brain's natural ability to suppress pain…. endorphins or enkephalins that dampen the pain signals received by the brain.’ (Morris 2005)

- Dermatomes of nerve numbness and pain (Marieb & Mallatt 2003, p.436)

- ‘Vital signs are physical signs that indicate an individual is alive, such as: breathing rate, heart beat, temperature and blood pressure. These signs may be observed, measured, and monitored to assess an individual’s level of physical functioning. Normal vital signs change with age, sex, weight, exercise tolerance, and condition.’ (Owens 2005)
**Vital Signs as remnants of the 4 Elements:** WATER – blood pressure; AIR – breathing rate, WIND – heart beat; FIRE – temperature;... and EARTH – pain, the ‘5th vital sign’.

**HTA Axis, vertical axis, brain as body integrator**

- ‘The 2 principal effectors of the stress response, the hypothalamic-pituitary-adrenocortical (HPA) axis and the sympathetic nervous system (SNS), are also activated. Although normally adaptive, the stress response may become maladaptive in patients with chronic pain and fatigue syndromes, such as FM.’ (Winfield 2006)

- ‘Depression is characterised by an over activity of the hypothalamic-pituitary-adrenal (HPA) axis that resembles the neuro-endocrine response to stress. These HPA axis abnormalities participate in the development of depressive symptoms. Moreover, antidepressants directly regulate HPA axis function. These novel findings are reshaping our understanding of the causes and treatment of this disabling disorder. […] Why should the stress-induced activation of the HPA axis, a biological system that is life saving and enables us to fight or escape our enemy, lead to such a bad thing as depression? The answer, from an evolutionary point of view... While the exact mechanism of this effect is still unknown - and we are divided on whether cortisol is a hero or is a villain…’ (Pariante 2006)

- ‘According to this view [self-organization in nonlinear systems], the organism is conceived to consist of a number of communication subsystems integrated by the brain into a larger system of information transfer and exchange with the environment in terms of coded signals of many different categories (from ions to words).’ (Weiner 1992 pp.283-4)

**Brain cuts the pain: stress analgesia (opioid and non-opioid)**

- ‘Two forms of stress analgesia have now been described.’ [opioid and non-opioid] (Weiner 1992 p.5)

- ‘[…] Empirical advances: Until fifteen years ago stress research consisted of correlations between the stressor and the physiological and/or anatomical changes in the body. The discovery of the brain-gut peptides and other advances in neurobiology have [...] given] a new impetus to stress research. (1)Two forms of stress analgesia have now been described […] (2) The function of brain peptides is to produce patterned physiological changes, which are exactly what an integrated view of the responses to stressful experiences demands.’ (Weiner 1992 p.5)

**Perturbable dynamics, information (perception): brain integrated ‘response to stress’ (external-internal)**

- ‘The concept of perturbation leading to a change in function is central to and the basis of stress theory (Weiner 1989, 19991b). It... allows us to understand how the human organism with its unique genetic and experiential history responds to perturbing experiences that allow it to remain intact, or to make the voyage from health to illness and/or disease,... Rhythmic functions manifest stability but, being dynamic are perturbable.’ (Weiner 1992 pp.284)

‘Significant advances have recently been made in our understanding of how the organism responds in a patterned and integrated, behavioral and physiological manner to new experiences, perturbations, challenges, threats, injury or complex changes in the environment. One seeks to understand by what means the organism recognizes them, what is the meaningful signal that is perceived, and how that perception is translated and orchestrated into anticipatory and appropriate behavioral and physiological responses designed to ensure survival. But the environment is not only stressful, it is also a source information and a repository of resources.’ (Weiner 1992 p.2)

‘the person for diverse reasons has failed to cope with them.’ (Weiner 1992 p.15)

‘Nonlinear mathematical models are approximate descriptions of the dynamic functions of biological systems. It is acknowledged that a more realistic account of physiological rhythms is needed. Feedback, that in part accounts for them, is provided by information exchange within the organism and between organisms by signals of a large variety of kinds. In this way, the organism is kept
informed about its own internal state and the condition of the external environment.’ (Weiner 1992 p.283)

**Brain-immune bi-directional vertical axis: activation**

- ‘Cytokines for psychologists: Implications of bidirectional immune-to-brain communication for understanding behaviour, mood and cognition.’ (Maier & Watkins 1998)
- ‘The brain and immune system form a bidirectional communication network in which the immune system operates as a diffuse sense organ, informing the brain about events in the body. This allows the activation of immune cells to produce physiological, behavioral, affective, and cognitive changes that are collectively called sickness, which function to promote recuperation. Fight-flight evolved later and coopted this immune-brain circuitry both because many of the needs of fight-flight were met by this circuitry and this cooptation allowed the immune system to respond to potential injury in anticipatory fashion. Many sequelae of exposure to stressors can be understood from this view and can take on the role of adaptive responses rather than pathological manifestations. Finally, it is argued that activation of immune-brain pathways is important for understanding diverse phenomena related to stress such as depression and suppression of specific immunity.’ (Maier & Watkins 1998)

**Micro-motions: being unconscious or sensitive**

- ‘Sensitivity is the set of functions that permit to react to the stimulation of a sensory receptor (sensation). … The classification of the five senses, established in antiquity… is incomplete: it does not include the spatial sensations that give information on the position and motion of the body in space. Sensitivity plays a fundamental role in adaptation. The question of the validity of the sensory data is essential and Descartes distrusted them.’ (Sensibilité, 2001, summarised translation)
- ‘When the text is read with mind and consciousness well focused, when the concentration is sufficiently complete, certain phenomena will occur to assist the communication process just described [message from text to mind to brain to body]. […] The reason why these phenomena – mostly micromovements of the muscles – are unconscious is simply that they are so small. […] the mind is to be as passive as possible, doing nothing voluntarily, and refraining from initiating bodily activities. Only when the mind is thus passive does the central nervous system have the best opportunity to make its own comparatively pure responses to the text [its message to the body],’ (Masters 1994 p.3-4) […] ‘Masters has also developed a series of exercises to reverse aging… ‘Whatever the brain can organize, Masters says now, the body will execute. If you learn to frame the statement, if you use the right images, you can work on heart, blood flow, lymph. The movement will happen.’ (Masters 1994 p. xvi)
- ‘As Dr. Ekman describes in "Emotions Revealed," to be published by Times Books in April, these microexpressions - ultrarapid facial actions, some lasting as little as one-twentieth of a second – lay bare our most naked feelings. We are not aware we are making them; they cross our faces spontaneously and involuntarily, and so reveal for those who can read them our emotion of the moment, utterly uncensored.’ (Goleman 2003)
- ‘Strong Prana is an asset for attaining success in spontaneous practice. Hence willful practice is very important for beginners. Pranopasana and Pranavidya are Sanskrit terms used for the spontaneous practice of Yoga, in which the vital force of Prana plays the key role. Before beginning such spontaneous practice, one should cultivate the intensifying of the vital force… The next step is the release of the vital force…. The third step is the raising of the vital force… along the path of the central subtle channel (Sushumna). The fourth step is the stabilization or conquering of the vital force in the frontal region. The fifth and final step is that of annihilation or dissolution of the Prana. Strong vital force is a must for an aspirant who intends to take up the spontaneous practice of yoga. Weak vital force cannot take one very far on the path. In order to strengthen the vital force one should… and practice willfully the Yogic exercises. When, through such willful practice the vital force is intensified, one should lift mental control over the body through the relaxation of the bodily organs and limbs. If this is done properly, the intensified vital force is released. This is Pranafurana, in which various physical movements occur spontaneously. (Muni 1993 p.170-171)
Failure of brain-central-control

- 'The disease of adaptation deals with maladies [...] which we consider to result largely from failures in the stress-fighting mechanism.' (Selye 1976 p. xvii)
- 'the person for diverse reasons has failed to cope with them.' (Weiner 1992 p.15)
- 'I have included all the many names that I have found for the syndrome first named neurasthenia in April 1869, up to the most recent proposal of Chronic Neuroendocrineimmune Dysfunction Syndrome. The dates refer to the year of the earliest (and often only one) published paper I could find that defines the disease.' Among these over one hundred names are: Fibrostis, Heat, Cold and Effort Sensitiveness, 20th century syndrome, many names for neurasthenias, myalgias, fatigue, dysautonomias, syndromes related to encephalomyelitis, allergy, battle, related to hypochondriasis, neuroses and mental illness, Idiopathic Hypoguesia., and Chronic Habitual Hyperventilation Syndrome.' (Donnay 2002) – See etymology of 'hypochondria' and 'hysteria'.
- 'Patient: Annette – She added, “I know – not wanting to mature as a female body is a child’s way of looking at it.” (Czyzewski &, Suhr 1988 p.122) [...] Annette repeated the issue of not feeling human during the course of therapy... I told her that many other patient’s expressed the same fear. Annette [...] said” “It is sort of a given that if you don’t see yourself or your body as everybody else considers them to be, then you are not really human”.’ (op. cit. p. 128) ‘Patient: Ita – How come that a girl growing up under such favourable circumstances fails to develop a sense of meaningful self-value. ’(op. cit. p. 130) ‘ Patient: Fawn – Fawn’s attitude about her eating habits was partly mystical.’ (op. cit. p. 139)
- ‘Anorexics misuse the eating function in their effort to solve problems in various areas of living. (op. dit. p. 115) [...] they suffer from a perceptual flaw in that they are frequently unable to differentiate between hunger and other sensations and feeling states: the brain is continuously making mistakes in its efforts to discriminate between bodily and psychological needs [...] they may claim that they were introduced to this uncontrolled overstuffing with food by others and may hold these people responsible for the habit.’ (op. cit. p. 115)
- ‘If you fall asleep after meals, talk to your doctor’ [TV message]
- ‘The exact cause of narcolepsy is unknown. Studies using gene markers have indicated that the disorder may be genetic. A small group of neurons in the brain has been implicated in producing transitions from sleep to wakefulness and vice-versa. People with narcolepsy may have fewer of these neurons or they may have been damaged. The condition may be aggravated by conditions that cause insomnia, such as disruption of work schedules. Narcolepsy is characterized by episodes of frequent, uncontrollable daytime sleeping, usually preceded by drowsiness. The episodes usually occur after meals, but sudden onset of sleep may occur while working or driving a vehicle, having a conversation, or being in any sedentary or nonstimulating situation. There is a brief period of sleep, and the person awakens feeling refreshed. However, the person may again become uncontrollably sleepy a short time later.’ (Campellone 2004)
- ‘E. Bleuler notes that the child is not a little schizophrenic but a normally functioning though primitive being. "The schizophrenic will regress to, but not integrate at , a lower level; he will remain disorganized" (Arieté, 1959, p. 475). Regression is essentially disintegration of personality; that is dedifferentiation and decentralization. [...] Decentralization is, in the extreme, functional dysencephalization in the schizophrenic.’ (Von Bertalanffy 1968 p.214)

Self-control of health, brain-central-control: Alert voluntary attention

- ‘Rather than signaling [sic] pleasure as previously thought, the neurotransmitter dopamine may be released by brain neurons [sic] to highlight significant stimuli... Satisfaction triggers the release from cells deep inside the brain of chemical dopamine – a neurotransmitter supposed to act on the brains reward system to produce feelings of pleasure... but many researchers no longer believe it acts directly, producing feelings of pleasure or euphoria. Instead, new data indicate that dopamine release within the brain highlights, or draws attention to certain significant or surprising events... but also... simply startling.... These researchers say the dopamine signal helps the animal to learn to recognize them and in some cases to repeat them.’ (Wickelgren 1997)
The secret of transformation from illness to health to higher levels of performance and well-being lay in recognizing and facilitating a person’s own creative resources during these natural windows of inner focus and rejuvenation that arise periodically for about 20 minutes every hour and a half or so throughout the day (Rossi 1982 p.130). […] Igor Todorov (1990) has integrated research on the molecular genetic cellular-level that outlines the more general process of complex adaptation to physical trauma, shock and stress.” (Rossi 1996 p.144)

The senior author has outlined research supporting The Neuropeptide Hypothesis of Consciousness and Catharsis that accounts for the arousal and relaxation phases of cathartic psychotherapy by the time-linked release of ACTH and… mental experience can modulate body processes and vice versa, in cybernetic patterns of information transduction. Mind over body and body over mind.’ (Rossi 1996 p.308-9)

Release of a rigidly apprehended focus of attention is associated with higher amplitude of EEG activity, as exemplified by alpha waves, and by greater phase agreement or synchrony between the activity occurring at all lobes.’ (Fehmi & Fritz 1980 p.25) ‘An attentional perspective suggests that the “automatic” triggering of the “fight or flight” response actually presumes the attentional mode of narrow focus-separateness. […] Stressful life events take their toll in accumulated tension… precisely because they elicit narrow focused [sic], obsessive or denying modes of attending.’ (Fehmi & Fritz 1980 p.27) […] Open Focus may be seen as an altered state of awareness in which denial processes are dropped, thus promoting alert tranquility, physiological normalization and optimization of performance.’ (Fehmi & Fritz 1980 p.28)

Brain & mind – Immunity as psycho-neuro-endocrino-immunology

‘Primarily considered a modulator of blood pressure and water balance, vasopressin is also involved in anxiety-like behaviours, especially in animals exposed to repetitive stressors… and there is also evidence that people with depression demonstrate increased levels of vasopressin.’ (Spollen et al. 2002)

There are two physiological conditions that may be related to unusual cognitive abilities. One is associated with the hypersensitivity that may bring on asthma and allergies, the other with vasopressin, the hormone whose most familiar effect is water-retention in body tissue.’ (ASPR 2005)

‘It is difficult to doubt that immunity and a person’s psyche are interrelated, but what is difficult to explain is the causal relationship. What is really causing what? Some argue that stress causes depression, which causes the immune system to function improperly because resources are tied up in activating the fight or flight mechanism. Others argue that depression causes stress, which then causes fight or flight. And yet another group argues that a person’s psychological state causes the individual to indirectly affect their health by bad nutritional, physical and sleep patterns. Future studies need to address these issues.’ (Beaton 2003)

‘I recited the words……and I can only surmise that it acted through……a form of emotional resonance that happens when receptors are vibrating together in seemingly separate systems. This was before the term subtle energy had been introduced to describe a still mysterious fifth source……and scientifically explain anomalies. (Pert 1997 p.252)

‘Progesterone [can, says Pert’s doctor,] protect against the symptoms of menopause: hot flashes, fibrocystic “lumpy” breasts, weight gain, and fluid retention… [It] is the “mother hormone”, creating feelings of calm and nurturance (especially in pregnant and lactating women, who produce particularly high quantities of it).’ (op. cit. p.255)

‘I have postulated a biochemical link between the mind and body, a new concept of the human organism as a communication network that redefines health and disease, empowering individuals with new responsibility, more control in their lives.’ (op. cit. p.15)

‘The concept of a network, stressing the interconnectedness… has a variety of implications….. In the popular lexicon, these kinds of connections between body and brain have long been referred to as “the power of the mind over the body.” But in light of my research, this does not describe accurately
what is happening. Mind doesn’t dominate body, it becomes body – body and mind are one. I see... the flow of information... as evidence that the body is the...actual outward manifestation, in physical space, of the mind – Bodymind... It become[s] clear how emotions can be seen as a key to the understanding of disease. [...] The immune system, like the central nervous system has memory and the capacity to learn. Thus it could be said that intelligence is located not only in the brain but in cells that are distributed throughout the body.[...] The brain is extremely well integrated with the rest of your body... The information molecules travel from one system to another... of the network. [We] must see them [emotions] as cellular signals that are involved in the process of translating information into physical reality, literally transforming mind into matter. Emotions are the nexus between matter and mind, going back and forth between the two, and influencing both.’ ((op. cit. p.187-189)

- ‘[...] In animal tissues response becomes feeble at low temperatures. As an optimum temperature it reaches its greatest amplitude, and again, beyond a maximum temperature it is very much reduced.’ (Bose 1922 p.188) ‘[...] In certain types of tissue the stimulated is relatively positive to the less disturbed, while in others it is the reverse;...this is accomplished either (1) by ‘injuring’ or (2) by introducing a perfect block.’ (Bose 1922 pp. 183)

- ‘There is increasing scientific interest in the area of brain-immune system interactions and the physiological changes that are induced by activation of the immune system.... Stress and other behavioral and psychologic factors may be linked to disease susceptibility and progression through either direct CNS-immune system links or CNS-endocrine-immune system pathways. Cytokines and their receptors that are expressed in both the immune and central nervous systems provide a critical link between the two systems. Activation of these cytokine receptors regulates a variety of physiological events, ranging from activation of the hypothalamic-pituitary-adrenal axis to sickness behavior.’ (PsychoNeuroImmunology 2006)

- ‘The study of the effects of the mind on the functioning of the immune system, especially in relation to the influence of the mind on susceptibility to disease and the progression of a disease.’ [...] ‘The field of psychoneuroimmunology (PNI)... studying the interactions among the central nervous system (CNS), the endocrine system, and the immune system. Mechanisms underlying this linkage are, now becoming understood. [...] Psychoneuroimmunology increasingly is dissolving dualisms of mind-body, body-environment, and individual-population.’ [...] ‘...that somatic awareness is akin to psychological insight ... The degree to which the patient is skilled at sensing the body’s diseases and its health are also conditions of meaning, as integrated through interpretations of life experienced by mind-brain-immune system. [...] Patients may begin to realize the extent to which the body that he or she presents to medicine for diagnosis and treatment ...’ (PsychoNeuroImmunity 2003)

- Searches on the whole website performed more recently returned: ‘Search Keyword “mind” – Total 0 results found,’ and ‘Search Keyword “somatic awareness” – Total 0 results found.’ (PsychoNeuroImmunity – 2006 searches)

- ‘To understand these factors, collaborations between investigators from different disciplines must have an understanding for each other's fields, methods, and technologies.’ [...] ‘This innovative journal publishes peer-reviewed basic, experimental, and clinical studies dealing with behavioral, neural, endocrine, and immune system interactions in humans and animals. [...] Research areas include: Stress and immunity, including the role of stress-related hormones and neurotransmitters on the immune system and brain; Actions of cytokines and growth factors on neuronal and glial cells to regulate behavior, cognition, and neuroendocrine function; [...] Inflammation, neuroscience, and behavior; [...] Sleep, exercise, immunity, and health; [...] Regulation of nerve injury and repair by the immune system; Psychosocial, behavioral, and neuroendocrine influences on immunity and on the development and progression of immunologically mediated disease processes; [...] Cancer, brain, and immunity.’ (PsychoNeuroImmunity 2005)
Text extracts F7 – Landscapes and forms of stability

The following extracts display various ways of formulating perspectives based on the topographic notion of landscape, with various words. Landscapes in general represent ‘quasi-stability’ rather than permanent stability (stable ‘for a time’), and often involve notions of timed self-[re]organisation that yield self-fulfilling prophecies about reality. The graphic form of some of these models is used in the presentation <PPT2 Models collected>.

**Boundary and localisation**

- ‘Life becomes suffering, full of battles. But all of the battles in our experience… are created by the boundaries we misguided throw around our experience.’ (Wilber 1985 preface)
  
  ‘Logic traces out on a flat surface a distinction, such as a circle, and maintains that the inside of that circle is clearly and evidently distinct and separate from the outside… Now this is true on a flat surface – the universe, however, is not flat. It seems to more clearly resemble a torus, that is, it has a donut-like curvature, and if we draw a circle on a torus, its inside is its outside. We can separate the inside from the outside but only because we agree to or pretend to, but it is only pretend. Thus proclaims the Lankavatara Sutra’ (Wilber 1977 p.56)
  
  ‘Duality is “division into two”, and that what appears to be exactly what the above distinction or boundary [dark disc] has done – divide the paper into “two” parts: the figure of the disk vs the background of the page. […] never and I actually aware of a separate “disk-thing” – what I see in fact, in concrete fact, is the entire visual field or gestalt of figure-plus-background.’ (Wilber 1977 p.106)

(Wilber 1977 p.56, and 106)

Compare this to the following description of a vertical axis, the gastrointestinal tract:

- ‘Intestinal Disorders: The adult gastrointestinal tract is essentially a tube which runs from the mouth to the anus. The center, or lumen, of this tube is rather like the hole in a doughnut. It is actually continuous with the external environment, which means that the contents are technically outside the body. From the stomach on, the surface of this tract is made up of a single layer of cells. Absorption of nutrients occurs through this layer of cells. The surface of the lumen is highly convoluted, with many ridges and valleys. This allows for a much greater surface area from which nutrients can be absorbed. Also embedded in this surface are cells which secrete various enzymes, acid, hormones, water, mucous and ions into the lumen… […] The intestines are essentially comprised of two segments - the small intestine and the large intestine.’  (Canadian Association of Gastroenterology 2006)

- ‘For a relativist, on the other hand, the idea of a fundamental description of gravity in terms of physical excitations over a background metric space sounds physically very wrong. The key lesson learned from general relativity is that there is no background metric over which physics happens (unless, of course, in approximations)… general relativity is much more than the field theory of a particular force. […] Rather, it is the discovery that certain classical notions about space and time are inadequate at the fundamental level; […] One of these inadequate notions is precisely the notion of a background metric space, (flat or curved), over which physics happens.[…] Therefore, we need a
relational notion of a quantum spacetime. [...] formulated without a background spacetime.' (Rovelli, 1998a)

'We do not know whether this theory is physically correct or not. Direct or indirect experimental corroboration of the theory is lacking. This is the case, unfortunately, for all present approaches to quantum gravity. The other large research program for a quantum theory of gravity, besides loop quantum gravity, is string theory, which is a tentative theory as well.' (Rovelli, 1998b)

- *Metamodel*: This is a core dynamic four quadrant spiraling integral model.

(Von Bertalanffy, et al., wholeness seminar 1996, see <PPT Models collected >)

'The general is simple, the particular is complex. [...] Finding and identifying what we call our primary and secondary principles of systems provides us with a list that may include all possible kinds of relationships. Furthermore, many of these primary and secondary relationships co-exist simultaneously, while others are emergent, and include time as a process.... Well, think of this as a metaphor... [...] Systems, (from the Four Directions of Philosophy, Theory, Methodology and Application), as a family of meaningful relationships among the members acting as a whole and possessing... [...] That was made from our toolbox, which as a LIST looks like this: ... We have broken the sub-parts into word (intensional) and example (extensional) definition. [...] A System is a family of relationships, among the members acting as a whole... A System integrates relationships into a whole (family) [...] Reference is the creation of any relationship by an observer. Reference establishes a standard from which an observer can infer associations of variables such as correlation or causality. Reference creates a relationship for an observer. [...] Internal excludes relationships which belong outside the reference boundaries established by a particular observer. [...] External are those relationships which belong outside the reference boundaries established by a particular observer... There are many dangers external to the space shuttle’s protective skin. [...] A Whole is a system which is observed without its internal relationships, thereby embodying a function on its own... A Whole is perceived by observers for its function on its own, instead for its specific relationships, subsystems, and parts. It quasi hides or has hidden its internal relationships from observation. [...] Boundary collects all of the unobserved relationships in a system being observed, making wholes or entities 'I can see the whole city!', cried the boy at the top of the Empire State Building. [...] Simplicity is a state of wholeness. What does Simplicity do? Simplicity describes wholeness. Seen from afar, it is easy to think of the oak tree is a model of simplicity." [...] Unification is the tendency toward wholeness. What does Unification do? Unification gathers entities into wholeness. The unification of our disparate theories might result in a clearer path for all.' (Shapiro et al., wholeness seminar 1996)

- **Boundaries**: Any system as an entity which can be investigated in its own right must have boundaries, either spatial or dynamic. Strictly speaking, spatial boundaries exist only in naive observation, and all boundaries are ultimately dynamic. One cannot exactly draw the boundaries of an atom bomb (with valences sticking out, as it were, to attract other atoms), [...] or of an organism (continually exchanging matter with environment). In psychology, the boundary of the ego is both fundamental and precarious. As already noted, it is slowly established in evolution and development and is never completely fixed. It originates in proprioceptive experience and in the body image, but self-identity is not completely established before "I", "Thou" and "it" are named. Psychopathology shows the paradox that the ego boundary is at once too fluid and too rigid. Syncretic perception, animistic feeling, delusions and hallucinations, and so on, make for insecurity of the ego boundary; but within his self-created universe the schizophrenic lives "in a shell", much in the way animals live in the "soap bubbles" of their organization-bound worlds (Schiller, 1957). In contrast to the animals limited "ambient", man is "open to the world" or has a "universe"; that is, his world widely transcends biological bondage and even the limitations of his own senses. To him, "encapsulation" (Royce, 1964) – from the specialist to the neurotic, and in the extreme, to the schizophrenic – sometimes is a pathogenic limitation of potentialities.' (Von Bertalanffy 1968 p.215)

- The terms *feedback, servo-mechanisms, circular systems and circular processes*, may be viewed as different but equivalent expressions of much the same basic conception.' (Frank et al., 1948, condensed p.17)
'In the last resort, structure (i.e., order of parts) and function (order of processes) may be the very same thing: in the physical world matter dissolves into a play of energies, and in the biological world structures are the expression of a flow of processes.' (op. cit. p.27)

'as “systems”, i.e., complexes of elements standing in interaction’ (op. cit. p.33)

- ‘The effect arises from the interplay between localized and extended states that form when electrons, confined to two dimensions, are subject to a perpendicular magnetic field. The effect involves exact quantization of all the electronic transport properties owing to particle localization….strong-field localization associated with a single-particle drift motion of electrons along contours of constant disorder potential.’ (Llani et al. 2001 pp 328,329.)

- ‘The differentiation of frontal lobe epilepsy (FLE) and temporal lobe epilepsy (TLE) is a clinical problem of major theoretical and practical importance. […] The results of this study suggest that relatively few seizures can be localized reliably on clinical grounds and… an important minority do not share the same associations… with specific cortical areas… Analysis of the seizure evolution as well as initial symptoms may be of value in localizing some cases, but even here wide variation occurs. These findings lead us to question the value of classifying partial epilepsy using electroclinical criteria, particularly in trying to infer anatomical localization.’ (Manford, Fish & Shorvon 1996)

- ‘This book is about the way other persons become visible to us, or cease to be visible to us. It is about the way we make ourselves (and the originally interior facts of sentience) available to one another through verbal and material artifacts, as it is also about the way the deregulation of artifacts may assist in taking away another person’s visibility. The title of the book, The Body in Pain, designates as the books’ subject the most contracted of spaces, the small circle of living matter; and the subtitle designates as it subject the most expansive territory, The Making and Unmaking of the World. But the two go together…’ (Scarry 1985 p.22-23)

When one hears about another person’s physical pain, the events happening within the interior of that person’s body may seem to have the remote character of some deep subterranean fact, belonging to an invisible geography that, however portentous, has no reality because it has not yet manifested itself on the visible surface of the earth. Or alternatively, it may seem as distant as the interstellar events referred to by scientists who speak to us mysteriously of not yet detectable intergalactic screams or of “very distant Seyfert galaxies, a class of objects within which violent events of unknown nature occur from time to time.” Vaguely alarming yet unreal, laden with consequence yet evaporating before the mind because not available to sensory confirmation, unseeable classes of objects such as subterranean plates, Seyfert galaxies, and the pains occurring in other people’s bodies flicker before the mind, then disappear.’ (op. cit. p.2-3)

But the nature of creation, however self-effacing, must also be conceptually available and susceptible to description so that the periodic dislocations within its overall structure of action can be recognized and repaired. The collective effort to understand making, already very old, will always be ongoing. […] It passes on the password of Isaiah’s ancient artisans – “Take Courage!” (41:6).’ (op.cit. p.326)

**Topography in anatomy**

- 'The four corners delineate the normal size and location of the heart’... ‘enlarged or displaced heart can indicate heart disease or other disease conditions’ (Marieb & Mallatt 2003 p.522)

'the fibrous pericardium… adhesions to the diaphragm inferiorly, and superiorly is fused to the roots of the great vessels that leave and enter the heart. […] Deep to fibrous pericardium is the double-layered serous pericardium a closed sack … between the parietal and visceral layers of serous pericardium is a slit-like space, called the pericardial cavity, which contains a lubricating film of serous fluid' (op.cit. p.524)

*Pericarditis*: 'inflammation of the pericardium…can lead to a roughening of the serous lining of the pericardial cavity. As a consequence, the beating heart produces a creaking sound called pericardial friction rub. … Over time, it can lead to adhesions of the heart to the outer layer of the pericardial wall or the pericardium can scar and thicken, then contract and inhibit the heart's movements. Pericarditis is characterised by pain behind the sternum.' (op. cit. p.524)

*Cardiac Tamponade*: 'In severe, acute cases of pericarditis, large amounts of fluid resulting from the inflammatory response exude into the pericardial cavity…. excess fluid compresses - The excess fluid
Landscapes of stability and stable paths

- 'According to this doctrine [of freedom, prepared by the doctrine of contingency]… practical good, or the ideas, which merits realisation, and yet is capable of not being realised, is indeed realised only when it happens spontaneously. The laws of nature have no absolute existence; they simply express a given phase, a stage, a moral and aesthetic degree of things, so to speak… [...] They are the image, artificially obtained and determined, of a model that, in essence, is living and movable. The apparent constancy of these laws finds its reason in the stability inherent in the ideal self. [...] This is what in man is called habit. [...] Habit, however, is not the substitution of a substantial fatality for spontaneity: it is a state of spontaneity itself.' (Boutoux 1874 p.195)

- 'In proportion as… the subordination of the lower being to the higher… becomes more spontaneous and complete: … we find a diminution, throughout the world,… of the undisputed sway of physical fatality. The complete triumph of the good… would replace them [laws of nature] by the free flight of human wills…' (op. cit. p.196)

- 'Man is endowed with intelligent spontaneity, the highest form of which is free will or the power to choose between good and evil. [...] Free spontaneity, however, in the conditions of the actual world, can do no more than increasingly approach this ideal. It never reaches the end of its task.' (op. cit. p.184)

- 'intercurrent spontaneity’ (op. cit. pp.185).

- 'One of the most characteristic properties of the developmental process is that it is stable. An embryo does not need an absolutely perfect environment and it can survive many small disturbances and even some large ones. Two embryos do not have to be clones to turn into very similar adults. The stability of development is, however, not just the simple sort of stability that we observe in such familiar examples as a ball at the bottom of a cup. An embryo that is perturbed will not return to the state that it was previously in. If it can recover at all, it will continue to develop, eventually reaching more or less the state it would have attained had it been left alone. What is stable is not the state of the embryo at any one time, but its pathway of development.' (Saunders, P. 1993)

- 'For a relativist, on the other hand, the idea of a fundamental description of gravity in terms of physical excitations over a background metric space sounds physically very wrong. The key lesson learned from general relativity is that there is no background metric over which physics happens (unless, of course, in approximations)… general relativity is much more than the field theory of a particular force. [...] Rather, it is the discovery that certain classical notions about space and time are inadequate at the fundamental level; [...] One of these inadequate notions is precisely the notion of a background metric space, (flat or curved), over which physics happens.[...] Therefore, we need a relational notion of a quantum spacetime.[…] formulated without a background spacetime.' (Rovelli, 1998a see <PPT2 Models collected>)

- 'Therefore, we need a relational notion of a quantum spacetime.' (Rovelli, 1998b section 2.2) ‘formulated without a background spacetime.’ (ibid.)

- ‘Loop quantum gravity is a mathematically well-defined, non-perturbative and background independent quantization of general relativity, with its conventional matter couplings. The discreteness emerges naturally from the quantum theory and provides a mathematically well-defined realization of Wheeler’s intuition of a spacetime “foam”.’ (op.cit. section 1)

- ‘…a very small value of the cosmological constant is the "dark energy" that is driving the expansion of the universe. […] New solution… We therefore know that the de Sitter minimum has to be unstable, and that it will ultimately decay to the stable flat 10D minimum via quantum tunnelling (see figure). Fortunately its lifetime is far greater than the age of the universe.’ (Quevedo 2003, see <PPT2 Models collected>)

The measured value is near 0.2. This is close to an Ω of 1, which is strange because Ω of 1 is an unstable critical point for the geometry of the Universe. […] Values slightly below or above 1 in the early Universe rapidly grow to much less than 1 or much larger than 1 (like a ball at the top of a hill). So the fact that the measured value of 0.2 is so close to 1 that we expect to find in the future that our
measured value is too low and that the Universe has a value of exactly equal to 1 for stability. And therefore, the flatness problem is that some mechanism is needed to get a value for to be very, very close to 1 (within one part in a billion billion).’ (Quevedo 2003)

• ‘Resilience is the capacity of a system to absorb disturbance and reorganize while undergoing change so as to still retain essentially the same function, structure, identity, and feedbacks. Precariousness: the current trajectory of the system, and how close it currently is to a limit or “threshold” which, if breached, makes recovery difficult or impossible.’ (Walker et al. 2004, see <PPT2 Models collected>)

• ‘Figure 1: a system moving through the adaptive cycle…. The red and yellow balls indicate alternative stable states of the same system. … growth equation, … Ω and α signify ending and beginning. […] Figure 3: A simple depiction of ecosystem replacement on an oceanic island such as Krakatoa. The volcano changes the topography of the island and covers it in ash and lava, creating a different abiotic environment. Recolonization occurs at random from bird-dispersed seeds that differ substantially from those of the vegetation that was there prior to the volcano. Spatiotemporal continuity of the ecosystem is completely lost in this example.’ (Cumming & Collier 2005)

Compare to archaic literature and myths told by Plato.

**Shapes and expression**

• ‘Irigaray said that woman is not situated, “does not situate herself in her place”, that she serves as a thing and is thus nude. I have intuitively felt the need to ‘clothe’ myself, to find the Place within me, to move from object to sentient subject…. awakened me to the language that I and others spoke everyday – and how the world was thus shaped: how my very own sacred Land, my bodily presence in the world was alienated from my consciousness by everyday expression and imagery.’ (Livingstone 2005 p. 4-5)

• ‘The new science of comparative philology has revealed that, if on the one hand speech gives expression to ideas on the other hand it receives impression from them, and that the impressions thus stamped are surprisingly persistent. The consequence is that in philology we possess the same kind of unconscious record of growth and decay of ideas […] bearing upon the “origin of human faculty.” (Romanes 1888 pp.238-9)

‘… observe that the theory of evolution was clearly deduced from, and applied to, the study of languages, by some of the more scientific philologists, before it had been clearly enunciated by naturalists. “[…] we must bear in mind… the spread of one dialect at the expense of others, a fact which obliterates intermediate forms, and brings extreme ones into geographical juxtaposition.” * —— [Author’s note:] * Remembering that the above was published two years before the Origin of Species by means of Natural selection, this clear enunciation of the struggle for existence in the field of philology appears to me deserving of notice. […] Now, at the present day, owing partly to the establishment of the doctrine of evolution in the science of biology… students of language are unanimous in their adoption of the doctrine of evolution in the science of biology… students of language are unanimous in their adoption of the doctrine of evolution. […] A philologist may be firmly convinced that all languages have developed by way of natural growth from these simple elements or “roots”.’ (op.cit. p.240-2)

• ‘Laws do not exist before things; they presuppose their existence. They do not govern phenomena, but only express them. […] What Boutroux called the “the doctrine of contingent variations”. ’ (Vidal 1994 p.223)

• ‘Reconstructing… [system] histories from… clusters:…. after the true nature of [systems] as… “island universes” was established, their origin… remain[s]… unsolved. One of the ways to investigate… formation is to study the ubiquitous… globular…clusters…, one of the most promising “tracer” populations… that can serve as reliable gauge of their evolution. […] Recent advances in our understanding… point to a complex picture of… genesis driven by cannibalism… and tumultuous events. […] … Subpopulations: […] The detection of young [new] massive… clusters… [] the presence of such… in disturbed [systems] suggests that the disturbances themselves may act as a catalyst for the birth of globular clusters and raises the question of whether this might be the primary mechanism of… formation. […]… that many – perhaps most—large [systems] possess two or more
subpopulations of globular clusters [...] that have quite different ... metallicities. By convention, the metallicity... is measured relative to the Sun's... are inferred from their... colours..., and is confirm[ed] [statistically to be] well described by... two gaussian distributions with distinct metal-poor and metal-rich peaks. Subsequent studies revealed that these... sub-populations also have different... kinematics. [...] Competing formation models: [...] that the metal-poor and metal-rich correspond to different generations... originated... from clouds of metal-poor... that collapsed under gravity... to form... Over time... explosive deaths... “ashes” from their interiors [...] If a second generation... forms..., then two separate species of clusters... one... more metal-rich.... But how to trigger multiple episodes of... formation? [...] Model strengths and weaknesses: Although each of the competing models offers a plausible explanation for the existence of multiple globular cluster populations, each [model] suffers from... shortcomings. [...] creation of multiple generations... are predicated on processes whose physics is poorly understood... such as... heating and cooling, cluster... Producing two or more generations... requires fine-tuning... If [formation] is a prolonged process rather than occurring in bursts at two or more well-separated epochs [...] then the resulting cluster populations would probably have a broad distribution of metallicites [...] is lacking the distinct peak seen in the majority of large [systems] today [...] Strongly constrained by the very old ages... suggests that either... completed [in distant past] or that such events are not the primary mechanisms by which most clusters form. [...] accretion model of pre-formed globular clusters [by cannibalisation of the small]... relegating... the creation of new globular clusters...taking place today... to a second-order effect... rather than the primary formation mechanism for most [...] Additionally requires a distribution of proto-...masses that was very heavily weighed in favour of low-mass... with large... assembled from... cannibalized smaller... Such a steep mass function is inconsistent with observations of the luminosity function of [systems] today, but is suggestively similar to the primordial spectrum , predicted by the cold-dark matter models of... formation.’ (West et al. 2004)

Medieval inner landscapes, and textiles, texture, topography

- ‘The language of inner alchemy strike and outsider as that of a fanciful and poetically imagined cosmic body populated with spirits and animals, buildings and roads, streams, peaks and valleys, in a topographical landscape of the interior traveller’s voyage into a fantastical realm. However, Yuan Huang shows how the alchemical body was mapped precisely onto the medical one of circulation channels and zang and fu organ systems... and how the poetical inner journeys were correlated with body states imagined in concrete somatic terms. [...] The most profound metaphor was gestation and... embryo.’ (Furth 1999 pp.198-199)

- ‘The term ching is of textile origin, and signifies the warp threads of a web and their adjustment. An easy application of it is to denote what is regular and insures regularity.... The term shu simply means writings or books: the pencil speaking. It may be used of a single character or of books containing thousands of characters.’ (Waltham 1971 Shu Shing p.249)

- ‘The term jie recalls the idea that the qi is comparable to a twisted thread, forming in the body a real net of vertical and horizontal threads. This is why it is said that the qi... can turn into knots, generally as the effect of a battle between two elements. Yunjie characterises the process of formation of pus.’ (Despeux & Obringer 1997 p.100. see also Despeux & Obringer 1997 p.37). [ ‘Le terme jie renvoie à l’idée selon laquelle le qi est comparable à un fil torsadé, formant dans le corps un véritable filet de fils verticaux et horizontaux. C’est pourquoi l’on dit que le qi... peut se noyer (jie), en général sous l’effet d’une lutte entre deux éléments. Yunjie caractérise le processus de formation du pus.’]

- ‘By the reading of these [ritual texts] properly, those devotees [or yogis] who are advanced in understanding can make the best use of the transference at the moment of death. They [...] will depart by the Great Straight-Upward [Path]. Others [...] will go by the upward [course]. [...] There being several turning-points, [...] But those of very weak karmic connexions, whose mass of obscuration is great [...] have to wander downwards and downwards to the Sidpa Bardo.’ (Evans-Wentz 2000)

- ‘Thinkers classed as philosophical Taoists [...] share one basic insight — that, while all other things move spontaneously on the course proper to them, man has stunted and maimed his spontaneous aptitude by the habit of distinguishing alternatives, the right and the wrong, benefit and harm, self and others, and reasoning in order to judge between them. To recover and educate his knac
he must learn to reflect his situation with the unclouded clarity of a mirror, and respond to it with the immediacy of an echo to a sound, or shadow to a shape.’ (Graham 2001)

**Shapes & patterns**

- ‘Cheng’s stories [physician practicing in the 1610’s and 1620’s]… exposed a gulf between one expert’s readings… and sufferers experiencing these in terms of a [learned] phenomenology… or sensations. […] Illness, as experienced and described by the sufferer in the language of symptoms, had to be renamed – converted through pattern analysis into “disease”, a medical diagnosis that unlocked the key to a therapeutic strategy.’ Note 14 by Furth: ‘Here I am applying the medical anthropologist’s distinction between “illness” as a subjective-experiential perspective and “disease” as an expert’s explanatory model of a disorder. See Good 1994: 53.’ (Furth 1999 pp.238-239)

- ‘Gelhorn’s unaccountable neglected theory of ergotropic-trophotropic processing’ (Laughlin et al 1990 p. 296)

‘Very simply, one may meditate upon portal symbols in a disciplined way (i.e., generate a willful semiotropism) and explore the experiences that arise from concentration. Those experiences may then be treated as data concerning the “meaning” or intentionality of the portal symbols (i.e., semiosis). However the experiences arising for the anthropologist are not necessarily the same as for the native practitioner. […]’ A very common theme in ritual and visionary reports is the passage from one realm of reality to another through a symbolic limen, or portal (see Turner 1974,1979,1982). This process is experienced typically as the passage through a door, mirror, hole or tunnel, to emerge, like Alice stepping through the looking glass in an alternative reality. We have termed this experience portalizing, and the symbols and instruments used ritually to evoke the experience as portal symbols (see MacDonald et al. 1989). Many objects may be used as portal symbols in ritual, including mirrors, gems, and crystals, skyring bowls and pools, cave mouths and doorways. We consider portal symbols and, and practices accompanying them to be thoroughly archetypal, as such we may expect them (1) to be universal, or nearly so, in the mytheopia of cultures valuing experience of multiple realities; (2) to be utilized cross-culturally in a similar manner within the context of ritual practice; and (3) to evoke under proper conditions similar experiences cross-culturally. In particular, we hypothesize that portal symbols will penetrate to the neurocognitive structures controlling the entrainment phases of consciousness and will produce often profound reentrainment of those systems. In other words, portal symbols produce warps in consciousness….Metaphorically speaking, portal symbols are precisely like doors between rooms…If we conceive of the rooms as relatively durable phases of consciousness then the doors are warps… additional symbolism pertains to the relationships between rooms and to ways of moving between rooms. We are suggesting that transformational symbols have predictable forms cross-culturally because of their efficacy in penetrating to the mechanisms that produce reentrainment of neurocognitive systems mediating the play of experience unfolding in the sensorium. Furthermore, by directing a practitioner’s attention to the warp between phases of consciousness, portal symbols result in opening up the warp to awareness and thereby to cognitive restructuring as a phase.’ (Laughlin et al 1990 pp.326-7)

- ‘A notation for cross-level analysis is presented. […] It is a truism that all of our environmental scanning (ES) is undertaken through perceptual filters. These filters are mostly not conscious, but act as pre-conscious conditioners of what we see. […] With a better understanding of what we do and don’t allow ourselves to see, we can take steps to consciously widen and deepen our scanning frame. Such a scheme also provides a basis for analyzing both the approach to and results of scanning activities (our own and that of others). […] the spirit of ES, which attempts, in a sense, to “cover the world”.’ (Voros 2001 p.3 see <PPT2 Models collected>) ‘One interpretation of the integral model is that human evolution may be conceived as an expression of the unfolding of the basic structures of consciousness (… or deep structures…) … express potentials not given. Therefore in this view the overall shape of the future unfolds as a particular expression of latent deep potentials which allow for many possible futures to emerge “on top”. This means that the integral model may also be viewed as a model of macrohistory.’ (op.cit. p.7) ‘views of the world and….ways of thinking and perceiving. Beck and Cowan commonly express this as describing the containers that shape world views, not the contents that fill them. […] SD models the evolution of human cognitive capacities in terms of a spiralling double-helix.’ (op.cit. p.8) ‘The SD structures […] tend to become more expansive and able
to perceive a wider and broader world space the later they are in the sequence.' [...] We are now faced with the choice of whether to treat the further levels as four structures (psychic, subtle, causal, non-dual), two structures (soul, spirit) or just one (such as transpersonal). (op. cit. p.13) 'I will use a single explicit scanning level, 'transpersonal' which has nodal designator 'TRANSPERSONAL' or simply .....it stems from the presence of transpersonal waves.' (op. cit. p.14) 'I will describe a short-handed notation for showing subject-object, locations in a cross-level analysis (....) present-day futures work (....) “lines” would correspond to the horizontal “breadth” typologies of STEEP factors' (op.cit. p.16) ‘many different lines of development’ (op. cit. p.18) 'Each of the STEEP factors ..can be conceived of as a type of development line ... perhaps as a cluster of closely related lines, it is but a small step....'. (op. cit. p.19) ‘It’s all about filters... that are not conscious; they act as pre-conscious conditioners of not only what we do see, but also what we can see. [...] The framework presents an analytical tool (cross-level analysis) for examining world-views in terms of both the subject doing the viewing and the level of reality (object) being viewed as well as a notational system to describe it.’ (op. cit. p.20)

• ‘Logic and interaction: Toward a geometry of cognition' (CNRS 2006)

**Hexagone and interaction: most stable physical shapes**

• ‘Aromatic Compounds are ring compounds with a benzenoid structure (i.e. have a ring structure of six carbon atoms, with alternating single and double bonds), or those resembling benzene in chemical behaviour. The simplest aromatic compound is benzene, C₆H₆. Although aromatic compounds are unsaturated, they do not readily undergo addition reactions, instead undergoing electrophilic substitution to preserve the stability of the aromatic ring. Aromatic compounds readily undergo substitution reactions that preserve the aromatic structure of the ring. Aromatic stability is explained by resonance.’ (O’Leary, Donald, 2000, see also Budwig’s work)

• ‘Scale and proportion: do the mechanisms of planar polarity also help determine the shape and sizes of animals? [...] Could the cell aslo measure the amount of the difference across itself?’ (Lawrence 2004)

• ‘The Rugosa are an extinct group of corals (...) solitary rugosans are often referred to as “horn corals” because of their characteristic shape [...] although technically all rugose corals were solitary animals, some grew in groups [...] formed mound shaped fossils... In rugose mounds, each tube or corallite skeleton has its own skeletal wall, [...] ‘Rugose is the technical term meaning that a surface is wrinkled. Corrugate (or corrugated) is a synonym. Rugulose means finely or slightly wrinkled; as used in this website, it refers to the sort of slight puckering [textured] that paper exhibits when it has been wetted and then left to dry. [...] ‘Skeletal Structures: The typical corallite will display a cup shaped, hollow depression (calice) in the top of the corallite skeleton which is a mould of the base of the soft-bodied polyp. An internal set of thin, vertical, radial partitions (septa) which reflect the pattern in which the folds of the internal wall of the soft bodied animal were arranged. Rugose corals begin their growth from the larval stage with six major septa [...] after which new major septa appear in only four locations as the coral expands upwards, thus creating a distinctive bilateral symmetry. A second set of usually very short, minor septa which alternate with the major septa, usually being restricted to the peripheral zone of the corallite. The extent of septal development is highly variable, changing from minor extensions arranged around the periphery of the skeleton to the stage where all the major septa extend to the centre of the corallite where they may also twist into an axial vortex. In some cases the axis of the corallite may be occupied by one of more thickened septa forming an axial rod (columnella). Numerous horizontal, domed or depressed plates (tabulæ) which extend across the central part of the corallite (tabularium). These represent the upward, staged migration of the base of the polyp calice as the corallite grew to the adult stage. A set of small bubble-like plates (dissipements) arranged around the periphery (outer margin) of the skeleton (dissipementarium). Disseipment may be located between the radial septa or they can expand in various ways to take over the whole of the marginal zone of the skeleton.’ (Oliver & Coates 2005)

**Challenge to theories of evolutionary jump & progression line**

• ‘We need not follow either the historians of the ancient world who seem to feel that there is no real need to explain the apparently abrupt rise of civilisation in Egypt, or take recourse to the equally
unsatisfactory speculative approach which wishes to build castles in the sands of Egypt.’ (Rudgley 1999 p. 14)

‘Searching through the historical record for the origins of the evolved civilisations, I was disturbed by the series of “suddenlies”. Science, that is, formal science, had begun “suddenly” with the Greeks; in a less philosophically coherent way, bits of near-science, mathematics, and astronomy, had appeared “suddenly” among the Mesopotamians, the Egyptians, The early Chinese… Civilisation itself … writing… agriculture… the calendar… art… modern Homo sapiens man – as one theory has it – walked into Europe to displace Neanderthal man.’ (Marshack, quoted in Rudgley 1999 p.101)

• ‘The fibers making up any sensory system in the spinal cord come from the same cells as do the fibers in peripheral nerves yet severed nerve fibers in the adult spinal cord do not regenerate but damaged peripheral nerves – those in the extremities – do heal themselves. Why should spinal cord regeneration be an issue, why should an inhibiting protein have evolved to prevent it and what causes this protein to be expressed?… (1) The model of the neurons as wires is too simplistic. (2) In humans the ‘map’ of individual connections is (topologically, at least) locally variable, though the overall global topology and “functionality” of each normal spinal cord is constant. Both of these issues have to be addressed if functional restoration is to be achieved.’ (Aaron) ben 2000 p.597)

• ‘The study of art has been plagued by our desire to see this essentially human skill in a progressive evolutionary context: simple artistic expressions should lead to later, more sophisticated creations. […] Yet… the evidence increasingly refuses to fit. Instead of a gradual evolution of skills, the first modern humans in Europe were in fact astonishingly precocious artists. […] for example,… from the first charcoal animal drawings to the more recent multicolour animals drawn with a clear sense of perspective at famous sites such as Lascaux and Altamira… And yet the beautiful multicolour horses, lions and mammoths at the Grotte Chauvet,… dating from 32,400 years before present, are now thought to be the oldest examples of cave art in the world…. The archaeological evidence is now forcing us to come up with new timescales for cultural change and innovation. This is a challenge that makes the smallest finds of archaeology as important as the largest.’ (Sinclair 2003)

• ‘The Ladder or Linear March of Evolution: …The most serious and pervasive of all misconceptions about evolution equates the concept with some notion of progress, usually inherent and predictable, and leading to a human pinnacle. Yet neither evolutionary theory nor life’s actual fossil record support such an idea. Darwinian natural selection only produces adaptation to changing local environments, not any global theme of progress. (Gould, 1995 p.42-43)

**Challenge to theories of growth of bodies: baby as foreign ‘graft’**

• ‘From the viewpoint of genetic biology, a child is a new life with the same number of genes coming from both parents; only half of the child’s characteristics belong to the mother. Therefore half of their child is a stranger for both his mother and his father.

Fetus Grows up in His Mother's Womb as Graft: Although pregnancy is a natural event, there is an uplifted immunological theory behind it. An ovum fertilized by a sperm incorporates the father's genes; so the half of the embryo is not related to the mother. Therefore antigenic substances of the father, not the mother, are expressed on the surface and organic structure of the child's cells. The maternal immunity system should encourage immune responses to those expressions. However, the phenomenon is supposed to be immunological paradox because the mother can bring up her baby properly for as long as 40 weeks. […] Once the immunological phenomenon under pregnancy is clarified, it can offer an important clue for the development of necessary immunological suppression for renal and other types of transplantation. It is even said that mother-child relationship in pregnancy is established while fighting with immunological rejection which is providence of nature. […] Graft and graft rejection: Transplantation is a process to take living tissue or an organ from a living body and implant it in another part of the body or in another body. The transplanted tissue or organ is called graft… Rejection occurs when the graft cannot be successfully transplanted due to an immune response.’ (Child Research Net 2005)
Text extracts F8 – ‘Establish’: forms of stability

The following extracts display some of the various ways of ‘establishing’. This is a connective approach to the same problems that are approached in terms of motions in the various forms of ‘stability’, including cycling, multi-stability and meta-stability (stable path) (see <Extracts F7\ Landscapes>). ‘Establish’ and ‘stabilise’ are symmetric approaches. As a rule of thumb, we tend to try to solve the problems caused by establishment through destabilisation, and those caused by stability through unbinding, flowing. The ‘advanced’ forms of both combine to rely on quantic jumps, nexial (operational boundary breaking) or topographic (connective boundary making), which are the source of periodic instability. The latter is ‘built-in’ reality (or space), through the conventionalisations of our normal and extra-ordinary topologies. The common resulting problems (wasting, consumption) are resolved only either locally or globally (not both) through return… and restarting the whole deployment, thus yielding endless repetition but there is another hidden cost: a progressive, hidden, global loss of integrity and local loss of sensitivity. These deployments (both generative and degenerative) can be modelled with nexial-topology, but the literature only ever deals with one of the two sides of the symmetry, as the following extracts show. This undifferentiated problem is visible throughout our written history: it has plagued us since much before our ‘recorded history’ began.

Forms of stability

• ‘From the Latin resilire: to jump back, recoil; Physics: the ability to return to an original shape or position after compression, bending or stretching; Psychology: rising readily again (to be cheerful) after being depressed or emotionally challenged; Ecology: capacity of systems to absorb (and even benefit from) disturbance and reorganise while undergoing change so as to still retain essentially the same functions, structure, identity and feedbacks. As social ecologists..., with our concern for considering the personal, socio-cultural, ecological and ‘spiritual’ (and unknown / mysterious), and the complex interrelationships between them, we tend to expect that phenomena recognised in one area have parallel phenomena (in possibly all) other areas; so it is with ‘resilience’, which incidentally may be linked to “good” and “evil” [...] In 1973, the Canadian biologist Buzz Holling...in an effort to distinguish the nature of stability in ecosystems (characterised by persistence, change and unpredictability) from the common understanding of stasis (which tends to emphasise efficiency, constancy and predictability) proposed using the term resilience... to describe the adaptive ability of ecosystems to remain stable while also evolving. Thus, whereas the common understanding of stability assumes a
single equilibrium state that a system must return to after disturbance, in ecosystems there can be diverse equilibria, which emerge through interactive and co-evolutionary changes across all levels (scales: from sub-atomic to cosmic).’ (Hill 2005)

- ‘We see then that there are numerous undesirable consequences of accepting the position that inquiry can be and is value-free. It ritualizes the process of inquiry; it arbitrarily limits the range of admissible knowledge – that is, knowledge open to the inquiry process, it can give the appearance of coherence ...’ (Lincoln * Guba 1985, p.173).

In naturalistic inquiry', in the 'constantly emergent design, the iterations are repeated ... until ... the theory is stabilized and the design fulfilled to the extent possible in view of ... constraints'. (op. cit., p. 188)

'The theory that emerges will be consistent (necessarily) with the methodological paradigm that produced it.' (op.cit. p. 238)

- ‘Multistability, the capacity to achieve multiple internal states in response to a single set of external inputs, is the defining characteristic of a switch. Biological switches are essential for the determination of cell fate in multicellular organisms, the regulation of cell-cycle oscillations during mitosis and maintenance of epigenetic traits in microbes.’ (Ozbudak et al. p 737)

- ‘Multiple stable states or alternative equilibria in ecological systems have been recognized since the 1960's in the ecological literature. Very often, the shift between alternative states occurs suddenly and the resource flows from these systems are modified. Resilience is the capacity of a system to undergo disturbance and maintain its functions and controls.’ (Martin 2004)

- ‘Human diseases characterised by insoluble extracellular deposits of proteins have been recognised for almost two centuries. Such amyloidoses were once thought to represent arcane secondary phenomena of questionable pathogenic significance. But it has now become clear that many different proteins can misfold, [...] in diseases such as] Alzheimer’s and Parkinson’s diseases. [...] There are many examples of... proteins... that can be converted in part to highly stable extracellular fibrils. [...] There is a prolonged preclinical phase during which proteins misfold, build up ... A portion of this long prodrome derives from the energetic barriers to the formation of misfolded species, including the fact that nucleation – the initial development of very small, metastable oligomers of a protein – is a kinetically unfavourable requirement for fibrillogenesis. It seems that time, rather than great age, is required in that some aggressive protein-folding disorders can occur in young and early middle-aged individuals. [...] In some systemic amyloidoses, the basis... is a perturbation in its clearance. [...] A principal unanswered question... is the precise manner in which natively soluble proteins... undergo partial unfolding and aberrant refolding to produce highly stable... [...] Conditions of heat denaturation that lead to fibril formation ... heat-driven unfolding process [...] molten-globule-like... seed... hydrophobic core, pre-fibrillar assemblies [...] For example... in which the protein ... bears long glutamine repeats... neurons showing early inclusion formation are more resistant to... death. In this sense, inclusions of a misfolded protein might be protective because they sequester the aggregates, at least temporarily. This work and similar approaches... remind us that... powerful compensatory mechanisms – such as activation... – can decrease the accumulations of misfolded... or else enhance their clearance. [...] The insidious accumulation of misfolded proteins has dire consequences for the organism. Further progression on the two key questions – how soluble proteins begin to misfold and how the resultant oligomers initiate cell dysfunction – will offer exciting prospects for specific molecular interventions.’ (Selkoe 2003)

‘Establish’ in archaic and medieval ‘advanced’ knowledge

(See also in Appendix A, <Table9\ Nexial-topologic vocabulary>, lines: \ land altar, table, tabernacle, stablished, \ gather, \ water(s) and link to gravity-graveness)

- ‘All this order and arrangement the goddess first imparted to you when establishing your city’ (Plato, Timaeus)
• ‘According to a Syrian tradition, Paradise was… established on a mountain higher than all others.’ (Eliade 1954 p.16)

• In the biblical Old Testament:
  ‘establish justice in the gate’ AMOS 5:15
  ‘to establish a weight for the wind’ JOB 28:25
  ‘You have appointed them for judgement; O Rock, you have marked them for correction.’ HAB1:12
  ‘For the vision (is) (yet) for (an) appoint(ed) (time).’ HAB 2:3
  ‘…appoint for themselves one head; \ And they (shall) come up out of the land, \ For great (will be) the day of Jezreel!’ HOS 1:11

• ‘If learners in the world establish discipline, maintain stabilization, and produce the light of wisdom, by these three powers they can last forever, treading the movements of energy light and clear, stabilizing transformation so as to transcend to immortality. […] The true director of the infinity of the two mysteries of the right and left disseminates our Way among celestials and humans, inducing them to abandon deeds that cause impermanence and enter the subtlety of true unity, neither ageing nor dying, peacefully existing forever’ (Cleary 2000 p.435, Unexcelled true scripture of inner experiences of jade purity, poem attributed to Sun Bu Er)

• ‘...in the Historical Records: “And now, when Your Majesty has consolidated the empire and, distinguishing black from white, has constituted a stable unity...”’ (Waltham 1971, Shu Shing p.255)
  ‘Find your repose in your proper resting point. Attend to the springs of things, study stability, let your assistants be upright; then shall your movements be grandly responded to as if the people only waited for your will. Thus you will brightly receive the favor of God. Will not heaven renew its appointment of you, and give you blessing?’ (op. cit., Shu Shing p.32)

• ‘We must deal cautiously with the favoring appointment of Heaven, at every moment and in the smallest particular.’ Says the sovereign Shun whose function before reigning was to be the ‘Grand Regulator.’ (op. cit., Shu Shing p.35)

• ‘A lapse […] in the cyclical intercourse between the heavenly and the earthly energies […] occurs when the[se] influences are off track: that is, they either do not depart on time or appear on time; the result is then instability in nature and disease in human beings.’ (Ni 1995, Neijing Suwen p.277)

• ‘... biblical names are often used symbolically, including that of Israel ’ (Vermes 1987 p.30)
  ‘When these [the 3 priests] are in Israel’... shall be established’ (Vermes, p.4) ‘When these [the 3 priests] are in Israel, the Council of the Community shall be established in truth’ (op. cit. p 4)
  ‘The Master... shall teach them the nature of all the children of men according to the kind of spirit which they possess...Those born of truth spring from a fountain of light, but those born of falsehood spring from a source of darkness.... The Angel of Darkness leads... astray... But the God of Israel and his Angel of Truth will succour all the sons of light... For it is He who created the spirits of Light and Darkness and founded every action upon them, and established every deed (upon) their (ways).’ (op. cit. p.43)

• ‘ appointed times and seasons and ways for the heavenly bodies’ (Kieffer 2000 p.60)

‘Establish’ in modern ‘advanced’ knowledge

• ‘The habit of repeating the same matter under different symbols, and so of presenting it from different points of view, is a very noticeable formality of biblical apocalyptics, and yet it has been strangely ignored by many expositors. […] All such apocalyptic repetitions serve the twofold purpose of intensifying the divine revelation and showing that “the thing is established by God, and that he will shortly bring it to pass.’ (Terry 1898)

• ‘The Princeton Engineering Anomalies Research (PEAR) program was established to pursue rigorous scientific study of the interaction of human consciousness with sensitive physical devices, systems and processes common to contemporary engineering practice and is developing complementary theoretical models to enable better understanding of the role of consciousness in the establishment of physical reality’. (PEAR 2002)
• ‘Axis formation occurs in plants, as in animals, during early embryogenesis. However, the underlying mechanism is not known. Here we show that the first manifestation of the apical-basal axis in plants, the asymmetric division of the zygote, produces a basal cell that transports and an apical cell that responds to the signalling molecule auxin. This apical-basal auxin activity gradient triggers the specification of apical embryo structures and is actively maintained by a novel component of auxin efflux, PIN7 and onset of PIN1 polar localization reorganize the auxin gradient for specification of the basal root pole. An analysis of pin quadruple mutants identifies PIN-dependant transport as an essential part of the mechanism for embryo axis formation. Our results indicate how the establishment of cell polarity, polar auxin efflux and local auxin response result in apical-basal axis formation of the embryo, and thus determine the axially of the adult plant.’ (Friml et al. 2003)

• ‘The Electronic Ear lifts inhibitions immediately establishing effective vocal self-control or self-listening, […]the electronic ear plays the part of the conductor of an orchestra. by adapting the student’s listening to information…it regulates and the ear is guided by the Electronic Ear until it is automatically regulated…the act of teaching…is complementary to this auditory training approach.’ (Tomatis 1991 p.87)

• The ‘idealizing primal establishment of the meaning-structure “geometry” ’(p.180)

• ‘When the ergotropic system is activated, the entire body/mind becomes aroused. By comparison, the trophotropic system is “wired” for the fine tuning of organs in relation to each other as the demands of internal maintenance shift and change…The point to emphasise is that whereas the trophotropic system is designed for continuous activity, We are “wired” for short, infrequent bursts of adaptive activity interspersed with relatively long durations of rest, recuperation and growth…Prolonged ergotropic reactivity may cause depletion of vital resources stored by the trophotopic system in various organs, and may cause fatigue, shock, body damage, and in extreme cases, death (Selye 1956; Antonovsky 1979)… The particular balance of ergotropic and trophotropic activities under particular environmental circumstances is susceptible to conditioning… and there is evidence that their characteristic balance under stress is established as early as pre-and perinatal life (Grof 1976; [etc.]). ’ (Laughlin et al 1990 p. 316)
Text extracts F9 – Deep Confusing Questions

In the course of a cross-field study of the scientific and human domains, one encounters some great questions that ‘affect all’, including daily living. Many authors turning to philosophy tend to have a bias on such questions, and present their ‘general’ answers (local to the world they see) through sweeping statements about their universal applicability, as great Truths, absolutes, ultimate Realities, or as potentials and ‘possibles’ for all to seek. Alternatively, out of humility, some present their answers as one little corner of a great ‘mystery’ that can never be fully known (it is approximate and uncertain). I have dubbed such questions ‘deep confusing questions’. The word ‘confusing’ indicates that trying to obtain a wholistic ‘big picture’ of the question by reviewing all the perspectives only creates confusion, if the conventions of representation are not addressed. The word ‘deep’ relates to the term ‘depth’ often attributed to the core of experience, the ‘fundamental’ questions of science ad philosophy, and to the ‘not well understood’, the ‘lost’ (this is symmetric to the Scientific ‘breadth’ and its ‘hidden’). To these questions, I answered this:

- ‘Toe conclusion imposes itself that such frameworks as East-West-South-North (the Earth) and other perspectives develop topologically from a less differentiated way of apprehending situations, an undifferentiated global ‘place’ This word, ‘place’, is very common in ancient sacred texts and in modern daily life parlance alike. I propose that it may be understood as a topologic space. Therefore, its global or universal properties are relative to the local human instrument that apprehends them. On top of that, comes the biased perspective of limited, conventionalised observation.’ (Bouchon, May 2005, personal communication)

Below are some of the questions as formulated in the literature.

The mysterious, the spiritual

- ‘considering the personal, socio-cultural, ecological and ‘spiritual’ (and unknown / mysterious), and the complex interrelationships between them’ (Hill 2005)

Obscure and cryptic terms: the Above & Below, Gathering & Return

- ‘5. And they have stretched their cord across the void, and know what was above, and what below. Seminal powers made fertile mighty forces… ‘Below was strength, and over it was impulse.’

* This stanza is obscure. A. A. Macdonell suggests that the ‘cord’ (rashmi) implies the bond of the preceding stanza; thought measures out the distance between the non-existent and the existent and separates the male and female cosmogonic principles: impulse (prayati) above and energy (svadha) below. (A Vedic Reader for Students, London: Oxford University. 1917, P. 210.)’ (Who can say whence it all came from, Rig Veda, X, 129, in Eliade 1996)

- ‘The Ti said, Alas! what are ministers? -- are they not (my) associates? What are associates?--are they not (my) ministers?’[...] I wish to spread the influence (of my government) through the four quarters;-- you act as my agents. I wish to see the emblematic figures of the ancients,--the sun, the moon, the stars, the mountain, the dragons, and the flowery fowl (= the pheasant), which are depicted (on the upper garment); the temple cups, the pondweed, the flames, the grains of rice, the hatchet, and the symbol of distinction, which are embroidered (on the lower Garment),--(I wish to see all these) fully displayed in the five colours, so as to form the (ceremonial) robes.’ (Legge 1879)
• “The Classic says: women are a gathering place for yin influences, dwelling in dampness. Form the age of fourteen (sui) on, their yin qi wells up and a hundred thoughts run through their minds, damaging their organ systems within. [...] Sometimes as they relieve themselves at the privy above, Wind from below enters, causing the twelve chronic illnesses.” (Furth 1999 p.71 – see also Christian notion of ‘recollection’)

• “Return to Me, and I will return to you, Says the Lord of hosts, “But you said, In what way shall we return?” MAL 3:74

**Whence from? Who knows or remembers?**

• “Then ἐὰν nothingness [asat] was not, nor existence [sat]. There was no air then, nor the heavens beyond it. What covered it? Where was it? In whose keeping? [...] ‘But after all, who knows, and who can say whence it all came, and how creation happened? The gods themselves are later than creation, so who knows truly whence it has arisen? (Rig Veda, X, 129, v.6, in Eliade 1996)

• “Afternoon came, and I meditated a little, but the same naked woman appeared. [...] As soon as I sat down, my meditation would start with full force... Almost immediately I was deep in samadhi and then suddenly full of sexual desire. The naked woman pursued me and stood before me... God knows where she came from; no one had invited her. She did not ask anything from me. She simply ruined my meditation, disturbed my sex organ...’ (Muktananda 2000 p.108-9 – see <Extracts F14> ‘Mysterious Female’)

• “After these soliloquies, both heroes [Ageno and Hector, in the Greek Iliad poem] exclaim precisely the same astonished words: “But wherefore does my life say this to me?” If, indeed, such talks to oneself were common, as they would be if their speakers were really conscious, there would be no cause for surprise. [...] The earliest writing of men in a language that we can really comprehend, when looked at objectively, reveals a very different mentality from our own [...] and points back to a very different kind of human nature. We may regard the Iliad as standing at the “great turning of the times” and a window back into those unsujective times when... every man was the slave of voices heard whenever novel situations occurred.” (Jaynes 2000 p.83)

• “Where do the 4 directions of the universally accepted frame of geographical Earth come from? The 6 directions of the 3D space can be related to the body, but not just 4, even less 5. I am told to explore traditions and particular cultures — each with all sorts of fancy correlations or correspondences that can’t be made to match. How did we invent the 4 flat directions? Where did the traditions get the East-West-South-North from? They say from Heaven, the gods, or from one ‘Full Human’ hero... who dreamed up ‘Nature’, the ‘Earth’ or ‘The World’, invented Time, or created the ‘Life’ of ‘Humans’.... But how did he or she, how does a human get such ideas or pictures? I am back to my original question about the physical reality of my body and the ‘natural survival’ world that humans see! The only way to track back any further is through the ‘obscure’ shape-images of the Earth framework.” (Bouchon, March 2003, personal communication)

**Where or what is that ‘place’?**

• “And where is the place of understanding? Man does not know its value. Nor is it found in the land of the living. The deep says “[it is] not in me’. And the sea says “not with me’. [...] It is hidden from the eyes...’ JOB 28:12-14 & 21

• “And there is a third nature, which is space, and is eternal, and admits not of destruction and provides a home for all created things, and is apprehended without the help of sense, by a kind of spurious reason, and is hardly real; which we beholding as in a dream, say of all existence that it must of necessity be in some place and occupy a space, but that what is neither in heaven nor in earth has no existence. [...] Of these and other things of the same kind, relating to the true and wakening reality of nature, we have only this dreamlike sense, and we are unable to cast off sleep and determine the truth about them. For an image, since the reality, after which it is modelled, does not belong to it, and it exists ever as the fleeting shadow of some other, must be inferred to be in another [i.e. in space ], grasping existence in some way or other, or it could not be at all. But true and exact reason, vindicating the nature of true being, maintains
that while two things [i.e. the image and space] are different they cannot exist one of them in the other and so be one and also two at the same time.’ (Plato, Timaeus, Second Main Section, no.20)

‘If the universal frame had been created a surface only and having no depth, a single mean would have sufficed to bind together itself and the other terms; but now, as the world must be solid, and solid bodies are always compacted not by one mean but by two’ (Plato, Timaeus, First Main Section, no.5)

- ‘[248b] But the reason of the great eagerness to see where the plain of truth [pedion [plain] Alétheias [truth]] is, lies in the fact that the fitting pasturage for the best part of the soul is in the meadow there, and the wing [248c] on which the soul is raised up is nourished by this. And this is a law of Destiny, that the soul which follows after God and obtains a view of any of the truths is free from harm until the next period,’ (Plato, Phaedrus 248b,c)

- ‘Who could understand what the Mysterious Pass is? Few genuine qigong masters understand it.’ [...] ‘Nobody could explain clearly why the Buddha sits inside the circle. Let me tell you that this is... the Mysterious Pass... It is called a world.’ (Li Hongzhi 1998)

- ‘Ever since the discovery of the kinship between the various Indo-European languages, scholars have puzzled over the original homeland of the Indo-European speakers. The similarities in their various languages pointed to a common ancestral language, and divergences were explained as the result of migrations from a shared place of origin.’ (Feuerstein, Kak & Frawley 1995 p.52)
‘By comparing phonetic and grammatical changes in diverse Indo-European languages, scholars have invented a series of hypothetical steps, suggesting a certain sequence among the languages involved. Moreover, reconstructing the lost Proto-Indo-European mother language...’ (op.cit. p.56)

**Is it real?**

- ‘Only the action of the six derived trigrams is described here [section 6]. It is the action of the spiritual, which is not a thing among things, but the force that manifests its existence through the various effects of thunder, wind and so on.’ (Wilhelm 1989 I Ching, Shuo Kua section p.272)

- ‘The Buddha, considered as a spiritual principle and not as a historical person, is called 'Tathagata.' The original meaning of the term is no longer known.’ (Saddharmapundarika,’ XV, 268-72, introduction and transcript in Eliade 1996)


**Left and Right** (see also<Extracts F10\ Left- and Right->)

- ‘The true director of the infinity of the two mysteries of the right and left disseminates our Way [...] The one spirit pervades transformation, crystallizing and refining the original reality. The original reality is not something with form: It is neither existent nor non-existent.’ (Unexcelled true scripture of inner experiences of jade purity, poem attributed to Sun Bu Er , in Cleary 2000 p.435-6)

**‘The Red’ and other colours** (see also<Extracts F11\ Red>)

- ‘... to lift the veil which the goddess [Isis] herself had boasted no mortal had ever withdrawn. To a student of Gnosticism, the Veil of Isis is one of the greatest enigmas, a mystery that is, perhaps, as profound as the Law of the Red Heifer...' (Kieffer 2000 p.xix)

- ‘Beheading the red dragon’ [of menstruation] (Furth 1999 pp.219-220)

- ‘In the first chariot were red horses and in the second chariot black horses, with the third chariot white horses, and with the fourth chariot dappled horses — strong steeds, ... what are these...?’ 2EC 6:2

**Questions of Origin**

- ‘Did agriculture spread through diffusion or independent development? Are there any reasons why religion and magic might have been more important for the people of early Neolithic communities that they had been for their Palaeolithic ancestors?’ (Nelson 205)
• ‘How did Egyptians find that the Pi relationship between the R-circumference (perimeter) of a circle and the L-diameter of that same circle remains constant, regardless of how big or small the circle? […] How did they know it was close to 3.16?’ (Cooper, L. 1999)

• ‘Native American Geometry is a physical, proportional geometry that originates from the simple circle… one of the most popular and multi-cultural symbols in the human world. [...] [and its developments are present in] religious symbols, corporate logos, and kindergarten classrooms. Generally, it begins with two points, and is guided by a few self-evident rules [that] maintain a similar methodological structure to the Middle Eastern tradition of classical geometry. [...] ‘Did the geometry have a single source and diffuse around the world over a period of several millennia? Or is there something about it, like stone working techniques, that made it independently accessible to the human mind in diverse cultures and civilizations?’ (Hardaker, 2000)

• ‘Why did humans adopt agriculture when it meant a more laborious life for them, one with less variety and more drudgery, less social communication and more lonely labor, and a poorer diet coupled with a loss of leisure? [...] Agriculture took more time and more energy than hunting and gathering, and yielded a less satisfying diet, a loss of equality between sexes and among individuals, and made war a permanent feature of human life. Why would any people have chosen such an exchange?’ (Nelson 2005)

• ‘Why do scientists grasp the importance of visual imagery, while most humanists accept the hegemony of the word? Scholarly publication in the humanities generally degrades imagery and in many ways. Many thick tomes have no pictures at all… Images when present, are often only “illustrative”, are often collected in separate sections, divorced from textual reference and therefore subsidiary.’ (Gould, 1995 p.40)

• ‘A huge amount of biological information is preserved in the growth records of teeth. Tapping into those records provides a tantalizing look at how quickly Neanderthals grew up and reached maturity. Neanderthals share a more primitive pattern...in which the slowing of enamel extension and crown formation are much less pronounced, indicating that the anterior dentition formed more quickly. Ramirez rozzi and Bermudez de Castro argue that this indication... is further evidence... for placing Neanderthals and modern humans in separate species. [...] The authors go on to make a number of more far-reaching claims [...] and argue for more rapid growth as a whole and earlier attainment of adulthood.... This inference follows from [...] the correlation between dental development and the pace of life history [which] is based on the timing of tooth eruption as opposed to crown formation and [which] therefore also involves root formation, it would be prudent to examine root development in Neanderthal teeth as well. [...] Sequence and timing are not the same thing [...] To account for the apparently overly rapid maturation,... given their large brains, and relying on life-history theory, [the authors] suggest that rates of adult mortality in Neanderthals must have been very high... So it is not clear what to make of the particular expression of these relationships in Neanderthals.... We will need more markers along the way to be fully confident that the trail of inference has reached the right destination.’ (Kelly 2004)

Unclear

• ‘Just what holism and nonseparability are supposed to be has not always been made clear, though, and each of these notions has been understood in different ways. [...] Whether this is true or not depends on whether it is possible to understand the results of simultaneous measurements in quantum field theory as reflecting some intrinsic physical property associated with the disconnected spacetime region occupied by the measurement events.” (section 1) […] It has been maintained that the puzzling statistics that arise from measurements on entangled quantum systems either demonstrate, or are explicable in terms of, holism or nonseparability rather than any problematic action at a distance. (sections 8,9) […] The Aharonov-Bohm effect (section 10) also appears to exhibit action at a distance, as the behavior of electrons is modified by a magnetic field they never experience. [...] According to string theory (section 12), all fundamental particles can be considered to be excitations of underlying non-pointlike entities in a multi-dimensional space.’ (Healey 2004)

• ‘It would be very nice if the gods all wanted the same thing and could work together in perfect harmony. There is harmony, but not to our ears.’ (Sherman 2000)
Text extracts F10

Left and right: two ‘hands’ of quickening

‘Left’ and ‘Right’ are known to be important properties of the brain, with consequences for both experience and explanation. Left and right are intimately linked with the general value of optimisation or improvement of human living, and are of major importance in the syndromes of instability. The understanding of left and right as a topologic property of a human lifeworld (bending, twisting) is very confused by the multiplicity of views, as SunBu Er’s and Job’s biblical accounts (below) show. This puzzle still exists in the modern sciences that study physical chirality. The following statements also concern having and not having a left/right preferential mode, the improvement value of this, and the effects on body, mind and lifeworld.

• ‘Laterality –it must be right – ... Children who... are poorly lateralized, and who are emotionally unstable or immature are all likely candidates for dyslexia. There is no reason why the remedy for such deficiencies could not be carried out within the school itself. [...] No doubt someone will ask, “What about the cost?” Surely to humanize a little child and make him into a man is something beyond price! ’(Tomatis 1991 pp.168,169) ‘Mastery of speech greatly depends on lateralization to the right of the audiophonatry circuit. If human beings wish to realize all their potentialities, they must be much more right-eared and right mouthed than left.’ (op. cit. 1991 p.117) “Laterality it must be right” (op. cit. p.153)

• ‘E. Bleuler notes that the child is not a little schizophrenic but a normally functioning though primitive being. “The schizophrenic will regress to, but not integrate at , a lower level; he will remain disorganized” (Arieti, 1959, p. 475). Regression is essentially disintegration of personality, that is dedifferentiation and decentralization.’ (Von Bertalanffy 1968 p.214)

• ‘Thus the pain-response-to-exercise curve was shifted to the right.’ (Eriksson et al. 2000)

• ‘To humans, self-direction appears to be connected with our representation of ourselves being upright. The most elementary self-direction to an adult human being is to the right or to the left, i.e. turning around the spine as a vertical axis.’ (Feldenkrais 1981 p.126) ‘ Form the point of view of Functional Integration, [...] self-direction... has meaning only to a living animal in its environment.’ (Feldenkrais 1981 p.126) [...] ‘... think of the coincidence, fact or design, that all the instruments are serving, connecting our senses to the outside distant world are located in the head. Sight (teleceptors), hearing, smell are directional.’ (Feldenkrais 1981 p.127)

• ‘By contrast, when people are in positive moods, upbeat, enthusiastic and energized - those sites are quiet, with the heightened activity in the left prefrontal cortex... He believes [it] is a quick way to index a person's typical mood range, by reading the baseline levels of activity in these right and left prefrontal areas. That ratio predicts daily moods with surprising accuracy. The more the ratio tilts to the right, the more unhappy or distressed a person tends to be, while the more activity to the left, the more happy and enthusiastic.’ (Goleman 2003)
A matter of orientation and localisation

- ‘To humans, self-direction appears to be connected with our representation of ourselves being upright. The most elementary self-direction to an adult human being is to the right or to the left, i.e. turning around the spine as a vertical axis. [...] all the instruments are serving, connecting our senses to the outside distant world are located in the head. Sight (teleceptors), hearing, smell, are directional.’ (Feldenkrais 1981 p.126)

- ‘In schizophrenia,... In some cases, particularly the most serious, the voices are not localized. But usually they are... In some patients there is a tendency to associate the good consoling voices with the upper right, while bad voices come from below and to the left. (Jaynes 2000 pp.88,89,90)

In the body: ‘rib pain’ on the right side

One common symptom, little mentioned in modern medicine, appears to have been better known in the past: rib pain on the right side (see Despeux & Obringer 1997 pp.91, 92, 100, 104, 156, 216, 245), or ‘pain in the side’ (Furth 1999 p.81). The closest in Western biomedicine appears to be costochondritis, of ‘unknown cause’, common in children and adolescents, and the controversial Thoracic Outlet Syndrome in women. See also illnesses ‘due to worms’ and to ‘wind’ (Despeux & Obringer 1997 p. 73) and ‘water illnesses’ (op. cit. p. 118). There are connections also to medieval female ‘green sickness’ in girls at menarche or ‘White Fever’ (coined by medieval women themselves), which King (2004) has linked to some of the low-grade syndromes (see <Extract F4> Syndromes of instability). ‘Green sickness’ can be ‘cured’ by pregnancy (semantically drifted into marriage – this is a prehistoric behavioural cure strategy already seen as ancient in archaic texts). ‘White fever’ is the most adequate name for a bloodless face and bodily wasting that correlate with reactive, feverish activity, including allergy and periods of ‘histamine flush’ and ‘hot flashes’. Histamine is known to be an ‘integrator’ of the perceptual body schema – ‘body’ as separate from environment, ‘skin encapsulated [Watts, undated]). Gender differences in health are related to hormonal effects, and linked to brain laterisation in many ways, in modern medical explanation and practice. For example, the contraceptive pill is used to correct ‘masculinisation’ and acne in young girls (compare to King 2004). In my experience, such activation that manifests in rib pain also correlates with testosterone increase and ‘masculinisation’ of both body and mind (intellect). My observations suggest that these effects involve also immune activation, with a Left-Right bias. If one accepts the validity of physical health interpretations of the oldest archaic texts, which often involve gender differences, then one-sided sensations in the ribs, related to swelling or inflammation, could be linked to the (semantically very drifted and inverted) biblical story in Genesis. The rib of Adam from which Eve is made, which is related to the ‘Fall of man’, could be a remnant of understanding of global effects (on the human lifeworlds) of activating the body’s vertical axis. The following are extracts related to rib pain.

- ‘At the time these four chambers appear, the heart starts bending into an S shape... This bending occurs because the ventricle and bulbus cordis grow quickly and the heart is unable to accommodate elongation within the confines of the pericardial sac.’ (Marieb & Mallatt 2003 p.538)
• ‘...you shall not turn aside to the right hand or to the left... that you may live and that it may be well with you and that you may prolong your days in the land...’ DEUT. 5:32

• ‘Four simple steps to deep, dreamless sleep: 1. Lie on your stomach and turn your head so that your right cheek is on the pillow. This will automatically free up your left nostril to bring in the cooling, soothing, calming energy. [...] 4.... By the way, it is better for your heart and your digestion to sleep on the right side than the left. Plus, of course, it keeps your left nostril open.’ (Shakti Pawha 1996 p.112)

• ‘Lying towards the right side is favoured because the heart is not obstructed and according to Buddhist medicine it supports a happy peaceful mind, by blocking the right channel. The Buddha passed away lying on his right side... Buddhist scriptures say to block the right nostril with the ring finger, face resting on the right hand.’ (Amithaba Hospice Service 2006)

• ‘And I also have given you cleanliness of teeth in all your cities and want of bread of in all your places: yet you have not returned unto me, saith the Lord’ AMOS 4:6

• ‘In Hatha-Yoga, one technique of meditation consists of breathing in turn through the alternate nostril (pr_an. _ay_ama), apparently to synchronize" the activities in the two hemispheres.’ (Kak 2000)

• ‘The effects of 10 min forced alternate nostril breathing (FANB) on EEG topography were studied in 18 trained subjects[...] suggesting that FANB has a balancing effect on the functional activity of the left and right hemisphere.’ (Stancak & Kuna 1994)

• ‘Alternate nostril breathing (ANB) may modulate cardio-respiratory and autonomic functions. [...]These results suggest that in general there is a tilt towards parasympathetic dominance by alternate nostril breathing. This breathing may be a useful adjuvant to medical therapy of hypertension and COPD.’ (Srivastava, Jain & Singhal 2005)

• ‘There is increasing interest in the fact that breathing exclusively through one nostril may alter the autonomic functions. [...]The 'right nostril pranayama' group showed a significant increase, of 37% in baseline oxygen consumption. The 'alternate nostril' pranayama group showed an 18% increase, and the left nostril pranayama group also showed an increase, of 24%. This increase in metabolism could be due to increased sympathetic discharge to the adrenal medulla. [...]These results suggest that breathing selectively through either nostril could have a marked activating effect or a relaxing effect on the sympathetic nervous system.’ (Telles, Nagarathnam & Nagendra 1994)

• Self-report – ‘Partly hidden upsides to using ROBERTA every day: health: [...] I no longer wake up with clogged sinuses; my body feels relaxed; and free of headaches, my skin is clear, I’m more careful what I eat, I remember to exercise and I put more energy into it.’ (Lifetools, 2005)

• Self-report – ‘One morning I had painfully clogged sinuses. No amount of blowing gave me relief. But two minutes of Qigong had my sinuses draining and completely pain free. For me these common occurrences have made the course valuable beyond estimation.’ (Bissonnette 2006)

• ‘Author and inventor Ray Kurzweil takes 250 supplements each day...his worst sickness in the last several years has been mild nasal congestion.... [His] father and grandfather suffered from heart disease (and he) was diagnosed with type2 diabetes in his mid-thirties [which he] controlled without insulin [with nutrition].’ (Chamber 2005, my italics)

**Setting shield, locating, and ‘vertical power current’: reenter the body**

‘[A book] to look behind the “real” of our present-day ... knowledge. [...] The eighth level shield. [...] The left hand makes an opening for setting the shield... penetrates deep into the body to the root... while the right hand slowly moves it into place... The shield protrudes... slightly angularly out from the body... The left hand... separates the upper anatomical part... from the area where the trauma is located. At the same time, the personal guides of the patient usually take him out of his body to protect and teach him. [...] Any amount of forcing simply disrupts... and forces... to start over. [...] In a sense, in the higher level of healing, the trauma is treated as if it has its won being, since it is an integral piece of energy-consciousness. [...] The shield allows for smooth integration of the change... and prevents any disturbance... which would occur if the patient were no shielded... the cavity is filled... The new... field is ten reconnect to the field around it, all of which is still located under the shield. The open exit
area at the base of the shield is then covered with a... seal. [...] She slowly sinks her right hand... where her left hand... is seated. This releases the left hand, which is then used to integrate the new restructured and shielded area to the rest of the patient’s auric field.... slowly moves the left hand through the upper part..., reconnecting the fields. After setting the shield, the healer then strengthens the main vertical power current... in the body. The patient slowly reenters the body. [...] By the time this was completed, the trauma.... had turned to white light. [...] Healing session format: [...] measure... record... attune and align... align and balance.’ (Brennan 1987 p.231-233)

**The mystery of ‘The Left’ and ‘The Right’**

- ‘The true director of the infinity of the two mysteries of the right and left disseminates our Way [...] The one spirit pervades transformation, crystallizing and refining the original reality. The original reality is not something with form: it is neither existent nor non-existent.’ *(Unexcelled true scripture of inner experiences of jade purity, poem attributed to Sun Bu Er, in Cleary 2000 p.435-6)*

- ‘...human beings who cannot discern their right hand from their left hand’ *JONAH 4:11 (myth from oral tradition of ‘East wind’, edited circa 350 BCE)*

‘Study notes: that cannot discern between their right hand and their left - -children under three or four years old. (DEUT 1:39)’ – Retrieved from:

- ‘and I -- have not I pity on Nineveh, the great city, in which there are more than twelve myriads of human beings, who have not known between their right hand and their left ‘ JONAH 4:11 (myth from oral tradition of ‘East wind’, edited circa 350 BCE)

- ‘that Pan first found out military order & constituted the right wing & the left (whence his effigies was formed with horns... & carried in his hand a sickle’ (Newton 2996a)

**Evaluation (L-sinister, R-dexter)**

- ‘Many peoples of the world consider the left hand a shameful hand. [...] This distinction of the left hand as inferior, or shameful, is an ancient concept that is reflected in today’s Middle East and shows up in Biblical events. [...] this relates to the Old Testament concept of God’s right hand of blessing.’ (Jenkins 2002)

- ‘Only be strong... do not turn... to the right hand or to the left’ JOSH 1:7

- ‘The heart of the wise inclines to the right, but the heart of the fool to the left.’ EC 10: 2

- ‘the right eye and ear are not as strong as the left, and the left hand and foot are not as strong as the right’. (Ni 1995 Neijing Suwen p.23)

- *Ch’i wu lun*, the title of a chapter in the *Chuang Tzu*, is translated as ‘the sorting which evens things out.’ (Graham 2001 p.33)

- Compare to the concepts used by the early Han Syncretists in China:

spontaneous response *(yìng)*, adaptation *(yīn)*, compliance *(hsù)*, suitability *(i)* (Roth 1999 p.196)

- ‘God corrects. [...] He wounds but His hands make whole’ JOB 5:17-18 ‘Behold, I go forward, but he is not there; and backward, but I cannot perceive him: on the left hand, where he doth work, but I cannot behold him: he hideth himself on the right hand, that I cannot see him.’ JOB 23: 8-10 Even today my complaint is bitter; his hand is heavy in spite of my groaning. If only I knew where to find him; if only I could go to his dwelling!’ JOB 23: 2-3 ‘But if I go to the east, he is not there; if I go to the west, I do not find him. When he is at work in the north, I do not see him; when he turns to the south, I catch no glimpse of him.’ JOB 23: 8-10 ‘But he knows the way that I take; when he has tested me, I will come forth as gold. My feet have closely followed his steps; I have kept to his way without turning aside.’ JOB 23: 10-11 ‘That is why I am terrified before him;’ JOB 23: 15 ‘They swing to and fro’ JOB 28:4

[I consider the *JOB* text a ‘perspectivalist’ work, reviewing the same story in various shifted meanings, mentioning the directions of the Earth. Some statements are similar to modern]
complex science: scatter the cloud mass, and to nutrition science: moisture saturates clouds, poisoning of the cloud, etc.]

*The world turns in a counter-clockwise direction with respect to the north-south axis, and this left-turning is also characteristic of living cells. ‘…Children achieving well socially and academically during the developmental years draw circles in a counterclockwise direction with either hand. The tendency to draw circles in a clockwise direction is called torque. Aberrant behavior is found more frequently in samples of children showing torque than in those with no torque. The resulting confusion of mixed cerebral dominance interferes with the child’s acquiring important cognitive, language, and social skills’. (Blau 1977 in Kieffer 2000 p.114)

‘He seals the hand of every man.’ JOB 37:7 [Elihu speaks]

‘He penetrates the left side of the belly. One gets at the very heart of the darkening of the Light.’ [Wilhelm commentary on Ming I: The name of the hexagram means literally “wounding of the bright”; […] We find ourselves close to the commander…” (I Ching, 36. Ming I, Darkening of the Light, in Wilhelm 1989 p. 139)

‘Better is a handful with quietness, than two handfuls with labor and chasing after wind.’ (Ecclesiastes 4:6)

‘…we will not turn to the right hand nor to the left until we have passed thy borders’. NUM 20:17

‘You will show me the path of life; in Your presence is fullness of joy, at thy right hand there are pleasures for evermore.’ PSALM 16:11 [The expression ‘path of life’ is used in Chinese literature as well.]

‘And he causes both small and great, rich and poor, free and bond, to receive a mark in their right hand or on their foreheads.’ REV 13:16

‘Throughout the O.T there is used what are called anthropomorphism to describe God in some function or characteristic. […] The term at the right hand of God points to his exalted position he now is active in. The phrase right hand is a figurative expression […] this is figurative language describing a certain characteristic of God it is describing his divine actions from a human view point.’ (Oppenheimer 2005)

‘The use of this anthropomorphism [‘right hand of god’] occurs in 39 references in the Old Testament. The primary thought behind these passages is it is a “Hebrew Idiom” [that] denotes power and strength.’ (Hughes 1997)

‘If I walk in the midst of distress Thou quickenest me, Against the anger of mine enemies Thou sendest forth Thy hand, And Thy right hand doth save me.’ PSALM 138:7

‘that your own right hand can save you’ JOB 40:14

‘No one (is so) fierce that he would dare stir him up’ JOB 41:10

‘Moses slaughtered the ram and took some of its blood and put it on the lobe of Aaron’s right ear, on the thumb of his right hand and on the big toe of his right foot.’ LEV 8: 23 [Jehovah speaks]

‘Lo, He slumbereth not, nor sleepeth, He who is preserving Israel. Jehovah [is] thy preserver, Jehovah [is] thy shade on thy right hand, By day the sun doth not smite thee, Nor the moon by night.’ PSALM 121:5

‘You have also given me the shield of your salvation, and your right hand has holden me up’ PSALM 18:35.

‘Please let us pass through your country. We will not go through any field or vineyard, or drink water from any well. We will travel along the king’s highway and not turn to the right or to the left until we have passed through your borders.’ NUM 20: 17
• ‘He holds his staff with his right hand and with his left hand he balances on his right shoulder the staff from which the bag is hanging. His head is turned three-quarters to the right. So it is the Fool who has the tendency to the right…. the Fool [clown] of good, not of evil.’ (Powell 1880 in Kieffer 2000 p.590-1)

Modern scientific chirality

Following are quotations that display a large range of approaches to that ‘mystery of the left and the right’.

• ‘A land-snail species of polyphyletic origin result from chirality constraints on mating. […] Speciation accompanying the left-right reversal of the entire ontogeny (chiral speciation) is unique to snails and can be visualized by the coiling direction of their shells. The chirality (or handedness) – occurring as a ‘sinister or ‘dexter’ forms) of snails is determined by the maternal nuclear genotype at a single locus. Because of the physical difficulty of two-way copulation between snails that have opposite coils, frequency-dependant selection iecys to eliminate the chiral minority […] First, the sinistral taxa are all derived from a single sinistral ancestor. Second, reversal to a dextral species from the single ancestor has occurred in at least three independent lineages, third., all of the haplotypes of a dexter E. aomoriensis are included within a sinister E.quaesita. […] Both mitochondrial-DNA phylogeny and a similar shell morphology indicate that E. aomoriensis is derived from E.quaesita. E. aomoriensis is not merely a dextral morph of E.quaesita., as the two differ in shell sculpture although they are partly sympric. We conclude that E. aomoriensis has speciated from E. quaesita by virtue of its chirality […] Chiral reversal is therefore an acute pre-mating mechanism of isolation. Reversal to dextral species has occurred multiple times after only sinistral evolution, so chiral speciation must have been easier to the dexter than to the sinister.[…] Any introgression must therefore have been limited to a short time before chiral fixation. Ancestral polymorphism would not easily survive chiral speciation in small, isolated populations.’ (Ueshima & Asami Takahiro, p.679)

• ‘Glycine R=H the smallest and most flexible amino acid. The only achiral amino acid.’ (Kahn, 2003)

• ‘… not only are the L-amino acids more stable than the D, but the natural D-sugars are more stable than the L, and the right-hand DNA double helix is also more stable than its left-hand mirror image. […] Radioactive beta decay is mediated by the weak force, and this causes a polarization of the electrons emitted in beta decay, which could produce selective destruction of one enantiomer. We are currently starting to develop the theory of this enantioselective beta-radiolysis. […] the highly chiral chlorophyll molecules in vegetation […] the weak force theory of the origin of chirality.’ (MacDermott 2006)

• ‘Consider the ghostly neutrino. This elementary, subatomic particle carries with it not only an uncanny reminder of a time eons ago when symmetries were perfect, but also a clue as to how they came to be broken. For every neutrino that now spins to the left, there was once one that spun to the right: these parallel twins were destroyed in the "Big Bang," that cosmic apocalypse that, most scientists now agree, created the universe. And this decay of symmetry is reflected in the building blocks of organic life as well. The helical structures of our own genetic material spiral to the left; no right-turning counterparts exist. The left hand of creation has a long reach indeed, extending from the beginning of time to the miracles of life we witness everyday. […] We examine the black body radiation still detectable in space today (once the predominant constituent of the universe, now a cosmic fossil of the primeval fireball)’ (Barrow 1994: The Left Hand of Creation)

• ‘The question of how things came to be structured as they now are…As an action, intelligent design entails… the hand-like action of constructing or assembling’ (Van 2003)
Text extracts F11

Red, Mark on the face (forehead)
– a topographic surface phenomenon –

‘Categories of experience need not mirror the nexus of real events but must, with a certain tolerance allowed, be isomorphic to it….it is sufficient that a certain degree of isomorphism exists between the experienced world and the “real” world so that the experience can guide the organism in such a way as to preserve its existence…The “red” sign is not identical with the various hazards it indicates… thus “red” is isomorphic to “stop”.’ (Von Bertalanffy 1968 p.241)

Colours, such as ‘red’ are a major element of ‘correspondence’ thinking in antiquity, but also of archaic myths and prehistoric human activities (eg red ochre and charcoal black in cave painting). Here, we focus on archaic or neolithic meanings, and related associations to daily life sensations.

Red as heat, inflammation, irritation

Red is associated, in the body, with sensations of heat, and this is used to make correlations between the body and mystic processes:

• ‘St. Catherine of Genoa was a 15th century Italian [mystic.] She frequently reported unbearable heat as well as ecstasy and she endured long periods unable to… take any food or water. […] Her body turned completely yellow, and remained so after death., when it appeared dried up. […] In the acupressure system, the big toe is the source pint of the spleen meridian [...] which is said to have peculiar affinity for certain aspects of sexual maturing.’ (Greenwell 1990 p.118-119)

In Western medicine, red and heat are associated with physical inflammation, particularly of the joints:

• ‘The term arthritis describes over 100 kinds of inflammatory or degenerative disease that damage the joints. […] An inflammatory response follows… producing an agonizingly painful attack of gouty arthritis, or gout. The initial attack involves a single joint, usually in the lower limb, often at the base f the big toe.’ (Mariel & Mallatt 2003 p. 236-7)

In popular culture, red, heat and the emotion of anger recall archaic notions of ‘Fire’.

Inflammation, in turn, is often explained in terms of ‘irritation’. ‘Irritation’ is exactly the effect ascribed, in medical literature, to contraceptive mechanical devices – but this is not transferred into patient education literature. Yet, it can be a quite concrete and physical female experience. Problems with menstruation and menopause are usually ascribed to hormones, and this causes many problems in medicine, theoretical and in clinical treatment,
but few researchers ask questions about this assumption, or enquire into the connection between tissue degeneration of the uterus and the immune system.

**Red Female Blood**

Female menopause is one of the ‘not well understood’ phenomena of health, one that challenges many conventional explanations. Menstruation is variously valued, even by women themselves, depending on their daily life experience of it (eg painful or not, sense of activated creativity or emotional chaos, etc.). Menstruation and pregnancy are a double edged sword for female health, and often result in health damage that gives women their cultural reputation for weakness, and ultimately in menopause (nearly everyone agrees that menopause is a health disaster, even if it can be compensated by ‘raising spirit’). The association of the colour red with female blood is a very old one traceable to prehistoric and archaic cultures, and it is carried on, in modern literature, associated with empowered female creativity, psycho-spiritual processes, and Creation (eg Grahn, 1993, Livingstone 2005) and the appearance of the ‘Human’:

- ‘The blood of the female and the vivifying fire of the male are the two factors of human creation.... regenerated in baptism, reborn and saved, as by Fire and Blood, or the Water and Breath’, in the purifying rite.’ (Kieffer 2000 p.14)

The colour red is also characteristic of the female framework of the ‘East’, still visible in correspondences of elements and colours in ancient traditions (eg left, east, spring, redness in Despeux & Obringer 1997 p. 73). Red also has a link to the colour yellow (see <PPT1 Body> presentation), which develops into perspectives related to green, but this is less well understood.

**Red and Pregnancy cure**

A number of female conditions can be approached usefully through the denomination of ‘syndromes of instability’ (see <Extracts F4\ Syndromes of instability>). They have confused physicians since medieval (and possibly ancient times) under various names such as ‘white fever’, ‘green disease’, or ‘chlorosis’ (in girls at menarche – King 2004) and in women at other life stages (Furth 1999). These are also related to coughing syndromes (Despeux & Obringer 1997). The forms of these fatigue-pain-instability syndromes are investigated in human sciences but are considered different illnesses, or fictitious in medical science. I found consistent descriptions in the archaic literature, but they do not differentiate the body’s from the person’s behaviour.

**Cured by pregnancy**

One of the characteristics of such syndromes is puzzling for all medical frameworks. They can sometimes be cured by pregnancy (this ideas often drifts into marriage as a cure):
• ‘Jacobi... mentioned what he called “chloro anemic girls” who could often be cured by pregnancy.’ (King 2004 p. 138)
  ‘... his own recommendation of marriage as a cure, because this will remove any obstacle preventing the blood from flowing out, and “if they become pregnant, they will be cured”. However, the last lines of the text warn, even married women may suffer this way if they do not have children.’ (op.cit. p.50)

Some women just ‘love being pregnant’ for this reason [in my case only the middle of pregnancy ‘cured’ instabiliy, after activation of growth and before re-activation for birthing labour]. A similar phenomenon, in even known in Western medicine:

• ‘The course of rheumatoid arthritis is variable: it may develop gradually or in spurts that are years apart, and it is marked by flare-ups and remissions (rheumat, from the Greek, means “susceptible to change”). [...] It affects three times as many women as men, and wanes when a woman in pregnant.’ (Marieb & Mallatt 2003 p. 237) (This is also the case for acne.)

Yet there are few mentions in the literature of this phenomenon which, instead, is often shifted into institutionalised habits of marriage to cure young girls (King 2004, and archaic texts). A correlate notion in archaic texts ascribes settling male sexual drive by marriage, an idea that can make sense:

• ‘She regarded menstruation and male nocturnal emissions as equivalent, representing “the natural healthy actions of self-balance”; both occur spontaneously in healthy people, and can frighten young people.’ (King 2004 p.136)

‘Beheading the Red Dragon’

Women have dealt with the problem of pain, fatigue, swelling, temperature dysregulation, and progressive damage from instability in menstruation and menopause in another, little known way that is not taken into account in any medical framework. Through the process of ‘beheading the red dragon’ in female Chinese inner alchemy, they attempted to stop menstruation and/or restore the damage done by menopause (Despeux 1990 pp.244-268, Furth 1999 pp.219-220, Despeux & Kohn 2003 p.204, 223-241). This is related to the ‘cure’ by pregnancy, as well as that by activation of survival mechanisms of physiology and metabolism. Whether this process is actually effective or not, its significance should be investigated in the physical terms of medicine, without psychosocial explaining away: the cycles deemed good and even necessary by medical, social, and other explanations, and discussed since archaic times, are not necessarily felt as such by all women. Why?

Is menstruation ‘healthy’ for females?

Despite the wide agreement that women or humanity are better off, individually or collectively, if female physiology is ‘regulated’ by menstruation, a few rare voices do not subscribe to this rarely examined presumption:
• 'Soranos, who wrote in the second century AD, ... argued that, apart from its contribution to conception, menstruation is actually bad for women's health (Gyn.1.27-32; Temkin 1956:23-30. But his views were eclipsed by the development of the Hippocratic.Galenic tradition, and the belief that menstruation was essential to maintain women's health was still unanimously accepted in the seventeenth century.' (King 2004 p.11) (see also Power Point presentation <PPT2 Body>.

**Indian Cosmogony: positive and female**

**Indian Bindi: Holy Red Drop**

The word *bindi* is derived from the Sanskrit word *bindu*, which means "drop". In Northern India, this red mark is worn by married women, and it is supposed to bring good fortune, and to make the bride the preserver of the family's honour and welfare. Throughout India, many believe the little red dot symbolises the mystic third eye (for both men and women). It now has become a fashion item and a mere symbol, and there seems to be only linguistic and symbolic explanations. I could find no literature or interlocutor capable of explaining to me 'whence from' this 'red dot' came in actual human experience (eg a psychic, cognitive or physical experience).

**‘Red’ as a visible but subtle physical Red Spot**

(This is one of the nexial-topologic observations that I was able to reproduce.)

I found, however, in my own health states, something that could be a physico-behavioural source. I observed something that appears directly related to this. In an adaptive state, the body is chronically dehydrated, albeit at low grade, and slightly swollen systemically. This manifests as a slightly reddish spot right between the eyebrows (a little lower than on this picture) that is very dry, almost flaky. The colouring, however is slight, light enough to not be noticed by other modern people (even a doctor).

This spot has occurred on a number of repeated occasions. It occurs in both increasing activation and decreasing activation of the stress-work-fight-think mode I experience as a 'surVival' mode ('life' sur-activation). It is a topographic sign, indicator or marker, of going through a threshold that last for a time (from one to several days). In the conventional deployment of perspectives, this event would be seen as a good thing, related to the capacity to adapt. In my nexial-topologic view, it is the reverse: the spot denotes the use of brain-central-control to cope, work, defend, etc., and it is a difficult time. Below are some quotations concerning ‘The Red’ in ancient human forms of experience and explanation.

**Blemishless, Blameless**

In archaic frameworks, ‘The Red’ is associated with beauty and a ‘blemishless’ body for women, or (in earlier myths) for a woman’s baby and humans in general.

- ‘bodies free from stain, with signs that mark them’ (Rig Veda hymn 181, in. Griffith 1898)
- ‘This (universe) existed in the shape of Darkness, 1 ‘unperceived, destitute of distinctive marks, unattainable by reasoning, unknowable, wholly immersed, as it were, in deep sleep.'
note by Eliade: Tamas, a darkness both physical and mental. The Samkhya system finds considerable significance in this stanza: tamas, one of the three twisted strands (gunas) of cosmic substance, represents inertia. (The Laws of Manu 1, 5-16 in Eliade 1996)

- ‘This account, preserved in the tenth chapter of Genesis, could only have been kept by the black race, the “blameless Ethiopians”. ‘ (Kieffer 2000 p.68) ‘The Ethiopians are called by Isaiah a people of great might or double power.’ (op.cit. p. 69)

Muktananda: Red in the ‘High Above’ (high spirit) is a light of mind

- ‘So the Chit Shakti enters the Siddha student and... performs many functions. Its first task involves the red petal, which is eight hands high, the same length as the human body. This body is the vehicle for experiencing happiness and pain, and it is through this body that sins are committed or good deeds performed.’ (Muktananda 2000 p.97) ‘The red body is the experiencer in the waking state... The individual soul in this body is represented by a, the first letter in Aum.’ (op.cit. p.98)
- ‘Meditation at the red stage... is meditation in the gross body.’. (op.cit. p.103)
- ‘Later, however, I learned that this was a hatha yogic process effected by the goddess Kundalini’, in order for Her to move up through the spinal column into the shasrara. Sometimes as my neck rotated, my chin would get fixed in the jugular notch below the throat. This is a divine hatha yogic contraction, or lock... As this bandha took place, there was another movement below - my anus would be automatically drawn in and then released. [...] All these movements [physical kriyas] happened spontaneously; I was learning about yoga through inner inspiration. (op.cit. p.103)
- ‘Then a ruinous kind of meditation came to me - a sensual meditation, a meditation of desire. How disgusting it was! I saw the red light.[...] When I shut my eyes, I saw, right in front of me, a beautiful naked girl inside the red light. Even though I didn’t want to see her, she appeared. Full fear and remorse, I opened my eyes. I still saw the divine red light. Within it, Jagadamba, the naked girl, still stood... It was all being forced on me against my will.’ (Muktananda 2000 p.107) ‘I meditated a little, but the same naked woman appeared.’ (op.cit. p.108-9)

A negative or positive indicator: red mark on the forehead

The notion of a ‘red mark’ or a ‘marking’ is sometimes interpreted positively, sometimes negatively (compare also to the ‘two hands’ in <Extract F10: Left-Right>):

- [In the Shu Ching ] ‘The five punishments used are branding on the forehead, cutting of the nose, cutting of the feet, castration, and death inflicted in various ways.’ (Waltham 1971 p.11)
- ‘The Celestial Eye will be squeezed to feel great pain, and the temples will also feel swollen with the eyes feeling as if they are digging inward until it squeezes out and hangs in front of the forehead all at once. (Li Hongzhi 1998)
- ‘(65) ‘There thou shalt make waters flow [...] (80) ‘There shall be no humpbacked, none bulged forward there; no impotent, no lunatic; no one malicious, no liar; no one spiteful, none jealous; no one with decayed tooth, no leprous to be pent up, nor any of the brands wherewith Angra Mainyu stamps the bodies of mortals.’ (Ahura Mazda teaches Yima How to save the best and fairest, in Eliade 1996)

Biblical Old Testament: mark of rising or correction, to seal

- ‘At ease I have been, and he breaketh me. And he hath laid hold on my neck, And he breaketh me in pieces, And he raiseth me to him for a mark.’ JOB 16:12
- ‘I was at ease, but he hath broken me asunder: he hath also taken me by my neck, and shaken me to pieces, and set me up for his mark.’ JOB 16:12

'to establish a weight for the wind' JOB 28:25
'My face is foul with weeping, and on my eyelids is death-shade;' JOB 16:16
'establish justice in the gate' AMOS 5:15
'You have appointed them for judgement; O Rock, you have marked them for correction.' HAB 1:12
'Behold the swelled-up, his soul is not upright in him' HAB 2:4
'My covenant was with him, one of life and peace.' MAL 2:5
'She has not received correction' ZEPH 3:2
'And will make you like a signet (ring)' HAGG 2:23

**In the New Testament: gift of God, ‘mark of the beast’**

- ‘... to lift the veil which the goddess [Isis] herself had boasted no mortal had ever withdrawn. To a student of Gnosticism, the Veil of Isis is one of the greatest enigmas, a mystery that is, perhaps, as profound as the Law of the Red Heifer...’ (Kieffer 2000 p.xix)
- ‘... that they bring you a red heifer without blemish, in which there [is] no defect [and] on which a yoke has never come’ NUM 19:2
- ‘To Abraham, who was childless and landless, God offered posterity and country provided that he led a perfect life and marked his body and that of all his male progeny with a visible reminder of the Covenant between himself and heaven – circumcision.’ (Gen. XVII, 1-14).’ (Vermes, p.37)
- ‘And he caused all, both small and great, rich and poor, free and bond, to receive a mark in their right hand or on their foreheads.’ REV 13:16
- ‘So that no one could buy or sell unless he had the mark, which is the name of the beast or the number of his name.’ REV 13:17
- ‘A third angel followed them and said in a loud voice: "If anyone worships the beast and his image and receives his mark on the forehead or on the hand,...’ REV 14:9
- ‘And then the children of Israel, the whole congregation, came into the Wilderness of Zion in the first month.... Now there was no water for the congregation; so they gathered together against Moses..... Why have you brought up the assembly of the Lord into this wilderness that we and our animals should die here? NUM 20: 1-4

**Mark of growth**

- ‘A sixth conclusion we draw is that, although the world needs a shared perceptual framework from which to build a sustainable future, this does not mean we should seek cultural homogeneity and human uniformity. After surveying the growth and decline of the world’s civilizations, Arnold Toynbee found a master process at work in the disintegration of societies, which he called a “tendency towards standardization and uniformity”. Diversity within unity is the mark of a growing species-civilization.’ (Duane 1997 p.21)
Text extracts F12
Mysterious pass, Mysterious place, ball, primary & secondary

(See also <Extracts F9\ Deep confusing questions>, <Extracts F13\ San jiao & inversion>.)

In Chinese medieval writings, the ‘Mysterious’ is sometimes a female figure experienced as real (see <Extract\ F14\ Mysterious Female>), sometimes a ‘place’ and sometimes a ‘pass’.

As a ‘Pass’
As a pass, it is often called a gateway, gate, portal or door, or an eye (to pass through). In Chinese inner alchemy, one preferred name is the ‘Mysterious Pass’ (Furth 1999 p. 192-3, Li Hongzhi 1998, Wong 2000 p.121).

These have been, of course, understood for a long time as spiritual processes, secret or difficult or dangerous to apply, and the medieval period is pervaded with confusion about them: ‘Serious practitioners have heard about these processes, but no one knows how they can liberate us from the dust of the world.’ (Wong 2000 p.121). Dominant culture tends, instead, to deny their existence, or engage in bickering about them, between spiritual schools, or turn them into a social science as did some ancient: ‘establish justice in the gate’ (AMOS 5:15).

As a ‘Place’
As a place, it may be ‘the valley’ (Wong 2000 p.119) (compare to ‘Abyss’ and ‘Pit’ in other ancient bodies of literature, and to the cups, crucibles, and cones of arcane knowledges) and the ‘Below’ (Wong 2000 pp.128-129), with a topographic language (Wong 1997 p79) that produces confusion (Wong 2000 pp.128-129). That ‘place’ appears in very different contexts, under many different names, but not only spiritual, in the guise of many different definitions that confuse philosophers and physicists alike (Weisstein 1999). This ‘place’ and its reality or unreality has been the source of mystified reflections for a very long time (Eliade 1961 p.130, Cleary 2000 p.391, Powell 1880 in Kieffer p.60, Furth 1999 p.192, Newton 2006b) (see <Extract F9\ Deep confusing questions>).

Some other notions are relevant to this ‘place’ that I consider a topologic space: deployment as generative, the unfolding ‘Secondary’ and enfolding ‘Primary’ defined by deployments after containment (after order 3), and the principle of inversion (see <Extract F13\ San jiao & inversion>). The most interesting geometrically in that of a ‘ball’, which is, in mathematics, very different from a sphere or globe? The latter is a surface or double-surface
(inside and outside, similar to the upside and underside of a sheet of paper, whereas the ‘ball’ is a spherical mass without a surface, like the inside space of the sphere-surface (when it is not empty). This is related to enfolding and boundary, to the imagery of the womb, and to trying to express what a ‘one’ that is not differentiated is. As with all other confuse notions I found in both ancient and modern literature, there many variations, some very fancy.

**Mysterious Pass**

- ‘One “return” of a man’s primal qi makes his whole body harmonious.’ [...] ‘The paths of such movements up and down from the Gate of the Mysterious Female’ at the generative centers below... [to] the “ball of mud” (niwan) of the brain... one visualized... as terrain linked by pathways in a tapestried interior landscape.’ (Furth 1999 p.192)
- ‘Who could understand what the Mysterious Pass is? Few genuine qigong masters understand it.’; [...] ‘... the Mysterious Pass is open. When it ejects out, it is a long tube which will become round gradually.’ (Li Hongzhi 1998)
- ‘After the Mysterious Pass forms a system...’; ‘Nobody could explain clearly why the Buddha sits inside the circle. Let me tell you that this is... the Mysterious Pass... It is called a world.’ (Li Hongzhi 1998)
- ‘Gathering her ministers and advisors together, she told them, “I’m going in search of the mysterious lands beyond the vast oceans far to the south. We’ve always heard rumors of a wondrous rich land beyond turmoil, beyond time. I’m going to find that place.”’ (Edwards 2000 p.42-43)
- EE Bouchon (2004)

My experience projected the notion into physical sensation: it manifested as a ‘core’ location in my body, around the center of the diaphragm, which can twist (rather than just go up and down), and in which I had a sensation that I could ‘follow the direction’ I was going towards even when walking with closed eyes. This worked to surprisingly reliable effect: my walking was very straight (I checked my footstep marks in the beach sand behind me), whereas without this ‘core’ sensation, walking with closed eyes is a rather wobbly affair. This was a physical and ‘local’ experience. It also gave me an extraordinary sensation of being globally supported ‘from inside’ by something ‘beyond me’, without any particular location in space or time. I associated the sensation local to my body with the ‘Pass’ of Chinese inner alchemy, and the global sensation (lifeworld) with the mysterious ‘Place’.

**Ball and silk**

- ‘The n-ball, denoted $B^n$, is the interior of a sphere $S^{n-1}$, and sometimes also called the n-disk. (Although physicists often use the term "sphere" to mean the solid ball, mathematicians definitely do not!) The equation for the surface area of the n-dimensional unit hypersphere $S^n$ gives the recurrence relation [...] The term "sphere" technically refers to the outer surface of a “bubble”, which is denoted $S^2$. However, in common usage, the word sphere is also used to mean the union of a sphere [curved surface] and its interior (a *solid sphere*) [note the assimilation of volume to rigid solid even in maths]

where the interior is called a ball.’ (Weisstein 1999)
- ‘the “ball of mud” (niwan) of the brain....’ (Furth 1999 p.192)
- During the Han dynasty, there was a handsome man known as the Gardener, who:

  ‘used to cultivate fragrant herbs of five colours... One day five-coloured moths suddenly appeared and gathered around the plants. Eventually, when [the] silkworms [he had collected] had produced their cocoons, one night a “good woman” appeared at the Gardener’s door, calling herself his wife. She showed him how to collect the silk and they found they had one hundred and twenty cocoons the size
of jars, which took sixty days to wind into a single huge ball of silk floss. When this was done, they disappeared together. Subsequently the local people set up a shrine to them.’ (Cleary 2000 p.391)

The following passage, reproduced in a section called ‘Raising the Ceiling of the World’ (Kieffer p. 60), is a presentation on ‘the mythical beginning with the Seven, ... a legend of the seven stars,... cows, ... or sisters that are met with in the oldest mythologies’. It contains an usually high concentration of nexial and topographic vocabulary (in bold):

• ‘The philosopher of Oraibi tells us that when the people ascended by means of the magical tree which constituted the ladder from the lower world to this, they found the firmament – the ceiling of this world – low down upon the earth, the floor of this world. Machito, one of their gods, raised the firmament on his shoulders to where it is now seen. Still the world was dark, as there was no sun, no moon, and no stars. So the people murmured because of the darkness and the cold.

‘Machito said, “Bring me seven baskets of cotton bolls”, and they brought him seven baskets of cotton bolls; and he taught the seven maidens to weave a magical fabric from the cotton, and when they had finished it he held it aloft, and the breeze carried it away toward the firmament, and in the twinkling of an eye it was transformed into a beautiful full-orbed moon. The same breeze caught the remnants of flocculent cotton, which the maidens had scattered during their work, and carried them aloft, and they were transformed into bright stars.

‘But still it was cold, and the people murmured again, and Machito said, “Bring the seven buffalo robes, and they brought him seven buffalo robes, and from the densely matted hair of the robes, he wove another wonderful fabric, which the storm carried away into the sky, and it was transformed into the full-orbed sun. Then Machito appointed times and seasons and ways for the heavenly bodies, and the gods of the firmament have obeyed the injunctions of Machito from the day of their creation to the present. (Powell 1880 in Kieffer p.60)

• ‘The resemblance between the pearl developing in the oyster and the foetus… […] Oysters, since they contain the yin principle only, are favourable to parturition and sometimes precipitate it…. When “gravid with the pearl”, the oyster pang is like a woman carrying the foetus in her womb.’ (Eliade 1961 p.130)

• ‘Plutarch thus expounds: Jupiter he calls fiery heat & ether luno vital air, Aidoneus or Pluto earth & Nestis the fountains of seed & water in humane bodies. Isis being therefore the whole globe of the four elements & Osiris only the element of the earth it thence came to pass that the magna Deûm mater was worshipped much more generally then Pluto, all nations having her in great honour. flor by her they often understand not only this elementary globe but the whole system of all the Planets calling her soul the soul of the world.’(Newton 2006b)

• ‘Pink Bubble Meditation technique’: (Creative visualization by Shakti Gawain, 1978, which I practiced for a couple of years a long time ago)

‘… Imagine something that you would like to manifest. Imagine that is already happened. Now in your mind’s eye surround your fantasy with a pink bubble, put you goal inside the bubble… Pink is the colour associated with the heart, and if this colour vibrations surrounds whatever you visualize, it brings to you… The third step is to… imagine it floating off into the universe, still containing your vision…. Now it’s free to float around the universe, attracting and gathering energy for it’s manifestation.’ (text verbatim, Earth Star Publishing, 2006, Perth, WA, Australia)

\textbf{Primary-Secondary in the body}

• ‘ability to factor numbers into primes since “primeness” is an abstract concept.’ (Kak 2000)

• ‘first dying’ –’not dying a second time’ thanks to asuni [conducted breath/ life/ vitality] (Miller 1974 p144-45)

• ‘There is another category of pain, however, called chronic pain. As far as we know, this type of pain does not serve any known purpose; it has outlived its usefulness. […] involving a more mysterious dysfunction in the pain sensing or interpretation centers of the spinal cord and brain. Fibromyalgia and
chronic migraine fall into this category. [...] The author writes about the "Myth of Two Pains" — physical vs mental — [...] She notes the 19th-century view that: "pain wasn't legitimate unless it could be pointed to, probed and measured; otherwise it was [...] "all in the head." (Jovey 2002)

- ‘By the nineteenth century, the first [menstrual “retention”] was “primary amenorrhoea”, and the second [menstrual “suppression”] was secondary amenorrhoea’. (King 2004 p.10)

- ‘According to psychodynamic theory, conversion symptoms develop to defend against unacceptable impulses. Some write of primary gain, that is to say purpose of keeping an internal conflict or need from being realized. A fairly transparent example would be leg paralysis after an equestrian competitor is thrown from his or her horse. The symptom has a symbolic value that is a representation and partial solution of a deep-seated psychological conflict: to avoid running away like a coward, and yet to avoid being thrown again. According to learning theory, conversion disorder symptoms are a learned maladaptive response to stress. Patients achieve secondary gain by avoiding activities that are particularly offensive to them, thereby gaining support from family and friends, which otherwise may not be offered.’ [...] ‘Patients often deny emotional difficulty. Unfortunately, la belle indifférence, histrionic personality, and secondary gain are clinical features that appear to have no diagnostic significance. They can easily be absent in patients with conversion disorder; they can be easily be present in patients with traditional neurologic disorder’ (Powsner & Dufel 2005)

- ‘The second broad cluster, depletion fatigue, assembled afflictions marked by slow, chronic wasting, where the sufferer grew emaciated and debilitated, accumulating a host of secondary symptoms from pallor, indigestion and shortness of breath to hair loss, hot sensations on palms of hands and soles of feet, and palpitations, while also experiencing destabilized psyche marked by disturbed dreams or insomnia, fits of melancholy or anger.’ (Furth 1999 p.79)

- ‘The etiology of malnutrition may be divided into two categories, primary and secondary. [...] Secondary malnutrition is due to factors interfering with the ingestion, absorption, or utilization of essential nutrients, or to stress factors that increase their requirement, destruction, or secretion.’ (Pfeiffer 1975 p.4)

**Primary-Secondary in abstraction**

(See also Spinoza and Husserl in <Extracts F5\ Gauging thinkers>)

- ‘All basic life processes require alternating phases of (1) arousal and effort where energy is consumed and (2) a phase of so-called “relaxation” where the system is actually furiously busy building up energy (cyclic AMP) and supplies (enzymes and messenger molecules) at the genetic-cellular level for the next work cycle. We emphasize this basic two phase dynamic of arousal and relaxation. (Rossi 1996 p.138-9)

- ‘...the distinction, in a given pathological situation, between the primary symptoms and the secondary symptoms, or, if one translates literally the Chinese terms, between the trunk elements and the branch elements, from which the way they succeeded and engendered mutually can be reconstituted. Thus “illnesses with accumulation” (jiju bing) constitutes a rubric in which accumulations are the predominating symptom. But these are also found in the names of syndromes of other nosological entities as secondary symptom, such as in the “State of vacuum and fatigue”... One can yet give the example of qi rising back up: in the rubric of cough illnesses, a syndrome is named “cough and qi rising back up” but this rising back up of qi, here a secondary symptom, is also found in other pathology rubrics... where it becomes the primary symptom of a syndrome. That is why terms such as “accumulation” (jiju) of the yin and yang qi or “inversion of qi” express at the same time symptoms and transformations of the pathological process.’ (Despeux & Obringer 1997 p.75-76, my translation –text below “–, see also discussion of qi, pp.42-48 and p.83).

- ‘Blood and qi, in terms of circulating primary vitalities, and sufferers experiencing these terms of a phenomenology of bodily fullness or emptiness or sensations of heat and cold. Constructions of disease as internal depletion and functional inadequacy were sometimes at war with notions of it as external invasion and alien presence.’ (Furth 1999 pp.238)
• ‘Niels Bohr commented... "... The analogies with some fundamental features of the quantum theory, exhibited by the laws of psychology [...] Yet it may well be that behind these analogies there lies not only a kinship with regard to the epistemological aspects, but that a more profound relationship is hidden behind the fundamental biological problems which are directly connected to both sides [physical and psychological]." ’ (Jahn & Dunn 1986 p.767)

• ‘A day and a night of regulated breathing can [reverse] twenty years of chronic illness. One exposure to Heaven’s yang qi and all things grow and bloom. [...] One “return” of a man’s primal qi makes his whole body harmonious. [...] The paths of such movement up and down from the “Gate of the Mysterious Female” at the generative centers below the navel through the visceral trunk to the “bright hall” (ming tang) behind the eye and the “ball of mud” (niwan) of the brain followed the pathways of the circulation channel system and its openings, so that one visualized zang and fu interior landscape [...] ‘Yuan Huans’ teachings imagines the alchemical body as the functioning nexus of three primary vitalities: Essence (jing), qi and Psyche (shen) – a theorization considered by scholars today as central to the body of internal alchemy. I read Yuan Huang’s interpretation as showing internal alchemy as an eclectic strand in medical thought, addressing questions about the boundaries of life and death that medical doctrines based on the cycles of yin yang and the Five Phases ignored. In the Yellow Emperor’s body psychic activity was not the subject of any distinct analysis. [...] Yuan Huang’s body of inner alchemy was achieved through mastering the complex interdependence of all three. The inner alchemist located himself in relation to the critical boundaries of birth and death in time.’ (Furth 1999 pp.192-193).

• ‘Take a human being, an animal, bird or reptile. He or she is moving along, doing nothing much in particular, in a territory and life is humdrum. The creature is running, as it were, in bottom gear. The he, she or it comes across a source of stimulus... Beyond the immediate pleasure-seeking comes the phase when reason comes into it, or knowledge. Reason says that one needs a shelter... There is a hierarchy of importance here.’ (Shah 1994 p.301)

• ‘The preposterous hypothesis we have come to... is that at one time human nature was split in many, an executive part called self, gods, and a follower part called a man.’ (Jaynes 2000 p.84)

[Author’s EE:] ‘In my late twenties, ...I had for about a week been studying and autistically pondering some of the problems in this book [...] One afternoon I lay down in intellectual despair on a couch. Suddenly, out of an absolute quiet there came a firm, distinct loud voice from my upper right which said “include the knower in the known!” It lugged me to my feet absurdly exclaiming, “Hello?” looking for whoever was in the room. The voice had had an exact location. No one was there!...I do not take this nebulous profundity as divinely inspired, but I do think that it is similar to what was heard by those who have in the past claimed such special selection. (op. cit. p.86 – see p.87-93)

‘In schizophrenia. [...] In some cases, particularly the most serious, the voices are not localized. But usually they are...In some patients there is a tendency to associate the good consoling voices with the upper right, while bad voices come from below and to the left. (op. cit. pp.88,89,90)

‘If we are correct in assuming that schizophrenic hallucinations are similar to the guidances of gods in antiquity, then there should be some common physiological instigation in both instances. This, I suggest is simply stress. In normal people, we have mentioned, the stress threshold for release of hallucinations is extremely high [...] This is caused, I think, by the buildup in the blood of breakdown products of stress-produced adrenalin which the individual is, for genetical reasons, unable to pass through the kidneys as fast as a normal person’ (op. cit. p.93)

‘If two monkeys are placed in harness, in such a way that one of the monkeys can press a bar at least once every twenty seconds to avoid a periodic shock to both monkeys’s feet, within three or four weeks the decision-making monkey will have [executive] ulcers, while the other, equally shocked monkey will not. [...] So Achilles, ... in decision-stress ... The divine voice ends the decision stress. (op. cit. p.94)

‘The Origin of Auditory Hallucinations – That there is a problem here comes from the very fact of their undoubted existence in the contemporary world, and their inferred existence in the bicameral period. The most plausible hypothesis is that verbal hallucinations were a side-effect of language comprehension which evolved by natural selection as a method of behavioral control. Let us consider a man commanded by himself or his chief to... If he is not conscious, and cannot therefore narrate the
situation and so hold his analog "I" in a spatialized time... how does he do it? [...] A Middle Pleistocene man would forget what he was doing. But lingual man would have language to remind him...If one is facing directly and conscientiously the problem of tracing out the development of human mentality, such suggestions are necessary and important, even though we cannot at the present time think how we can substantiate them. Behavior more closely based on aptic structures (or, in an older terminology, more “instinctive”) needs no temporal priming. But learned activities with no consummatory closure do need to be maintained by something outside of themselves.' (op. cit. p.135)

**Deployment as generative**

- ‘the matrice aspect of the unspeakable Deity, of the genetic Vacuum that comes to expand... its unveiling itself' (Cazenave 1998 p.96, my translation) ['...L'aspect matriciel de la Déité indicible, du Néant génétique qui en vient à se répandre,... son dévoilement même...']

- ‘“Come, Hidden Mother.” [...] which allows to make a bridge between the All of the Vacuum and the deployed All of divine creation.' (Cazenave 1998 p.109, my translation) ['...Viens, Mère cachée.” [...] qui permet de faire le pont entre le Tout du Néant et le Tout déploqué de la création divine.]

- ‘... the Whole is compacted (recollected), all in included, and the before-the-world appears; alchemists call it the Hole of the Obscure Pass and assimilate it to the obscure Female...”The Hole-One that is in the body is called the obscure Female... the knotting of the embryo is there... This Hole has no sides, nor any interior and exterior... It must be sought in the body and nowhere else.” This is why a commentator of Lao zi has written that all concerning alchemy is the “great affair” of the obscure Female.’ (Robinet, in Cazenave 1998 p.149-150, my translation) ['... la Totalité est rammassée, tout est inclus, et l'avant monde fait irruption; les alchimistes l'appellent la Trouée de la Passe Obscure et l'assimilent à la Femelle obscure... “La Trouée une qui est dans le corps s'appelle la Femme obscure... la nouaison de l'embryon s'y trouve...Cette trouée n'a pas de coté, non plus qu'un intérieur et un extérieur. ... Elle doit être recherchée dans le corps et nulle part ailleurs.”... C'est pourquoi un commentateur de Lao zì a pu écrire que tout ce qui concerne l'alchimie est “la grande affaire” de la Femelle obscure.]

- ‘... the “obscure Female”, which is the moment-place where... the Spring (of the world) moves...’ (Robinet, in Cazenave 1998 p.157, my translation) ['... la “Femelle obscure”, qui est le moment-lieu où... le Ressort (du monde) bouge...']

- ['Yin and yang are two phases of a single qi that give rhythm to life and the circulation in the body. Their deployment in a spatio-temporal closed schema is operated according to cyclical and continuous motion.' (Despeux & Obringer 1997 pp.27, my translation) ['Yin et yang sont deux phases d'un seul et même qi rythmant la vie et la circulation dans le corps. Leur déploiement dans un schema spatio-temporel clos s'effectue selon un mouvement cyclique continu.]

- ‘the auto-unveiling of the divine, its motion, its deployment’ (Cazenave 1998 p.94, my translation) ['l'auto-dévoilement du divin, son mouvement, son déploiement...']

- ‘The ultimate Height is, he says, the obscure Female, “the bourgeonning that deploys and transforms (the world) and generates the Tao continually.’ (Robinet, in Cazenave 1998 p.147, my translation– see also reference in note p.147) ['Le Faîte suprême est, dit-il, la Femelle obscure, “le bourgeonnement qui déploie et transforme (le monde) et engendre le Tao continuellement.”]

- ‘... “Gate guarded by the Jade Maiden” that permits to “enter into the mountain”... operating a return by going backwards, i.e. going against the flow of time and the order of evolution and deployment of the world.’ (Robinet, in Cazenave 1998 p.155, my translation) ['... “Porte gardée par la Fille de Jade” qui permet “d'entrer dans la montagne”... opérer un retour en marchant “à l'envers”, c'est-à-dire à contre-courant par rapport au temps et à l'ordre d'évolution et de déploiement du monde.]

* These are my translations.
...la distinction dans une situation pathologique donnée entre les symptômes principaux et les symptômes secondaires, ou, si l’on traduit littéralement les termes chinois, entre les éléments tronc et les éléments branches, à partir desquels on peut reconstituer la façon dont ils se sont succédés et engendrés mutuellement. Ainsi les “maladies avec accumulation” (jiju bing) constituent une rubrique dans laquelle les accumulations sont le symptôme prédominant. Mais ces dernières se retrouvent dans les intitulés de syndromes d’autres entités nosologiques comme symptôme secondaire, tel que dans les “Etats de vide et fatigue”... On peut encore donner l’exemple de la remontée de qi dans la rubrique des maladies de la toux, un syndrome est intitulé “toux et remontée du qi” mais cette remontée du qi, ici symptôme secondaire, se retrouve dans d’autres rubriques pathologiques, ... où elle devient le symptôme principal d’un syndrome. [...] C’est pourquoi des termes tels que “accumulation” (jiju) des qi yin et yang ou “inversion du qi” expriment à la fois des symptômes et des transformations du processus pathologique.’ (Despeux & Obringer 1997 p.75-76)
Text extracts F13 –
San Jiao (meridian) and Principle of inversion

Examples of inversions in health

There are many examples of inversions in the literature, but they are not usually recognised because they appear, in the human domain, as small interpretive disagreements, and in the scientific domain, as double negations that make logical positives. For example:

• ‘Dilman’s theory in essence, is that aging is caused by a progressive loss of sensitivity of the hypothalamus and related structures in the brain to negative feedback inhibition to hormones and neurotransmitters, and similar loss of sensitivity to peripheral hormone receptors. This loss of sensitivity [metabolic] not only enables us to grow and develop but is the cause of post-maturational diseases aging and death. [...] Dr Fabris proposed that there are two levels of interaction between the neuroendocrine and the immune systems. The first level is based on the interactions between the neuroendocrine system and the thymus gland [...] The second level of interaction is at the periphery, between neuroendocrine signals and the cell-signalling substances which are secreted by immune cells during specific reactions to various antigens.’ (Ward 2005)

• ‘cancer cachexia is characterised by higher rate of protein turnover and breakdown, in part due to failure of fat utilisation to adequately ‘spare protein’ in energy metabolism. (Helman 2003 p.3)

• ‘It seems unclear why he [Selye 1956] called these human diseases – diseases of adaptation, rather than calling them diseases of mal-or failed adaptation. We know today that these varied diseases... are also characterized by disturbances of the regulation of complex physical systems (Weiner 1977). Because of their hetero-genenity stressful experiences do contribute, the person for diverse reasons has failed to cope with them.’ (Weiner 1992 p.15)

• ‘Many of the symptoms of CFS are consistent with a host response to pathogenic challenge. We are focussing on proteolytic response, or catabolism.’ (Dunstan 2001 p.22-23)

The emaciation is, in this case, often invisible for the objective observer, hidden by fat increase:

• ‘clinicians treating cachexia must measure not just weight, but also muscle mass.’ (Helman 2003 p.3)

A most flagrant example of ‘inversion’ is the common understanding of Selye’s notion of ‘disease of adaptation’, which he sees as a general ‘syndrome of being sick’ physically (Selye 1976 p.17). Weiner, for example, interprets this as ‘human diseases – …of mal-or failed adaptation’ in which ‘stressful experiences do contribute, [and] the person for diverse reasons has failed to cope with them.’ (Weiner 1992 p.15)

The ‘alarm reaction’ (Selye 1976 p.50), similar to ‘garrison qi’’, involves an alert or ‘attentive brain’ (Wickelgren 1997), and is a straining that leaves ‘damage’ (Selye 1976 pp.1, 30) in its wake, and an sense of ill ease. The notion of adaptive failure contrarily implies that adaptation eases the strain and is thus similar to ‘nourishing qi’, involving mental ‘attention’ (Fehmi & Fritz 1980). The difference is far from small: it involves
fundamental shifts in the underlying (topologic) model-imaging, from the general to the specific, from the physical to the human and mental, in the development of a generic origination into multi-factor causal concepts, in the type of the descriptive vocabulary, and in human devaluation in certain conditions. Therefrom arises one of the most confusing sets of conflicting explanations and treatments relative to what I call ‘syndromes of instability’, which are still unresolved since medieval and most ancient history.

**The problem of the San Jiao meridian in acupuncture**

‘The classic problem of the sanjiao’ meridian’(Zito & Barlow p.86) is linked to notions of unfolding, penetration, dispersion, skin, boundaries and openings, texture, etc. (Zito & Barlow 1994 chapter 4: *Silk and skin: significant boundaries*, p.103-130)

- ‘Sanjiao, “triple burner”, is one of the most difficult to understand notions in traditional Chinese medicine, not only because it has no equivalent in Western medicines, but also because in China itself, it has not been clearly defined. The term itself of jiao poses interpretation problems, since the primary meaning arising from dictionary definitions and from its usage in the most ancient texts is that of burning, desiccating, whereas in the medical context, it seems, originally, more associated with circulation of fluids.’ (Despeux & Obringer 1997 pp.35) [French text below 1]

- ‘...the question of the localisation of the sanjiao animated medical debates for many centuries.’ (Despeux & Obringer 1997 pp.39) ['...la question de la localisation du sanjiao anima les débats médicaux pendant de nombreux siècles. ']

Discussions in Despeux & Obringer (1997) relevant to topology, the syndromes of instability, and the archaic East framework, include: sanjiao as somatic support (op.cit. p. 36); cycles of time, increasing and decreasing (p. 53); correspondence of left, east, spring, redness (p. 73); illnesses due to worms and to wind, penetrating, and notions of cause and origin, and triggering factors (p. 73); primary and secondary symptoms, or trunk and branching, succession and engendering (p. 75); inversion of qi (p. 77); time, origins and evolution; and space, relations of symptoms and transformations; establishing rules of constancy and variability (p. 77); rib pain on the right (p.91, 92, 100, 104, 216, 245)

- ‘This “organ” seems to have first been conceived, in the most ancient times, as somatic support to a particular function, then to have been divided into three levels and three specific functions. As can be seen in the texts mentioned from the Shiji as well as in two passages of the Suwen and the *Lingshu*, the triple burner, although triple, is nevertheless located only in the lower body where it is associated with the bladder... In the Suwen, the single burner (jiao) is more often mentioned than the triple burner.’ (Despeux & Obringer 1997 pp.36 – see full discussion, pp.35-42 ) [French text below 2]

**Principle of Inversion**

- ‘[...] “... the obscure Female is the mechanism that presides to the opening and closing of the world”... It is again the principle of inversion... that is applied since the obscure Female is placed on the physical plane but celestial (she is below, but contains the celestial Fire that elevates her). In other words, the mental... is of volatile nature, and has to be fixed, made to descend, give it the stability of the Earth. The body, on the contrary, is... of a heavy (massive) nature like the Earth, and must be elevated.’ (Robinet, in Cazenave 1998 p.161) [French text below 3]
‘inversion of qi’ and ‘qi rising back up’ (Despeux & Obringer 1997 p.75-77 – See also discussion of qi, pp.42-48, and p. 83, 99); of niqi (symptom) p.87 and qini (inversion of qi) p.94, and of sanjiao as somatic support p. 36.)

‘Health is guaranteed inside the body by essentially two sorts of qi: the nourishing qi (rong qi) which was also called, in the most ancient texts, garrison qi (yingqi) and the defensive qi, forming barrier and defending the body against intrusion…’ (Despeux & Obringer 1997 p.83) [French text below 4]

That is why terms such as “accumulation” (jiju) of the yin and yang qi or “inversion of qi” express at the same time symptoms and transformations of the pathological process.’ (Despeux & Obringer 1997 p.75-76, see also discussion of qi, pp.42-48,83). [French text below 5]

**Semantic inversion**

‘To nourish the planet while respecting the environment requires neither “hybrides”, nor GM, nor patent, nor any other technique of sterilisation of plants or animals. […] For the characteristic of this varietal type, which differentiates it from all others, is not to augment the yield thanks to some “hybridness” as has been proclaimed for decades, but to diminish that of the next generation, as is not told. […] In waiting for the Terminator varieties, it is until now the only varietal type that autodestructs in the field of the farmer. […] Unfortunately, there seems to be a change in the policies of the UPOV. It turns its back on its foundation principles to compete against the patent right founded on opposite principles. […] Let us observe once more the semantic inversion that consists in qualifying as privilege the foundation practice of agriculture, to sow the grain harvested. […] And the right of patent has been progressively turned around, against the intent of its liberal promoters.’ (Berlan 2001) [French text below 6]

‘… this intelligence-Esprit (mind-spirit) on the feminine mode since this notion has become, today, so alien to us. […] the Esprit, in Greek,… is named in the neutral (pneuma) or in the masculin (nous) – which cover fairly closely the same notions as breath and penetrating intelligence –, whereas Wisdom (Sophia) is in the feminine. Therefrom comes the inversion of genres that happens in the hellenism of the Roman period, as soon as the Jewish authors try to reflect in Greek on the biblical texts, … and often syncretise them (the genres).’ (Cazenave 1998 p.111-112) [French text below 7]

‘Plato has also postulated a tripartition of the soul, which like any trinary form is characteristic of themental structure and may be seen as a direct connection to the tripartition of time effected by Parmenides, who was the first to posit the three-phase nature of time. This gave rise to the problematic aspect of the future. […] The dimension of the future necessarily lends a forward thrust to spatiality, giving both space and time the semblance of direction. Let us take note of this result: our conceptual time is not a psychic but a mental phenomenon which proceeded from the psychic: it is the line that severs the circle and thus forms the basic dimension of a four dimensional space. By virtue of the fact that it was itself divided, time became measurable; but it thereby forfeited its original character. In the course of philosophical speculation it was to a great extent spatialized. This transposition or reversal is a typical speculatio rationis: the divider, instead of being treated as such, is itself divided. Commensurately with this transposition there is necessarily a devaluation of the concept of time which engenders a manifest debasement of time, particularly in the wake of the discovery of perspective and the complete spatialization of the world.’ (Gebser 1985 p.178)
Above are my translations of the following French text extracts:

[1] 'Sanjiao, "triple réchauffeur," is one of the most difficult concepts of traditional Chinese medicine. Not only does it have no equivalent in Western medicine; it has not been clearly defined in China itself. The term itself poses problems of interpretation, since its primary meaning as indicated in dictionaries and ancient texts is to burn, dry, whereas in the medical context it seems to be associated with the circulation of liquids.' (Despeux & Obringer 1997 pp.35)

[2] 'This "organ" seems to have been conceived in the earliest times as a somatic support of a particular function, and was then divided into three levels and three specialized functions. Indeed, in the text mentioned of Shiji, in passages of Suwen and Lingshu, the triple rechauffer, if it is triple, is still only situated in the lower part of the body where it is associated with the bladder. In Suwen, the rechauffer (jiao) is mentioned more often than the triple rechauffer.' (Despeux & Obringer 1997 pp.36)

[3] '… the Female obscure is the mechanism which presides over the opening and closing of the world. It is still the principle of inversion that is applied since the Female obscure is placed on the physical plane, i.e. the Heavens, and that it contains the Fire of Heaven. In other terms, the mental is volatile, and one must fix it, make it descend, give it the stability of the Earth; the body, on the contrary, is heavy, like the Earth, and must be raised.' (Robinet, in Cazenave 1998 p.161)

[4] 'Health is guaranteed inside the body by essentially two types of qi: the nourishing qi (rong qi) which is mentioned in the ancient texts as a defensive qi (weiqi) forming the barrier and defending the body against invasion…' (Despeux & Obringer 1997 p.83)

[5] 'This is why terms like "accumulation" (jiju) of the qi yin and yang or "inversion of the qi" express themselves with regard to symptoms and transformations of the pathological process.' (Despeux & Obringer 1997 p.75-76)

[6] 'Nourrir la planète en respectant l'environnement n'exige ni «hybrides», ni OGM, ni brevet, ni aucune autre technique de stérilisation des plantes ou des animaux.' (Berlan 2001) 'Car la caractéristique de ce type variétal, qui le différencie de tous les autres, n'est pas d'augmenter le rendement grâce à une supposée «hybridité» comme on le proclame depuis des décennies, mais de diminuer celui de la génération suivante comme on le tait. En attendant les variétés Terminator, c'est jusqu'ici le seul type variétal qui s'autodétruit dans le champ du paysan!' 'Malheureusement, il semble qu'un changement s'opère dans la politique de l'UPOV. L'UPOV tourne le dos à ses principes fondateurs pour faire concurrence au droit de brevet fondé sur des principes opposés. [O]bservons une fois encore l'inversion sémantique consistant à qualifier de privilège la pratique fondatrice de l'agriculture, semer le grain récolté.' (Et le droit de brevet s'est donc progressivement retourné contre les intentions de ses promoteurs libéraux.)

[7] '…esprit-intelligence on the mode feminine (Sophia) is the feminine intelligence. D'où l'inversion des genres qui se produit dans l'hellénisme de l'époque romaine, dès lors que les auteurs juifs tentent de réfléhir sur les textes bibliques, … et souvent les syncrétisent.' (Cazenave 1998 p.111-112)
Extracts F11 – ‘Mysterious Female’

(See also <Extract F12\ Mysterious pass or place>)  
Spiritual practices of activation such as ‘activation of the Goddess’ (Despeux & Kohn 2003), of the Kundalini (Muktananda 2000, Edwards 2000), or of life energy (Laughlin et al. 1990), can give rise to physical, psychic or psycho-physical experiences. The activation may be involuntary (eg Cleary 2000 p.391, Brach in Cazenave 1998 pp.41-47), or consciously sought, as for the Mysterious Female (Robinet in Cazenave 1998 pp.137-165, Furth 1999, pp.81,192, Despeux & Kohn 2003 p.90, Cahill 1992).

Experiential accounts: ‘Mysterious Female’ from a male viewpoint

For experiential accounts of ‘The woman’, consult for example, Muktananda (2000 p. 11, 107-109, 117), Edwards (2000), Peat (2003, on Wolfgang Pauli) and other examples (below) This also appears related to ‘the Light’ (Muktananda 2000, Edwards 2000), which is also found in Near Death Experiences (not necessarily on the hospital table – see for example the “Neuro-vegetative-collapse” of Tomatis (1991 pp.194, 195, 197), which can be compared to the ‘falling on his face’ of biblical prophets. Most interesting is the general shape of the experiential stories told. They often involve either ‘rising’ (or ‘ascending’) or a ‘falling deep’, the story lines familiar in archaic texts that involve East, West, South, North, or an unravelling of space and time (see <Extracts F12\ Mysterious pass or place>), with a topographic language strikingly similar to that found in ‘advanced’ knowledges, whether spiritual or scientific (compare for example Muktananda 2000, Edwards 2000, and Tomatis 1991).

One particular example is notable in this respect. The poem by pre-socratic philosopher Parmenides (Kingsley 1999 pp.53-54) and its explanation by Parmenides himself, have given rise to many exegeses, but also left, according to Kirk & Raven (1963 p.278-282) a little known explanation, of the ‘advanced’ kind – the ‘Way of Seeming’. My reading of it suggests a likeness to trying to explain general relativity to a special-relativist without images.

- ‘He would absorb seminal essence from the Mysterious Female, following the Daode jing dictum that the “valley spirit that does not die” (ch.6) and thereby preserving his life and nourishing his qi.’ (Despeux & Kohn 2003 p.90)
- ‘Mysterious Gateway’; ‘One “return” of a man’s primal qi makes his whole body harmonious;’ ‘the paths of movements up and down from the Gate of the Mysterious Female’ at the generative centers below… “ball of mud” (niwan) of the brain… one visualized… as terrain linked by pathways in a tapestried interior landscape.’, Furth 1999 p.192)
The Mysterious Female is a good thing, but she is ‘not self’ and it is unclear ‘whence from’ she comes:

- ‘Meditation at the red stage... is meditation in the gross body.’ (Muktananda 2000 p.103)

  ‘Then a ruinous kind of meditation came to me - a sensual meditation, a meditation of desire. How disgusting it was! I saw the red light, but its color changed. It was my size and was shining like the soft ways of the morning light in the east. All the love and intoxication I had felt in meditation left me... Instead, in their place came a powerful sexual desire...My whole body boiled with lust, and I cannot describe the agony of my sexual organ. I tried to explain it to myself in some way but couldn’t... When I shut my eyes, I saw, right in front of me, a beautiful naked girl inside the red light. Even though I didn’t want to see her, she appeared. Full fear and remorse, I opened my eyes. I still saw the divine red light. Within it, Jagadambla, the naked girl, still stood ... It was all being forced on me against my will... I was overcome with remorse and could not meditate anymore.’ (Muktananda 2000 p.107)

  ‘Afternoon came, and I meditated a little, but the same naked woman appeared. [...] As soon as I sat down, my meditation would start with full force... Almost immediately I was deep in samadhi and then suddenly full of sexual desire. The naked woman pursued me and stood before me... God knows where she came from; no one had invited her. She did not ask anything from me. She simply ruined my meditation, disturbed my sex organ...’ (Muktananda 2000 p.108-9)

  [...] ‘This time there was no sexual desire, but it seemed that I was to be saved from one danger only to meet another... These phases, moods, and conditions were all the divine kriyas of Siddha Yoga, but because I didn't know this I was confused.’ (Muktananda 2000 p.111)

  ‘She was, in fact, Mahadevi, the great goddess Kundalini... The next day, Mother Kundalini stood in the red aura again, but this time, I could see Her supremely divine beauty, [...] Now this Shakti became my Guru.... I had taken Her for a mortal, an ordinary woman of the world.’ (Muktananda 2000 p.117)


  ‘Part One: The Journey – As I sank into meditation I found myself descending through space and time, as if from high above the earth, to an island nation of old in a northern sea. [...] A fiery independent young Queen ruled this country. [...] She paced around the royal castle and roamed the shores of her great nation, unable to spend the restlessness that agitated her. [...] Gathering her ministers and advisors together, she told them, “I’m going in search of the mysterious lands beyond the vast oceans far to the south. We’ve always heard rumors of a wondrous rich land beyond turmoil, beyond time. I’m going to find that place.”’ (Edwards 2000 p.42-43)

  ‘I believe that whatever images, insights, thoughts or other expressions of the truth that come into my mind, heart, or body belong only to the Divine and not to the “me” or the “mind/body” with which I am ordinarily identified.’ (Edwards 2000 p.42)

- ‘One night a “good woman” appeared at the Gardener’s door, calling herself his wife. She showed him [...] when this was done, they disappeared together. Subsequently the local people se up a shrine to them.’ (Cleary 2000 p.391, tale of the gardener)

**Mystery of Female nature: health-sanity of a woman’s lifeworld**

‘The Female’, as something mysterious, can also be related to prehistoric cultures, still not well known or understood. In archaic remnants of Neolithic myths, the colours most often associated with ‘The Female’ are yellow and red, with some fancy medieval interpretations (for example Wong 2000 pp.128). I have taken these colours to be global properties of a generic ‘female framework’ for understanding living, ‘The East’ (see <Ancient perspectivalism, the Earth and The East> and <Extract F11\ Red>, in particular for the process of ‘beheading the red dragon’). Other colours are also mentioned in a number of ancient texts and in particular Chinese alchemical writings, especially silver (Furth 1999
p.111) and green, which also corresponds to the gall bladder (Despeux & Obringer 1997, p.117). These could possibly be studied in relation to medieval observations of illnesses of girls at puberty, ‘green sickness’ or ‘chlorosis’ (King 2004), the ashen complexion of a bloodless face, to oils and ointments used in archaic healing practices and widely used in contemporary nutritional therapies for inflammatory conditions, to the findings of Budwig (1971, 1972, and 1992) and Bouic (Bouic et al. 1996 and 1999) relative to the immune system, to green digestive secretions and the fluorescent protein of medical biochemistry.

‘Chlorosis’ is also a disease of plants involving pigmentation. The mystery of the woman’s physical nature is a problem for women’s health (Furth 1999, see also Despeux & Obringer 1997). For humanity also: it can affect both behaviour and lifeworld, and cause ‘nexusial resonance’ (see endnote <C9>). In an extreme form, such illnesses cause psychic activation.

- ‘Finally, the most dangerous, life-threatening forms of depletion fatigue – “bone steaming” – required “separate prescriptions”. To today’s readers, such advanced fatigue, eventually penetrating to bones, sounds like the tubercular “consumption” of early modern European medicine in its patterning of physical decline, respiratory distress, emotional volatility and sexual excitability. The sufferer experiences shortness of breath, loss of appetite, fierce sweats, cold extremities, dreams of intercourse with ghosts, ...coughing and pain in the side...’ (Furth 1999 p.81)
- ‘a woman sitting on a scarlet beast... in her hand a golden cup full of abominations’ REV. 17:3-5
- ‘and on her forehead a name... mystery... the great...’ REV 17:5
- ‘I will tell you the mystery of the woman and the beast that carries her... her plagues’ REV. 17:7
Extracts F15 – Virtual reality and space

The following text extracts constitute a sampling of our collective understanding of how we ‘create reality’ in the mind subjectively or individually, and reach a collective or intersubjective consensus on a reality that can be considered objective or common to the senses of all humans, and physical. In other words, these realities are of three kinds.

(1) Subjective, individual realities are mediated by the mind and brain-interpreted perception or ‘extra-sensory perception’ (ESP, psychic or paranormal). I call this reality ‘sensate’ because it is bound with emotion and the pleasures or pains of sensations. This reality is culturally bound and takes forms drawn from one’s culture (Stace 1960, 2001), or from ‘structures of consciousness’ that reenact in each person’s mental development the collective evolution of human culture (Wilber 1977, Gesbser 1985).

(2) The objective reality, commonly accepted is spatial, physical, material, and the basis for scientific realism or philosophical physicalism, and which is sensory (5 senses in Western culture).

(3) There is also non-normal reality that is undifferentiated, often called ‘One’, and is related to a state of not-self, or is a ‘place’ impossible to name (see <Extracts F12\ Mysterious pass or place>). It is often considered spiritual, but can also be a ‘direct’ reality, directly accessed by the mind without a self (Buddhist philosophy) or intellectual discrimination (Husserl – see Valle & Halling 1989), or ‘actual’, related to physical sensations that are internal to the body (e.g. in Qigong or Tai Chi), because not ‘sensory’ per se., There is cultural consensus on its existence, but it is understood as unstable, not permanent, accessible only to special people, or only after special practice. Philosophers also sometimes associate it with animal cognition, and Tulku (1976) describes it as ‘natural awareness’. Explanations concerning this reality are always confusing because they use the very concepts and experiences that this reality does not involve (e.g. self, time and space, or systems – see for example Macy 1989).

Subjective and objective reality have an antecedent in primitive realities that did not differentiate the individual and the collective, body from mind, dream from waking. Krippner & Sichelman (2000) notes that shamanic realities ‘have consensual validation and waking life consequences’, Jaynes (1976) describes the archaic ‘bicameral’ consciousness (hearing ‘the gods’), Devereux (1992) describes the landscapes of the aboriginal DreamTime. It is related to myths and Gebser’s name for it, ‘mythical consciousness’, has been adopted in transpersonal psychology. These primitive realities are construed as having been consensual, collective, and an origin of the modern individuated self-consciousness (having an individual ‘self’), a notion that was expressed already in ancient philosophies of
India. Most authors agree that the objective, spatial, physical, material reality—‘space’—is perceptual, sensory, and is modelled according to visual and auditory parameters (eg Craig Nersessian & Catrambone 2002):

- ‘There is a vast cognitive science literature on mental imagery that provides evidence that humans can perform simulative imaginative combinations and transformations that mimic perceptual spatial transformation…. These simulations are hypothesized to take place using internalized constraints assimilated during perception.’ (Nersessian 2002, p.139)

The visual is reflected in the ‘advanced’ knowledges of both science and core tradition (visual imaging technologies and visual symbols). The auditory is reflected in terms such as stochastic resonance, the ‘idea of resonance’ (Le Blanc 1985, Gebser 1985 p.203-205) in ancient cultures, and nexialist thinking, but also in ‘The Word’ in religious paradigms. I could find no literature relating both visual and auditory to both the fundamental or primary parameters of explanation and experience – N2d-duality and N3p-polarity (or binary nodes and modal frameworks) —; only one is usually addressed, duality being related to time, and polarity to spaces. Only one of the two (duality or polarity) is habitually taken as the basis for a new paradigm of cognition (eg CNRS 2006, ARCo 2006, MathPages: ‘the dual of subjective experience’).

The connection is rarely made between the scientific and human representations and the prosaic reality of daily life that includes the constraints on the body-brain, felt through the thinker’s health, level of brain-mind activity and of psycho-social stress, and which results in the limitation of ‘apprehending’ to sensory perception. For example, a sensation of swelling in the head or of high ‘firing’ activity in the brain, can ‘prime’ polar notions of ‘reality’. Yet it seems to me that few make the connection between general ‘space’ (the objective, physical, material, and perceptual) as an explanation and sensory perception as an experience of daily life physicality. The idea of constraint remains intellectual:

- ‘To explain how model-based reasoning could be generative of conceptual change in science requires a fundamental revision of the understandings of concepts, conceptual structures… A basic ingredient of the revision is to view the representation of a concept as providing sets of constraints for generating members of classes of models. Concept formation and change is then a process of generating new, and modifying existing, constraints.’ (Nersessian 2002 p.143) […] ‘As employed in model-based reasoning, I propose that analogies serve as sources of constraints for constructing models.’ (op. cit. p.145).

Consequently, the daily life ‘space’ that we ‘perceive’ is usually simply taken for granted, in sciences, and is considered a ‘lower’ reality, in human fields, compared to mental and human spaces, without explanation for this devaluation. I could not find a description of the ‘origin’ of the 6-directional or 3-dimensional ‘volume’ reality (eg the ‘body’) that would not refer back to either a FlatLand space plane, in physics, or to the ‘4 directions of the Earth’ and to tradition, in humanities. Yet these dimensions are directly related to definitions of inside and outside of the body of a skin-encapsulated (Watts undated) ‘body’ system, closed or open,
of intervals (Watts undated) and to direction or orientation, with activity in between.

These are the basis for both Western biomedicine and Eastern-inspired healing practices. To understand the origin of these 4 flat directions was one of my accessory studies (lasting two years), which involved a particular way of tracing etymology. Is it a coincidence that our normal perceptual space is a conventional euclidean space, a ‘flatland’? (Todd et al. 2001, 1999). The distinction of inside-outside is also a major notion in topology (eg double-sided surfaces):

- ‘Outside and inside are the two different values of a measure called parity’, and which depends on the ‘number of boundaries crossed’ [even or odd numbers], thus ‘changing the connectedness, changing the parity’. ‘By fixing the starting-parity as outside, you can easily, by “evens-and-odds”, tell “where you’re at”’. (Britton 2006)

- ‘A simple trick illustrates topology: taking off a vest without taking off a coat, since (topological) the vest is outside the coat -- in the sense that a paper lying on the bottom of a wastebasket is really outside the basket, not in it, since being in would require removal of a boundary. One puts an arm through one vest hole; pulls the coat through this vest hole until it is hanging on the other arm; then pulls the through that other vest hole, where it is obviously “outside”. ‘(Britton 2006)

It is also the basis for the idea of the body as a machine, vehicle, or container for the human mind, its instrumental brain, the senses of its head, and its constructed, or framed (Rosenberg quoted in Furth 1999 p.13) realities. It is the mind’s memory that is blamed for incomplete healing and scarring that remain despite the cells of the body being totally renewed constantly (eg psychoneuroimmunology, Chopra 1990), and which Williamson & Pearse (1980) and many others consider the ultimate source of health.

I have come to consider the spatial, systemic, and memory-bound reality of the ‘physical / material body’ as a nexial-topologic projection that is bound to operating the body by ‘brain central control’ and sensory-based feedbacks. This is involved in the loss of internal sensations that is correlated with nexial activation of ‘effort’ (eg stress, survival, work). Both these represent the loss of the ‘ease’ of ‘proto-health’.

This loss of ease is a way of formulating constraint, and governs the models of ‘reality’ we create:

- ‘Physical activity and conceptual thought have come together primarily in studies of gesture and language. [...] One relevant finding is that physical activity can prime sensibility judgements. [...] Physical activity can actually help generate perceptual simulations. [...] Moreover, we argue that for physical activity to be useful it need not explicitly mimic events or situations under consideration. [...] A convergent force image schema might, for example, be elicited by any sort of compressive activity.’ (Craig, Nersessian, & Catrambone, 2002, pp.181-4)

For example, a quasi-permanent sensation of pressure in the head or of high-‘firing’ activity in the brain can rule a nexialist modelling based on polarised activity. The following text extracts aim to show that the collective consensus of physical-material reality is rarely challenged.

- ‘Plato has also postulated a tripartition of the soul, which like any trinitary form is characteristic of the mental structure and may be seen as a direct connection to the tripartition of time effected by
Parmenides, who was the first to posit the three-phase nature of time. This gave rise to the problematic aspect of the future. [...] The dimension of the future necessarily lends a forward thrust to spatiality, giving both space and time the semblance of direction. Let us take note of this result: our conceptual time is not a psychic but a mental phenomenon which proceeded from the psychic: it is the line that severs the circle and thus forms the basic dimension of a four-dimensional space.' (Gebser 1985 p.178)

- 'cognized environment – an internally simulated world... produced by a field of neural entrainments that constantly in flux but exhibits recurrent patterns ... in a dialectic arising between ... intentional processes and the sensorium, ... essentially a symbolic process.' (Laughlin 1990 p.334-335)

- 'Society not only controls much of the conditioning of neural entrainments, but is also able to control the cognized environments and behaviors of group members by manipulating objects as symbols. [...] Cosmological understanding is depicted in symbolic dramas that in turn lead to individual experiences, which are then interpreted within the framework of the cosmology that first produced the experience-thus completing a "cycle of meaning".' (Laughlin et al 1990 pp.335)

- 'There is compelling evidence from parapsychological research that at least some of these reports have consensual validation and waking life consequences. Shamanic models of "reality" (which reflect shamanic philosophies) also have been ignored in mainstream academic circles. They provide anecdotal evidence, congruent with parapsychological data, and need to be reconsidered by the dominant Western academies because these models encompass anomalous dreams, and because they furnish provocative data. [...] Both Tibetan Buddhist philosophy and Western social constructivism describe how the "individual self" is socially constructed. These "selves" are manifestations of the "filtering" process described by Bergson, but during dreams the "filters" often collapse and humans are opened not only to the subtle signals described by Wolf but to new conceptions of being such as the "wholeness of the events of our lives." [...] Perhaps the attempt to distinguish "dream reality" from "waking reality" is part of a larger program, one that – in the West – typically distinguishes object from subject, science from myth, intellect from body, reason from intuition, modernity from postmodernity, the normal from the paranormal, humans from nature, men from women, monotheism from paganism, technology from "spirit" –basically, the established order from the "other." [...] that can only be treated by Westerners safely as "object" lest they slide through the "filters" that Westerners have erected to protect their "reality."' (Krippner & Sichelman 2000)

- 'The mind became identified with the simulation and made it perfectly real. [...] Simulation [of flight] can readily become experiential reality. [...] With my interest in altered states of consciousness, I find the possibilities of modelling and communicating the nature of various altered states through virtual reality simulations quite exciting. [...] We each live "inside" a world simulation machine. We almost always forget that our "perception" is a simulation, not reality itself, and we almost always forget that we have anything to do with the particulars of how the simulation works. I personally find ... exciting that this is just the kind of model of consciousness I proposed in my systems approach for understanding altered states (Tart, 1975), and the technology of virtual reality is an excellent demonstration of that approach. Let me give you an example of the operation of our personal world simulators, our virtual reality creation mechanisms. In the mid-1960 's, a friend, Robert Monroe, and I invented a device for creating a small "psychedelic" light show in people's own living rooms. We put about sixteen Christmas tree light bulbs in the base of a round container. Each bulb was the kind with a thermal breaker built into it, so it blinked on and off, and each colored bulb had a slightly different blink rate. If you looked directly at the bulbs, you saw an interesting bunch of blinking bulbs. We then put a metal plate over the bulbs with a bunch of oddly shaped holes in it, so the bulbs would cast little colored shadows. Then we mounted another plate with oddly shaped holes in it over the first one, and had a motor rotate this second plate very slowly, so the light was coming through combinations of openings that were slowly changing the combined shape. The lights and shadows were then projected on to the inside of a translucent hemisphere. Now you turned on the "Lori Lite," as we called it, and played some music. I cannot recall how many arguments I got into with people who wanted to know how we were getting the light pattern to synchronize with the music so beautifully. It was perceptually obvious to them that the light patterns and music were synchronized, and so there had to be some
highly sophisticated electronic system synchronizing the sound and the light. I would explain that there was no hidden mechanism for synchronization, it was just a bunch of light bulbs blinking in a quite random way, but almost no one would believe me. Finally I would "admit" that, although it was hidden from their sight, there really was a very sophisticated computer synchronizing the light patterns and the music. This explanation was not really a lie. The "computer" was (and is) located in each viewer's head, and one of its main functions is to "synchronize" events, to "make sense" out of an incredibly complex world. The accepted modern understanding (which I think is actually incomplete in important ways, but that is not germane to our discussion here- see [Tart, 1990a] ), starting with a materialistic view of the world, indicates that we do not experience the outer world directly but indirectly. Various physical energies like light and sound are not experienced directly. [...] what we experience is not the world per se but processed neural abstractions. Although these neural events are initially related to external world events, this relationship may be greatly altered by the time we deal with the final neural events comprising consciousness. That final pattern of neural events that we are conscious of, and the other neural events that lead to it, are our personal World Simulation Process, our mechanism creating the virtual reality in which we experientially live. The structure of our nervous system, as programmed by our personal psychology, constitutes our stereo headphones and "eyephones," our "touchphones," "tastephones," and "smellphones." [...] "The basic function of the World Simulation Process is to create, maintain, expand and update internalized, rapidly functioning internal models of the real world that will enable us to survive and function efficiently..." (Fodor, 1985, p.4) [...] What are the limits of arbitrariness of construction of our internally generated virtual realities that are compatible with survival?" (Tart 1990)

- ‘Let’s take, first of all, two very fundamental poles. We’ll call them respectively ‘solid’ and ‘space,’ if you want existence and non-existence, because we tend to treat space as something that is not there. That’s simply because we don’t see it; we ignore it. We treat it as if it had no effective function whatsoever, and thus when our astronomers begin to talk about curved space, expanding space, properties of space, and so on, we think ‘What are they talking about? How can space have a shape? How can there be a structure in space, because space is nothing.’ But it isn’t so. You see, this is something we completely ignore. Why? Because we have specialized in a form of attention to the world which concentrates on certain features as important. We call this conscious attention, and therefore it ignores or screens out everything which doesn’t fit into its particular scheme. And one of the things that doesn’t fit into our scheme is space. So we come into a room like this and notice all the people in the room, and the furniture, and the flowers and the ornaments, and think that everything else just isn’t there. I mean, what about this interval that is between me sitting here and the inner circle of people who are arranged around the floor? What a mess we would be in if there wasn’t that interval. You know, I would be blowing down your throat to talk to you. Now intervals of this special kind are tremendously important. Let me demonstrate this to you in a musical way. When you listen to a melody, what is the difference between hearing that melody and hearing a series of noises? The answer is that you heard the intervals. You heard the musical spaces between the series of tones. If you didn’t hear that, you heard no melody, and you would be what’s called tone-deaf. But what you actually hear is the steps between the levels of sound—the levels of vibration—that constitute the different tones. Now those weren’t stated, they were tacit. Only the tones were stated, but you heard the interval. So it made all the difference whether you heard the interval or not. So in exactly the same way, the intervals between us, seated around here, constitute many important things.’ (Watts undated)

- ‘Mind itself has no substance. It has no colour or shape. It has no form, no position, no characteristics, no beginning, no end. It is neither within nor without [...] It is beyond logical process, beyond time and beyond all existence, [...] There is no other ‘thing’ to obscure the moment – neither a subject nor an object, neither time nor space. [...] The “field” of awareness is... neither “outside” the body nor “inside” the mind. It is neither mental nor physical [...] Just relax, without effort, completely natural... This is the natural state of mind which is our own self-healer.’ (Tulku 1976)
Extracts F16 –

Dariable body: twist, degeneration, ‘incomplete’

A number of ‘anomalies’ in anatomy and physiology are unexplained, ‘not well understood’, considered normal statistically, or explained by growth being too fast or unfinished (in children before puberty) or as being inevitable or necessary. For many of them, there does not seem to be any intrinsic reason, and nexial-topologic modelling could shed light on how these anomalies happen.

Variable Body: twisted, ‘growing too fast’, degenerating, incomplete...

- Twisted shape of heart attributed to ‘growing too quickly’: ‘At the time the four chambers [of the heart] appear, the heart starts bending into an S shape. The ventricle moves caudally and the atrium cranially, assuming their adult positions. This bending occurs because the ventricle and bulbus cordis grow quickly, and the heart is unable to accommodate elongation within the confines of the pericardial sack. During month 2 of [fetal] development, the heart divides into its four definitive chambers by the formation of its midline septum and valves.’ (Marieb & Mallatt 2003, p.538)

- Right lymphatic duct: ‘Whereas some individuals have two lymph ducts, others have just one. [...] When it is joined by the three trunks, the thoracic duct drains three quarters of the body: the left side of the head, neck, and thorax; the left upper limb; and the body’s entire lower half’. Some people have a short right lymphatic duct...; when present, its trunks drain the upper right quarter of the body.’ [4th lymphatic trunk] (Marieb & Mallatt 2003, p.589)

- Spinal cord of complete length until 3rd month of fetal development; but then recedes: ‘Until the third month of development, the spinal cord does run all the way to the coccyx, but thereafter, it grows slower than the caudal vertebral column... By the time of birth, the spinal cord ends at L3. During childhood, it attains its adult position terminating at the level of the intervertebral disc between L1 and L2. (This is merely and average level; it varies among different people, from the inferior margin of T12 to the superior margin of L3.’ (Marieb & Mallatt 2003 p.394) The spinal cord also has bulges.

- Brachial plexus: bundle of nerves that supplies the arms, gathered from C5-C8-T1, sometimes also from C4 or T2. (Marieb & Mallatt 2003 p 429)

- Loss of red bone marrow (becoming fatty yellow marrow that does not make red blood cells);

- Thymus growth until puberty and then atrophy (shrinking): ‘Prominent in newborns, the thymus continues to increase in size during childhood, when it is most active. During late adolescence, it begins to atrophy gradually, as its functional tissue is slowly replaced with fibrous and fatty tissue.’ (Marieb & Mallatt 2003, pp.595-6)

After puberty, it ‘undergoes a gradual process of involution (replacement of parenchyma by fat and fibrous tissue), resulting in a slow decline of immune function throughout adulthood.’ (Thymus 2006)

- Tonsils regressing after 14: ‘The tonsils are regressing by age 14. [...] After childhood, some immune organs become less active and begin to shrink... and late in life... their efficiency... wanes. [...] Just why this decline occurs is not understood.’ (Marieb & Mallatt 2003, p.599)

- ‘The immune system of newborns was long thought to be too immature to attack invading pathogens.... New, redesigned experiments have shown that newborns respond to new antigens just as vigorously as do adults, with both T cells [thymic] and antibodies.’ (Marieb & Mallatt 2003, p.599)
• Loss of brown fat: 'Brown Adipose Tissue. The typical nutrient storing fat we have considered so far is white adipose tissue or white fat. Another type called brown adipose tissue, produces heat and is a nutrient consumer. Such brown fat occurs only in babies, who cannot yet warm themselves by shivering. It is located in the hypodermis between the two scapulae (shoulder blades) in the center of the back, on the side of the anterior neck, and on the anterior abdominal wall. It is even more richly vascularized that white fat. Each brown-fat cell contains many lipid droplets and numerous mitochondria, which use lipid fuel to heat the bloodstream rather than produce ATP molecules.' (Marieb & Mallatt 2003 p.98)

• Cisterna Chyli: '... in 30-40% of people, the inferior portion of the thoracic duct of the lymphatic system includes a dilated portion called the cisterna chyli which sits on the L1 and L2 vertebral bodies.' (Marieb & Mallatt 2003 p.589)

• Spleen size and loss of hematopoiesis function: 'The size of the spleen varies greatly among individuals. [...] The spleen is a site of hematopoiesis in the fetus [...] and can resume this function under certain circumstances, even in the adult. [...] The spleen can regenerate [...] and [spleen] can resume this function under certain circumstances, even in the adult.' (Marieb & Mallatt 2003, pp.595-6)

• Bone marrow function: 'At birth, all marrow is red. ... The replacement of red marrow with yellow marrow in the limbs occurs between the ages of 8 and 18 years.' (Marieb & Mallatt 2003, p.512) 'Liver and spleen... are the major hematopoietic organs until month 7 [of gestation, when] bone marrow become the major [source] and is the only hematopoietic organ from birth on. Should a severe need for blood cell production arise, however, the liver and spleen may resume their blood-cell-forming roles, even in adults. [...] The most common diseases of the blood that appear with ageing are chronic leukemias, anemias, and clotting disorders... The formation of abnormal thrombi and emboli reflects the progress of atherosclerosis, which roughens the linings of arterial walls.' (Marieb & Mallatt 2003, p.518)

• Spine curvatures: 'Normal' spine twists (e.g. scoliosis, and the 'curves' of normal posture, at T1, T5, L2, Left-right deformations of spine ('slight scoliosis')

• Parotid gland: Accessory parotid gland (glandula parotida accessoria) is a frequently present, more or less detached portion of the parotid gland' (Marieb p. 643)

• Embryonic renal arteries: 'the upper embryonic renal arteries are not degenerated in 30% of people' (Marieb & Mallatt 2003 p.684) – see Gould 1995 pp.42-43 on successful adaptations by degeneration as much as by complexity increase)

• Bone renewal decreasing from birth.

• Tissue repair & scar tissue: 'Tissue repair can occur in two major ways: by regeneration and by fibrosis. Regeneration is the replacement of a destroyed tissue by new tissue of the same kind, whereas fibrosis involves the proliferation of a fibrous connective tissue called scar tissue. [...]Tissue repair in a skin wound involves both regeneration and fibrosis. [...] The blood clot is replaced by granulation tissue, a delicate pink tissue containing capillaries... and proliferating fibroblasts that produce new collagen fibers. [...] As more collagen is made, the granulation tissue transforms into fibrous scar tissue.' 'Marieb & Mallatt 2003, p103)

’Histamine, the most important mediator, increases the permeability of the nearby capillaries, causing more tissue fluid to leave the bloodstream. The consequent swelling of the areolar tissue with fluid is a major characterisation of inflammation. Heparin in mast cells was recently found to bind and store the other mast cell molecules, and to regulate their action. Besides mediating inflammation, mast cells also seem to play a role in our defences against parasitic worms, our natural immunity against bacteria, and the normal repair of fibers, ground substance and blood vessels in connective tissues.' (Marieb & Mallatt 2003, p.91)

• Projections of pain or structural damage to Left or Right: eg spinal twists (eg scoliosis, facial features twisting 'with age', alternate nostrils breathing, face and body weakness
• Preferences: many chronic diseases are more common in women and children (and other types in men)
• Alternate nostrils breathing (see below).

‘Normal’ Adult:
• ‘Gravid’ female: post-pregnancy weak health, partum pain, female instability.
• Sensitivity to ‘outside’ conditions (‘attacks’).
• Sensory (visual, auditory) with other senses blunted, and without ‘sensing’, physiologic instincts geared to support brain activity, aimed at sustaining work-stress-alert; loss of internal sensation (body-self) and insensitivity to ‘others’ and self-ish survival behaviour of body-mind-person.
• Uneven body temperature such as hot or cold head, hot body by almost +1°C (36.5°C → 37.2°C) (with dire effect on histidine and ground substance), infants do not shiver + infant’s heat has an even distributed body-brain (MRI imaging).
• Drink a lot of drinks spiked with juice or other stimulants, yet do not assimilate very effectively (water metabolism ineffective); end of day swelling and dark under eyes = ‘tired’, problems of blood pressure, blemished or uneven skin (hence make-up), livid lips or even face (hence lipstick).
• Problems digestion and malabsorption (eg vitamins straight into urine, constipation), eat a lot and at appointed times, need to eat cooked and processed foods, biased taste: carbohydrates, proteins or oils, altered taste (not attracted to fresh foods); need compensatory nutrition chronically (salt, sugar, sour or bitter, culinary herbs), addictions (including work, sex), dependencies (including social).
• Need countless compensatory contraptions to hold body up (eg chair back), to protect (hat, sunglasses, sunscreen, heating, air conditioning, vaccines...), to compensate for physical stiffness or weakness (eg furniture, houses, vehicles); worry, anxiety, drives, psycho-somatic tension, ‘monkey mind’, agitated living.
• Poor breathing (eg uneven L-R nostrils air flow, swollen sinuses & clogged nose with ageing, top of lungs or into belly, through mouth, or blocking, anaerobic mode and oxidant species of oxygen,);
   Ageing damage: balding arthritis, senile brain, loosing eyes/ears/ teeth/ mind / body limbs function, swollen belly, mass turning to cellulite, getting fat, shrinking or concretions, growths, muscles, liver and heart turn to fat: ‘normal with ageing’.

Self reports concerning sinuses clogging and headaches in older adults considered healthy are common – a ‘hidden’ or ‘small’ problem:
• Self-report – ‘One morning I had painfully clogged sinuses. No amount of blowing gave me relief. But two minutes of Qigong had my sinuses draining and completely pain free. For me these common occurrences have made the course valuable beyond estimation.’ (Bissonnette 2006)
• Self-report – ‘Partly hidden upsides to using ROBERTA every day: health: […] I no longer wake up with clogged sinuses; my body feels relaxed; and free of headaches, my skin is clear, I’m more careful what I eat, I remember to exercise and I put more energy into it.’ (Effort free newsletter, 2005)

Childhood

‘Normal’ illnesses of childhood:
Ear infections, tonsils infections, ‘cold’, fever, flu, upper respiratory infections, asthma; spreading incidence of early puberty (two or three years) or too fast, acne (spreading on face, spreading in population), of diabetes and cancer.
Normal neonatal disorders:
Blemishes at birth (e.g. taches café au lait on most people’s body); neonates do not shiver to warm up or have a hypoxic drive for breathing; they learn it; baby colic; problems with sleep; problems behaviour: ankle biting, ‘terrible two’, tantrum.

Normal discomforts of childhood, some ‘hidden’ to most adult’s awareness:
Bed wetting, hiccups (especially when eating dry food), car sickness, nausea, pain in the side from lack of oxygen; problems sleep: nightmares, fear of the dark, of monsters, agitated sleep, wake up at night, alteration of bio-rhythm (circadian rhythms) until it becomes difficult to wake up in the morning and bedtime becomes late; problems with feeding (dependence on repetitive feeding), diet (developing need for sugar and processed carbohydrates-fats-meats and dislike of fresh foods); developing digestive ineffectiveness and disorders; Left-right deformations of spine (slight scoliosis), face and body one-sided weakness (becoming more apparent with age); ‘extremely healthy’ (no bacterial, fungal or viral infections, but other problems present.

Normal unstable childhood:
Medical statements about these conditions: Normal children... ‘grow out of it’; more girls or boys; not sick; not harmful, the ailments or ‘bad behaviour’ are triggered by: tiredness, anger, frustration, stress, anxiety; ‘occurs when relaxed, bored, or tired’ associated with ear infection, emotional distress to stop the triggering: soothing or calming or help sleep.

Abnormal ‘extremely healthy’:
Unexplained ‘extremely healthy’ (no bacterial disease) can result in early ageing affecting especially brain and kidneys; found also in some mystics. (The opposite is known: many mystics or geniuses are afflicted with illnesses.)

‘Normal’ weird or ‘badly behaved’ bodymind ... until ‘mature brain’ (Western) or ‘mature kidneys’ (China)
Breath holding (begins 6 months-2y, stops by 5-6y... but then kids unconsciously train to stay underwater... for anaerobic drive?), developing into training hypoxic drive (eg when swimming); nose picking (starts 4-5 y); thumb sucking or finger or cloth (50% age 2-4); hair twisting or pulling; nail biting (30-60% aged 5-10, 20% teenagers, more in those with flaky nails); bruxism (tooth grinding) (more than 50%, 15% adults, particularly noticeable 6months & 5y when teeth come in); head banging (15%) and other rhythmic movements: rolling, rocking and swirling; self-hurt, running into things, falling, not knowing one’s strength; problems behaviour: ‘ankle biting’, ‘terrible twos’, hyper-active (‘full of beans’ to ADHD) / hypo-active (dislike of walking, won’t exercise), developing egoism from shyness or teasing and bullying, developing chaos of behaviour, emotion and psychology in teenage, spreading addiction to over-focused activity (often technology-related)

Normal behaviours:
Chronic sneeze-stretch-yawn, ‘boredom’; dry, ‘stinging’ eyes (itchy or burning) and ‘sand’ at corner of eyes morning and night, multiple bruises, thirst up to eating ice, morning swelling, ‘poing-de-côté’ (side pain when running and lacking oxygen), increasing incidence of headaches; loss of body tone by age 6, and postural slouch, increasing incidence of diffuse pain (eg feet hurt when walking on pebbles or when jumping down with whole body weight); feeling hot when adults feel cold and impose coat; thumb or blanket sucking, twisting hair, and other repetitive behaviour; progressive change of taste in foods (especially learning to like tomato, onion, garlic, ‘dark’ tastes such as coffee or wine [or being unable to learn to like]); play with holding breath underwater (unconscious self-training to trigger breathing by lack of oxygen). See also ‘green sickness’ (chlorosis).

Approximate body
‘For complex reasons slightly more tissue fluid arises from the arteriole end (“upstream” end) of each capillary bed than reenters the blood at the venue end (“downstream” end). The lymphatic vessels functions to collect this excess tissue fluid and return it to the bloodstream. Indeed, any blockage of the
lymphatic vessels causes the affected body region to swell with excess tissue fluid, a condition called edema.’ (Marieb & Mallatt 2003, p.584) (see <Extracts F10> Left-Right>

Uneven nostril breathing and ‘alternate nostril breathing’ yogenic practices

- ‘Uninotral breathing facilitates the performance on spatial and verbal cognitive tasks, said to be right and left brain functions, respectively. Since hemispheric memory functions are also known to be lateralized, the present study assessed the effects of unilateral breathing on the performance in verbal and spatial memory tests. School children (N = 108 whose ages ranged from 10 to 17 years) were randomly assigned to four groups. Each group practiced a specific yoga breathing technique: (i) right nostril breathing, (ii) left nostril breathing, (iii) alternate nostril breathing, or (iv) breath awareness without manipulation of nostrils. These techniques were practiced for 10 days. Verbal and spatial memory was assessed initially and after 10 days. An age-matched control group of 27 were similarly assessed. All 4 trained groups showed a significant increase in spatial test scores at the group showed no change. Average increase in spatial memory scores for the trained groups was 84%. It appears yoga breathing increases spatial rather than verbal scores, without a lateralized effect.’ (Naveen et al. 1997)

- ‘Mind–body interventions are beneficial in stress-related mental and physical disorders. Current research is finding associations between emotional disorders and vagal tone as indicated by heart rate variability. A neurophysiologic model of provocative breathing proposes to integrate research on the mind with polyvagal theory, vagal stimulation, hyperventilation, and clinical observations. Yogic breathing is a unique method for balancing the autonomic nervous system and influencing psychologic and stress-related disorders. Many studies demonstrate effects of yogic breathing on brain function and physiologic parameters, but the mechanisms have not been clarified. Sudarshan Kriya yoga (SKY), a sequence of specific breathing techniques (ujayi, bhastrika, and sudarshan Kriya) can alleviate anxiety, depression, everyday stress, post-traumatic stress, and stress-related medical illnesses. Mechanisms contributing to a state of calm alertness include increased parasympathetic drive, calming of stress response systems, neuroendocrine release of hormones, and thalamic generators. This model has heuristic value, research implications, and clinical applications.’ (Brown & Gerbarg 2005)
Extracts F17 – Anatomy notes

The following are notes I gathered them so I could refer to them often, to make connections with sensations observed directly and observations of the bodies of others. Some are straight quotations taken from medical textbooks, some are summaries I wrote for myself. They may be useful to the reader who wishes to explore the body and health in a way similar to the way I did.

Ground substance and other ‘waters’ (serous fluids)

Ground substance holds fluid

- ‘All other tissues and cells in the body either border areolar connective tissue or are embedded in it’ (Marieb & Mallatt 2003, p.89)
- ‘A single kind of cell produces all the fibers of areolar connective tissue: fibroblasts.’ (Marieb p.90)
- ‘The molecules of ground substance are made and secreted by the nearby fibroblasts.’ (Marieb p.91)
- ‘Recall that areolar connective tissues lies between the capillaries and all other cells and tissues in the body, such as epithelium and muscle. Nutrients and oxygen diffuse out of the capillaries and travel through a watery fluid in the extracellular matrix to reach the surrounding cells. Likewise, waste molecules from these cells diffuse back through this fluid into the capillaries, to be taken away by the bloodstream. The fluid that occupies areolar connective tissue is called tissue fluid or interstitial fluid and it derives from the blood itself. That is, all the small molecules of blood (ions, water and so on) are slowly pushed out through the capillary walls to form tissue fluid, which gradually returns to the bloodstream at about the same rate it forms. In your body, there is as much tissue fluid in the matrix of areolar connective tissue as there is blood in all your blood vessels. The part of the extra-cellular matrix that holds this tissue fluid is called ground substance. This jelly-like material consists of large sugar and sugar-protein molecules that soak up fluid like a sponge. These molecules are called glycosaminoglycans and proteoglycans. The molecules of ground substance are made and secreted by the nearby fibroblasts.

So far, we have established that the extracellular matrix of connective tissue is a combination of (1) fibers (2) fluid-holding ground substance. We should now add (3) that fibroblasts attach to the matrix components through integral proteins in their plasma membranes called integrins.’ (Marieb p.91)
- ‘For complex reasons, slightly more fluid arises from the arteriole end (‘upstream’ end) of each capillary bed than reenters the blood at the venule end (‘downstream’ end). The lymphatic vessels function to collect this excess tissue fluid and return it to the bloodstream. Any blockage of the lymphatic vessels causes the affected body region to swell with excess tissue fluid, a condition called edema.’ (Marieb p.584)
- ‘Water, like other molecules, diffuses down its concentration gradient. The diffusion of water molecules across membranes is called osmosis.’ (Marieb p.30)

3 types of connective tissue fiber: collagen, reticular, elastin (Marieb p.90)

Bursae and tendon sheaths

- ‘Bursae and tendon sheaths are not synovial joints, but they contain synovial fluid and often are associated with synovial joints. Essentially closed bags of lubricant, these structures act like ‘ball bearings’ to reduce friction between body elements that move over one another. A bursa, a Latin word meaning ‘purse’, is a flattened fibrous sac lined by a synovial membrane. Bursae occur where ligaments, muscles, skin, tendons, or bones overlie each other and rub together. A tendon sheath is
essentially an elongated bursa that wraps around a tendon like a bun around a hot dog. Tendon sheaths occur only on tendons that are subjected to friction, such as those that travel through joint cavities or are crowded together within narrow canals (in the wrist region, for example).’ (Marieb, p.219)

• **Bursitis**: inflammation of a bursa, usually results from a physical blow or friction although it may also be caused by arthritis or bacterial infection. In response, the bursa swells with fluid. Falling on one’s knee can cause a painful bursitis of the subcutaneous prepatella bursa known as housemaid’s knee.’ (Marieb p.236)

• ‘Most knowledge of human synovial fluid comes from patients with joint disease. Because of the clinical frequency, volume, and accessibility of knee effusions, our knowledge is largely limited to findings in that joint.’ (UW Medicine 2005)

Lymphatic system:
(See also lymphocytes in bone marrow, serous cells, cerebrospinal fluid.).

**Lymphatic vessels**

lymphatic vessels, ducts and trunks, collect the lymph (*lympha*, ‘clear water’) that escapes from blood capillaries into loose connective tissue (which contains tissue fluid), and transport the fluid back to the blood stream, to the veins at the root of the neck. Lymph vessels carry nutrients, proteins, and lymphocytes.

The unpaired *intestinal trunk* receives milky lymph containing digested fats – the chyle (“juice”) – from the small intestines and carries it to the *cisterna chyli*, which sits on the L1 and L2 vertebral bodies, and on to the neck vein and the heart.

The lymph also irrigates the inner ear labyrinth internally (*endolymph*) and externally (*perilymph*); these clear fluids are separate but the *perilymph* is continuous with the *cerebrospinal fluid*.

• ‘The bony labyrinth [of the inner ear] is filled with a clear fluid called *perilymph* (“surrounding water”) [which] is continuous with the cerebrospinal fluid that fills the subarachnoid space.’ (Marieb & Mallatt 2003, p489)

• ‘Whereas some individuals have two lymph ducts, others have just one. […] When it is joined by the three trunks, the thoracic duct drains three quarters of the body: the left side of the head, neck, and thorax; the left upper limb; and the body’s entire lower half’. Some people have a short right lymphatic duct…; when present, its trunks drain the upper right quarter of the body.’ (Marieb, p.589)

The largest vessels are the *lymph ducts*. Lymph capillaries are absent from bone, teeth, bone marrow, and the entire nervous system, which is irrigated by the *cerebrospinal fluid*.

Lymph flows only one way, toward the heart, and under very low pressure, using valves, muscles, the body’s movements and other local pulsations.

• ‘The seemingly useless nervous habit of people who bounce and wiggle their legs while sitting actually performs the important function of moving lymph up the legs.’ (Marieb p.586)

‘For complex reasons slightly more tissue fluid arises from the arteriole end (“upstream” end) of each capillary bed than reenters the blood at the venule end (“downstream” end). The lymphatic vessels functions to collect this excess tissue fluid and return it to the bloodstream. Indeed, any blockage of the lymphatic vessels causes the affected body region to swell with excess tissue fluid, a condition called edema.’ (Marieb p.584)

• ‘Water, like other molecules, diffuses down its concentration gradient. The diffusion of water molecules across membranes is called osmosis.’ (Marieb p.30)

• ‘The lymphatic vessels also perform another, related function. Blood proteins leak slowly but steadily from both capillaries into the surrounding tissues fluid, and the lymph vessels return these leaked proteins to the bloodstream… The proteins in blood generate osmotic forces that are essential for keeping water in the bloodstream. If proteins were allowed to leak from the capillaries without being returned to the bloodstream, a massive outflow of water from the blood to the tissues would soon follow, and the entire cardiovascular system would collapse from insufficient volume.’ (Marieb p.584)
**Paths of immune activation and defence**

The main components of the immune system are:

**Lymphoid organs (organs of immune defence):** lymph nodes, thymus, spleen, pharyngeal tonsils (adenoids), adenohypophysis (part of the pituitary), Peyer’s patches in small intestine and appendix.

**Lymphoid tissues:** inside lymph nodes, and Mucosa associated lymphoid tissue (MALT) in digestive respiratory and reproductive tracts

- ‘Lymphoid tissue [...] is an often-infected connective tissue in which vast quantities of lymphocytes gather. [...] This tissue has two general locations: (1) in the frequently infected mucous membranes of the digestive, respiratory, urinary, and reproductive tracts, where it is called mucosa-associated lymphoid tissue or MALT and (2) in all lymphoid organs but the thymus.’ (Marieb p. 593)

- ‘The structural features of lymphoid tissue serve its infection-fighting role. It is a reticular connective tissue whose basic framework is a network of reticular connective fibers secreted by reticular cells (fibroblasts). (Marieb p. 595)

- ‘Within the spaces of this network, reside the many T and B lymphocytes that arrive continuously from the venules coursing through this tissue. Macrophages on the fiber network kill invading organisms by phagocytosis...’ (Marieb p.595)

- ‘bone marrow is a reticular connective tissue made of a network of reticular fibers secreted by special fibroblasts, the ‘reticular cells.’ (Marieb p.512)

- ‘Liver and spleen... are the major hematopoietic organs until month 7 [of gestation, when] bone marrow become the major [source] and is the only hematopoietic organ from birth on. Should a severe need for blood cell production arise, however, the liver and spleen may resume their blood-cell-forming roles, even in adults. [...] The most common diseases of the blood that appear with ageing are chronic leukemias, anemias, and clotting disorders... The formation of abnormal thrombi and emboli reflects the progress of atherosclerosis, which roughens the linings of arterial walls.’ (Marieb p.518)

(Thymus: made up of two uneven lobes. Sometimes a third part exists: the accessory thymus is a separated portion of the thymus gland.)

**Serous glands, cells, secretions & membranes**

**Serous glands:** Saliva glands, tear glands, parotid glands (open into the mouth, lateral to the second upper molar), ceruminous glands (in ear canal: modified sweat glands emit the waxy secretion that is part of earwax), sweat glands: eccrine (true sweat, respond to heat + stress, acid but no smell, 99% water) apocrine (activated at puberty, true sweat combined with fat and protein, give a smelly, viscous secretion; sebaceum). (see parotid gland)

The parotids secrete only when eating or anticipating a meal, and sit near the ear and the temporomandibular joint. Salivary glands contain serous (or seromucous) cells that secrete serous saliva but also some mucus.

These are exocrine glands that secrete into body surfaces or into body cavities.

**Serous cells** produce watery secretions (different from mucous cells which produce mucus)

**Slippery serous fluid of serosae:**

Serous fluid begins as filtrate from the blood in capillaries in the connective tissue, with the addition of lubricating molecules by the mesothelium.

Serosae: pleura, peritoneum, pericardium – are membranes lining [surfaces of] closed cavities and containing a thin layer of serous fluid. = squamous epithelium on a layer of areolar connective tissue. Secreates a slippery serous fluid.

Different from:

Mucous membranes that line the [surfaces of] tubes of 4-respiratory, 2-digestive, 3-reproductive, 1-urinary tracts – Wet & Moist.

cutaneous membrane = skin covering the outer surface = outer epithelium is thick dermis + inner connective tissue is dense dermis – Dry.
serous gland – protein-rich secretion
mucous gland – glycoprotein-rich secretion

**CerebroSpinal Fluid:**

- ‘The Cerebrospinal fluid bathes the brain and fills the subarachnoid space all along the spine.’ (Marieb p.489)
- ‘The bony labyrinth [of the inner ear] is filled with a clear fluid called perilymph (“surrounding water”) [which] is continuous with the cerebrospinal fluid that fills the subarachnoid space.’ (Marieb p.489)

**Parotid gland:**

- ‘The dominant symptom [of Mumps] is inflammation and swelling of the parotid gland… People with mumps say it hurts to open their mouth or chew.’ (Marieb p.643)
- ‘The secretory cells of the salivary glands are serous cells, which produce a watery secretion containing enzymes and ions of saliva, and mucous cells, which produce mucous. The parotid glands contain only serous cells.’ […] ‘accessory parotid gland (glandula parotida accessoria) is a frequently present, more or less detached portion of the parotid gland’ (Marieb p.643)

**Mucosal surfaces: nutrient absorption or defence secretion**

- ‘The physical and chemical barriers of natural immunity: […] The mucosal surfaces, whose normal physiological functions are absorptive, require the special protection provided by the secretion of mucus and enzymes like lysozyme. If any of these external surfaces are breached, then a variety of cells and secreted molecules provides rapid protection against infection.’ (Staines & Brostoff 1993 p.10)

**Bone Marrow, blood, fats, and nerves**

**Bone marrow**

RED ⇒ in end of long bones (the body of bone is yellow),
⇒ either blood cells or immune lymphocytes
⇒ now: stem cells ⇒ progenitor cells ⇒ red blood cells OR fat, fibroblasts, osteoblasts, chondrocytes (cartilage)

YELLOW ⇒ = red degenerated into fat [can revert]

CHOICE: Red Bone marrow connective tissues
⇒ stem cells ⇒ bone-making cells
⇒ or immature hematopoietic stem cells ⇒ macrophages and bone-destroying cells.

- Flat bones have red or yellow marrow in their spongy bone. (Marieb p.134-135)
- ‘Yellow marrow is a site for fat storage, with little or no role in blood-cell formation.’ (Marieb p.133)
- ‘Only Red [bone] marrow actively generates [red] blood cells [hematopoiesis]. Yellow marrow is dormant; it makes blood cells only in emergencies. [Its] colour reflects the many fat cells it contains. At birth, all marrow is red. In adults, red marrow remains throughout the axial skeleton and girdles and in the proximal epiphysis of each humerus and femur; yellow marrow occupies all other regions of the long bones of the limbs. The replacement of red marrow with yellow marrow in the limbs occurs between the ages of 8 and 18 years.’ (Marieb p.512)
- ‘At birth, all marrow is red. ... The replacement of red marrow with yellow marrow in the limbs occurs between the ages of 8 and 18 years.’ (Marieb, p.513)
- ‘Low oxygen stimulates erythrocyte production’ (Marieb p.513)
- The structure of bone marrow is secreted by fibroblasts. (Marieb p.512-3)
- ‘The kidney secretes erythropoeitin, which signals the bone marrow to increase the production of red blood cells.’ (Marieb p.759)
Blood cells lines in red bone marrow

- "Pluripotential hemapoietic stem cells […] produce lines of progenitor cells of two types: lymphoid stem cells, which give rise to lymphocytes [and osteoclasts (Marieb p.142-143)], and myeloid stem cells., which give rise to all other blood cells, "including erythrocytes." (Marieb p.513)
- "Recently, it was found that some of the cells [in red bone marrow] are human mesenchymal stem cells… [that] can give rise to fat cells, osteoblasts, chondrocytes, fibroblasts, and muscle cells. This raises the exciting possibility that such cells can be extracted and used to regenerate all types of connective tissue and muscle for tissue and organ replacement." (Marieb p.513)
- ‘[…] bone-forming osteoblasts derive from mesenchyme cells, or, in the adult, from mesenchyme-like stem cells in the connective tissues of the nearby bone marrow. Osteoclasts, by contrast, arise from immature blood cells called hematopoietic stem cells, and they may be related to macrophages. (Marieb p.142-143)
- ‘[…] bone marrow … is the only hematopoietic organ from birth on..’ (Marieb p.518)
- ‘Liver and spleen… are the major hematopoietic organs until month 7 [of gestation, when] bone marrow become the major [source] and is the only hematopoietic organ from birth on. Should a severe need for blood cell production arise, however, the liver and spleen may resume their blood-cell-forming roles, even in adults. […] The most common diseases of the blood that appear with ageing are chronic leukemias, anemias, and clotting disorders… The formation of abnormal thrombi and emboli reflects the progress of atherosclerosis, which roughens the linings of arterial walls." (Marieb p.518)
- fat in bone marrow is white fat: ‘adipose tissue’, a loose connective tissue similar to areolar connective tissue but has a nutrient function. In bone marrow, it is deposited in fat cells (Marieb p.97).
- ‘The bone marrow, spleen and lymph nodes, which house many free blood cells outside of their capillaries, consist largely of reticular connective tissue. Fibroblasts called reticular cells lie along the reticular network of this tissue.’ (Marieb p. 98, reticular tissue is discussed further p.512 and p.593, p. 595)

3 types of fiber: collagen, reticular, elastin (Marieb p.90) of the areolar connective tissue

- ‘Lymphoid tissue […] is an often-infected connective tissue in which vast quantities of lymphocytes gather. […] This tissue has two general locations: (1) in the frequently infected mucous membranes of the digestive, respiratory, urinary, and reproductive tracts, where it is called mucosa-associated lymphoid tissue or MALT and (2) in all lymphoid organs but the thymus.’ (Marieb p.593) ‘The structural features of lymphoid tissue serve its infection-fighting role. It is a reticular connective tissue whose basic framework is a network of reticular connective fibers secreted by reticular cells (fibroblasts). (Marieb p. 595)
- Bone marrow is a reticular connective tissue made of a network of reticular fibers secreted by special fibroblasts, the ‘reticular cells. (Marieb p.512)
- ‘Within the spaces of this network, reside the many T and B lymphocytes that arrive continuously from the venules coursing through this tissue. Macrophages on the fiber network kill invading organisms by phagocytosis…’ (Marieb p. 595)
- ‘Vitamin D: The Photolytic Reaction – Vitamin D should be reclassified as a hormone since it is only under conditions of inadequate exposure to sunlight that dietary intake is required. Vitamin D is in fact a group of closely related sterols produced by the action of ultraviolet light on certain provitamins, ergosterol in plants and 7-dehydrocholesterol in animals. The latter is synthesized in the liver and is found in the skin. The products of the photolytic reaction are ergocalciferol (vitamin D₃) and cholecalciferol (vitamin D) respectively…both being further metabolized, converted to a series of hydroxylated derivatives …in the liver and in the kidney, producing the active compound…Vitamin D […] it is transported to the liver in chylomicrons. […] The main site for further hydroxylation at the 1-position is the renal tubules, and although bone and the placenta can also carry out this reaction …the most potent of the vitamin D metabolites and the only naturally occurring form of vitamin D that is
active at physiologic concentrations..can maintain normal serum Ca in animals that do not have kidneys or parathyroid glands.’ (Baynes & Dominiczak 1999 p.112)

**Spinal Cord:**
- ‘Until the third month of development, the spinal cord does run all the way to the coccyx, but thereafter, it grows slower than the caudal vertebral column. .. By the time of birth, the spinal cord ends at L3. During childhood, it attains its adult position terminating at the level of the intervertebral disc between L1 and L2. (This is merely and average level; it varies among different people, from the inferior margin of T12 to the superior margin of L3.’ (Marieb p.394)

**Brown Adipose Tissue (BAT, brown fat)**
Brown fat is mostly gone by the time we reach adulthood (see also Gittleman 1996, a diet to restore it).
- ‘The typical nutrient storing fat we have considered so far is white adipose tissue or white fat. Another type called brown adipose tissue, produces heat and is a nutrient consumer. Such brown fat occurs only in babies, who cannot yet warm themselves by shivering. It is located in the hypodermis between the two scapulae (shoulder blades) in the center of the back, on the side of the anterior neck, and on the anterior abdominal wall. It is even more richly vascularized that white fat. Each brown-fat cell contains many lipid droplets and numerous mitochondria, which use lipid fuel to heat the bloodstream rather than produce ATP molecules.’ (Marieb p.98)

**Thermogenin: a natural uncoupler:**
- ‘Brown adipose tissue is abundant in newborn and hibernating animals. The brown colour is due to the high concentration of mitochondria, rich in cytochromes. Mitochondria of brown adipose tissue are uncoupled by a specialized inner membrane protein called...thermogenin...bypassing ATP synthase. Because the oxidative energy is released as heat, rather than as ATP, thermogenin is released as heat, rather than as ATP, thermogenin is believed to be involved in...protection of vital internal organs during variations in body temperature in the newborn.’ (Marieb p.98)

**White Adipose Tissue (yellow fat)**
- ‘Adipose tissue is abundant in the mesenteries, which are sheets of serous membranes that hold the stomach and intestines in place. Additionally, fat forms cushioning pads around the kidneys and behind the eyeballs in the orbits. [...] Smaller depots of fat serve the local nutrient needs of highly active organs. Such depots occur around the hard-working heart and around lymph nodes... within some muscles, and as individual cells in the bone marrow. ‘The typical nutrient storing fat we have considered so far is white adipose tissue or white fat.’ ’ (Marieb p.97, see brown fat)

**Histology (cells, fibre & inflammation)**

**Fibroblasts**

*Fibroblasts with various names secrete:*
- ground substance molecules,
- bone marrow,
- & all the fibers of areolar connective tissues incl. scar tissue:

- ‘A single kind of cell produces all the fibers of areolar connective tissue: fibroblasts.’ (Marieb p.90)

- Fibroblasts produce the molecules of the areolar connective tissue (p.90) that borders or in which all other tissues and cells are embedded (Marieb p.89):
  - ‘ground substance’ (Marieb p.91),
  - fat tissue, similar to areolar connective tissue (Marieb p. 97),
  - the reticular fibers of the reticular connective tissue in lymphoid tissue, spleen and bone marrow ['defense'] (Marieb pp. 91, 595), and other fibres (collagen, elastin).
- (special fibroblast for reticular tissue of bone marrow & lymphoid tissue: ‘reticular cells’)

-
• Or they produce proliferating fibrous scar tissue (fibres transformed from collagen). (Marieb p. 103)

• ‘All other tissues and cells in the body either border areolar connective tissue or are embedded in it.’ (Marieb p.89)

• ‘A single kind of cell produces all the fibers of areolar connective tissue: fibroblasts.’ (Marieb p.90)

• ‘The molecules of ground substance are made and secreted by the nearby fibroblasts.’ (Marieb p.91)

• ‘So far, we have established that the extracellular matrix of connective tissue is a combination of (1) fibers [collagen, elastin] (2) fluid-holding ground substance. We should now add (3) that fibroblasts attach to the matrix components through integral proteins in their plasma membranes called integrins.’ (Marieb p.91)

• 3 types of fibre: collagen, reticular, elastin (Marieb p.90)

• bone marrow is a reticular connective tissue made of a network of reticular fibers secreted by special fibroblasts, the ‘reticular cells. (Marieb p.512)

• ‘Lymphoid tissue […] is an often-infected connective tissue in which vast quantities of lymphocytes gather. […] This tissue has two general locations: (1) in the frequently infected mucous membranes of the digestive, respiratory, urinary, and reproductive tracts, where it is called mucosa-associated lymphoid tissue or MALT' and (2) in all lymphoid organs but the thymus.’ (Marieb p. 593)

• ‘The structural features of lymphoid tissue serve its infection-fighting role. It is a reticular connective tissue whose basic framework is a network of reticular connective fibers secreted by reticular cells (fibroblasts). (Marieb p. 595)

• bone marrow is a reticular connective tissue made of a network of reticular fibers secreted by special fibroblasts, the ‘reticular cells. (Marieb p.512)

• ‘Within the spaces of this network, reside the many T and B lymphocytes that arrive continuously from the venules coursing through this tissue. Macrophages on the fiber network kill invading organisms by phagocytosis…’ (Marieb p.595)

Tissue repair & scar tissue

• ‘Tissue repair can occur in two major ways: by regeneration and by fibrosis. Regeneration is the replacement of a destroyed tissue by new tissue of the same kind, whereas fibrosis involves the proliferation of a fibrous connective tissue called scar tissue. (Marieb p.103)

• Tissue repair in a skin wound involves both regeneration and fibrosis. […] The blood clot is replaced by granulation tissue, a delicate pink tissue containing capillaries… and proliferating fibroblasts that produce new collagen fibers. […] As more collagen is made, the granulation tissue transforms into fibrous scar tissue.’ (Marieb.p.103)

Scar = Heal by replacing exact tissue + fibroblasts that (1) proliferate (2) produce collagen but not ground substance

fibrocystic disease
fibromyalgia (fibro = muscle) – treated with anti-depressant, exercise and pain relievers.

• fibroids are slow growing, benign tumours made of smooth muscle cells and fibrous connective tissue in the wall of the uterus. 20% of all women over 30. (Marieb.p.738)

Types of fibroblasts

• fibroblast: shaped like spindles or stars.

• inactive fibroblast (not secreting)= fibrocyte

• mesenchyme-like cells that become fibroblasts = perivascular cells (come from red marrow derived)
Connective tissues (summarised from Marieb p.88)

areolar + adipose + dense (+ -dead) + bone/cartilage/blood  [but Red marrow stem cells can make fibroblasts, osteoblasts makers, fat cells, cartilage, muscle cells…]

areolar connective tissue: loose (most widespread) and dense. Loose ar. conn. t. underlies almost all epithelia and surround all the small nerves and blood vessels.

1 support + bind other tissues: collagen (periodontitis) + reticular + elastic
2. hold fluid: ground substance
3. defence cells
4. store nutrients as fat: fat cells

• ‘Liver and spleen… are the major hematopoietic organs until month 7 [of gestation, when] bone marrow become the major [source] and is the only hematopoietic organ from birth on. Should a severe need for blood cell production arise, however, the liver and spleen may resume their blood-cell-forming roles, even in adults. […] The most common diseases of the blood that appear with ageing are chronic leukemias, anemias, and clotting disorders… The formation of abnormal thrombi and emboli reflects the progress of atherosclerosis, which roughens the linings of arterial walls.’ (Marieb p.518)

• ‘Age-related changes… include:
Hardening and thickening of the cusps of the heart valves, decline in cardiac reserve, fibrosis of cardiac muscle […more and more muscles cells die and are replaced by fibrous scar tissue… more extensive in men… Also, in conjunction with the aging of muscle-cell membranes, fibrosis hinders the initiation and transmission of contraction-signalling impulses…]’ (Marieb. p 539)

Mast cells

• ‘These oval cells lie everywhere near small blood vessels and possess many large secretory granules. Indeed mast means ‘ stuffed full (of granules)’. The granules contain many chemicals that mediate inflammation, especially in severe allergies. Such chemical mediators include histamine, heparin, and proteases (protein-degrading enzymes), and they are secreted in response to infections and to IgE, the type of antibody we produce in the presence allergy-inducing substances. Histamine, the most important mediator, increases the permeability of the nearby capillaries, causing more tissue fluid to leave the bloodstream. The consequent swelling of the areolar tissue with fluid is a major characterisation of inflammation. Heparin in mast cells was recently found to bind and store the other mast cell molecules, and to regulate their action. Besides mediating inflammation, mast cells also seem to play a role in our defences against parasitic worms, our natural immunity against bacteria, and the normal repair of fibers, ground substance and blood vessels in connective tissues.’ (Marieb p.91)

Failing range of theory of immunity as ‘learned self-recognition’/self-defence

• ‘The immune system of newborns was long thought to be too immature to attack invading pathogens…. New, redesigned experiments have shown that newborns respond to new antigens just as vigorously as do adults, with both T cells [thymic] and antibodies.’ (Marieb p.599)

Degenerative joint disease and OsteroArthritis

• ‘Degenerative joint disease: The most common type of arthritis is osteoarthritis (OA), a chronic (long-term) degenerative condition that is often called ‘wear and tear arthritis’. It is most common in the aged and is probably related to the ‘normal’ aging process. OA affects women more often than men, but 85% of all Americans develop this condition. OA affects the articular cartilages, causing them to soften, fray, crack and erode.

The cause of OA is unknown. According to current theory, normal use causes joints to release metalloprotease enzymes that break down the cartilage matrix (especially collagen fibrils); meanwhile, the chondrocytes continually fix the damage by secreting more matrix. Whenever the strain on a joint is repeated or excessive, too much of the cartilage-destroying enzyme is thought to be released, causing OA. Because this process occurs most where an uneven orientation of forces causes excessive microdamage, badly aligned or overworked joints are likely to develop OA.

The bone directly below the articular cartilage is also affected, becoming dense and stiff. As the disease progresses, bone spurs tend to grow around the margins of the damaged cartilages….The
non-synovial joints between the vertebral bodies are also susceptible, especially in the cervical and lumbar regions of the spine. ‘ (Marieb p.236)

**Heart**

- ‘At the time these four chambers appear, the heart starts bending into an S shape... This bending occurs because the ventricle and bulbus cordis grow quickly and the heart is unable to accommodate elongation within the confines of the pericardial sac.’ (Marieb 2003 p.538)
- ‘Aerobic exercise also helps clear fatty deposits from the walls of the coronary vessels, thereby retarding the process of atherosclerosis. Barring some chronic illness, this beneficial response to exercise persists into old age.’ (Marieb 2003 p.539)
- ‘Age-related changes... include: Hardening and thickening of the cusps of the heart valves, decline in cardiac reserve, fibrosis of cardiac muscle [...] more and more muscle cells die and are replaced by fibrous scar tissue... more extensive in men... Also, in conjunction with the aging of muscle-cell membranes, fibrosis hinders the initiation and transmission of contraction-signalling impulses...]’ (op.cit. p 539)
- *Congestive heart failure:* ‘The cause... is unknown. One possible hypothesis is that it may involve a destructive positive feedback loop’ (Marieb 2003 p.535)
- *Myocarditis:* ‘Inflammation of the heart's myocardium. Sometimes follows an untreated streptococcus infection in children; may be extremely serious because it can weaken the heart...’ (Marieb 2003 p.540)
- *Endocarditis: ‘inflammation of the endocardium... autoimmune response’ (Marieb 2003 p.540)
- *Coronary artery disease:* ‘... the pain of angina usually results from tissue hypoxia’ (Marieb 2003 p.535)
- *Myocardial infarction:* ‘If ...prolonged, the oxygen-starved cardiac muscle cells die... A sharp pain strikes... through the chest, and sometimes the left arm and left side of the neck. [...] [Some] receive warnings [and others] are victims of silent ischemia’ (Marieb 2003 p.535)
- ‘Chest pain (angina) is the most common symptom, and it results from the heart not getting enough blood or oxygen. The intensity of the pain varies from person-to-person. Chest pain may be typical or atypical. Typical chest pain is felt under the sternum (breast bone) and is characterized by a heavy or squeezing feeling, it is brought on by exertion or emotion, and it is relieved by rest or nitroglycerin.’ (MedStar 2006)

*A candidate for nexial-topologic modelling: Bronchial asthma*

- ‘Asthma, a chronic inflammatory disease of the airways involves activation of various cell types and development of various degrees of post inflammatory healing and repair processes which remodel the airways. The short duration of the severe episodes is clearly related to the degree of inflammation but the natural history of the disease itself remains unclear. Treatment must take into account the fact that clinical expression varies, associating short episodes which can be prevented or attenuated with bronchodilators and severe acute episodes which should be prevented by anti-inflammatory drugs (inhaled corticosteroids are the most effective) preferably given in the early stages of the disease and used for a prolonged period. Long term use if inhaled corticosteroids may limit airway remodelling, but there have been few long-term studies to date. Further data is required.’ (Bousquet et al. 1996)
- ‘The geometry and dimensions of branched structures such as blood vessels or airways are important factors in determining the efficiency of physiological processes. We present a study of the compatibility between physical optimisation and physiological robustness in the design of the human bronchial tree... Our results suggest that bronchial malfunction related to asthma is a necessary consequence of the optimised efficiency of the tree structure.’ (Mauroy et. al. 2004)
Alternate nostrils breathing: see <Extracts F10\ Left-Right>

**Browning reaction: Maillard reaction & blemish**

- ‘When the amino acids and sugars are heated, they interact with each other in a phenomenon known as the Maillard reaction. The molecules of the amino acids and sugars combine to form new aromas and flavors. The Maillard reaction is also responsible for the brown color of cooked foods. It normally occurs at very high temperatures, but if there is a high concentration of sugars and amino acids, then it will occur at lower temperatures. The Maillard reaction gives toast its distinctive flavor, beer its distinctive color, and self-tanning products the power to turn skin brown.’ (The accidental scientist [a], 2005)

- ‘The increasing recognition of the role of the Maillard or browning reaction in both food chemistry and living systems. […] In food technology the Maillard reaction plays a central role in the development of color, aroma, flavor, texture and nutritional value of cooked and processed foods. In humans, the Maillard reaction contributes to the increased fluorescence, color and cross-linking of extracellular proteins during normal aging. Acceleration of these reactions is implicated in the development of diabetic complications and in inflammatory processes linked to neurodegenerative diseases and atherosclerosis […]’ (Maillard Symposium 2003, see Budwig’s work)

- ‘The Maillard reaction occurs when the denatured proteins on the surface of the meat recombine with the sugars present. The combination creates the “meaty” flavor and changes the color. For this reason, it is also called the *browning reaction*. The Maillard reaction occurs most readily at around 300° F to 500° F. When meat is cooked, the outside reaches a higher temperature than the inside, triggering the Maillard reaction and creating the strongest flavors on the surface. In the early twentieth century, Louis-Camille Maillard happened upon what came to be known as the Maillard reaction when he was trying to figure out how amino acids linked up to form proteins. He discovered that when he heated sugars and amino acids together, the mixture slowly turned brown. […] It normally occurs at very high temperatures, but if there is a high concentration of sugars and amino acids, then it will occur at lower temperatures.’ (The accidental scientist [b], 2005)

**A candidate for nexial-topologic modelling: Taches café-au-lait… the archaic ‘blemish’?**

Melanin pigmentation

*Symptoms:*

- Skin: taches café au lait → freckles → neurofibromes (sub/cutaneous)
- eyes - bone deformations (os longs) / scoliose - peripheral nerves tumours - hearing nerve (vestibulaire)
- (eyes: hamartomes iriens = nodules de Lisch = nodules on the iris)
- Pain - learning disability
- Vitamin D3 Topical application reduces pigmentation + suppress development of neurofibromas

N3- Developmental-genetic (Chromosome 17 - has a high rate of "spontaneous" mutations) + progressive - cancerous in nature - Determined by age 5

N2-Topographic distortions: sphenoid, to skin - Peripheral nerves. Substance blanche in brain.

Tache café au lait: Tache de naissance brune bénigne à bordures distinctes. Ces taches bénignes ont tendance à foncer avec l’exposition au soleil.

Tache de naissance: Pigmentation anormale présente dès la naissance (angiome plan, Naevus d’Ota, tache café au lait, etc.).

Tache de vin: Voir angiome plan.

Taches brunes: Voir lentigines, mélasma.

Tache de rousseur = lentigines

Classique *“Grain de beauté”- acquis*
Extracts F18 –
Rules of localisation-extension in the literature

Some formulations of the rules of nexial-topologic deployment exist already in the literature, but scattered in widely different fields, and in the form of explanations rather than imaging. They are usually reduced to puzzling observations with no clear rules. Described in the sciences as consequences of physical laws especially in general topographic distribution (see <Deployment of perspectives>), they are, in the human domain, viewed as limiting personal ‘projections’, collective-cultural ‘attributions’, or psycho-spiritual ‘expansion’ of Human reality. The rules themselves are noted by a very few, logic or cosmology minded. In scientific domain, they are formulated with respect to spatial localisation, and in philosophy, with respect to the extension of Reality, which both are the object of cultural periodic reformulation at long intervals in history. The following extracts are examples of such explanations. For example:

‘There have been many theories of relativity throughout history, from Aristarchus to Einstein, each representing a profound re-interpretation of our experiences.’ (Maths Pages-1)

The meaning of these quotations may appear difficult to grasp for a reader not familiar with the fields in which they appear, or with the origins and developments of ideas since ancient times and prehistory. An easier approach is to look at the underlying, geometrically imaged rules they formulate (see <PPT7 Three nexial-topologic rules>).

Localisation

• ‘[...] we may also see how easily men may fall into grave errors...such as believing that extension must be localized...that it occupies more space at one time than at another.’ (Spinoza 1901 p.30)

• ‘The ether of the general theory of relativity therefore differs from that of classical mechanics or the special theory of relativity respectively, in so far as it is not “absolute”, but is determined in its locally variable properties by ponderable matter.’ (Einstein in Saunders 1991 p.18)

• ‘Recall Ptolemy's arguments against a moving Earth, or the 19th century belief that electromagnetism necessitated a luminiferous ether, or the early-20th century view that Einstein's special relativity could never be reconciled with gravity. In each case a truly satisfactory resolution of the difficulties was eventually achieved not by discarding relativity, but by re-interpreting and extending it, thereby gaining a fuller understanding of its logical content and consequences.’ (Maths Pages-2)

• ‘Gravitational energy is non-local, which is to say that one cannot determine what the measure of this energy is by merely examining the curvature of space-time in limited regions. The energy – and therefore the mass – of a gravitational field refuses to be pinned down in any clear location. [...]These
are hints that our treasured intuitive views as to the nature of physical reality are less close to the truth than one would have thought....such conclusions must already be drawn on the basis of classical theory.' (Penrose in Saunders 1991 p.24-25)

• ‘Now the only function of the universal epoché is to establish the Residuum Thesis, which holds that the realm of (empirical) consciousness is “absolute” in that it does not depend on the existence of an external, spatio-temporal world (cf. Ideas, sec. 51, 55).’ (Husserl, quoted in Beyer 2004).

• ‘If the laws of positioning could not be influenced by physical factors......, and were given once and for all, such an ether would have to be described as absolute (i.e. independent of the influence of any other object).’ (Einstein in Saunders 1991 p.14)

• ‘At present [1933] it appears that two other very general mathematical disciplines will be used increasingly in the future. One of them is the theory of groups; the other is analysis situs. In the latter we study only these characteristics of figures that are unaffected (invariant) by continuous deformation produced without tearing. Two structural points are relevant for us in this connection: namely that the analysis situs is fundamentally a differential and also an ordinal discipline, based on asymmetrical relations. In the next chapter, as an illustration of the actional, behaviouristic, functional operational, differential, contact method a short account will be given of the way Einstein structurally treated “simultaneity”.’ (Korzybski 1933 p.658)

• ‘Under such natural structural conditions it is a fundamental fallacy to ascribe to “lengths” or “shapes” or “times” any “absolute” significance. .... “matter”, “space”, and “time” .... appear as relations between events and some specified observer, and forms of representations. [...] We would evaluate the[se] terms as forms of representation, and non-objects.’ (Korzybski 1933 p.664)

**Rule of 90° : Vertical Axis**

• ‘Spectral lines are split when there is an external magnetic field, and are circularly polarized. The lines appear as doublets in the direction parallel to the field, and as triplets perpendicular to the field. Lorentz’s (1895) explanation led to a spectroscopic determination of the charge to mass ratio of the electron ...’ (Saunders & Brown 1991 p.41)

• ‘That this subject [imaginary numbers] has hitherto been surrounded by mysterious obscurity, is to be attributed largely to an ill adapted notation. If, for example, +1, -1, and the square root of -1 had been called direct, inverse and lateral units, instead of positive, negative and imaginary (or even impossible), such an obscurity would have been out of the question.’ (Quotations by Gauss)

• ‘[...]' many states of experience are inherently complementary to one another, and in various pairs embody the same type of mutual uncertainty or trade-off in precision of specification as do conjugate physical quantities. A partial list of such consciousness conjugates might include: analysis/synthesis; observation/participation; structure/function; goal/process; responsibility/independence; reasoning/intuition' or most generically doing/being. Note that in each case the two properties cited are not polar opposites, but are orthogonal in the sense that the degree of each must be independently specified to localize the experience in that subspace. As with the physical conjugates, there are basic limits to such localization, and hence questions of balance or optimization: [...] excessive reductionism or attention to detail erodes the holistic or aesthetic appreciation, but excessively diffuse or excursive perspective leads to chaos in implementation; [...] Like many other aspects of the metaphor, this concept of a consciousness uncertainty principle or complementarity has also been suggested by many others...’ (Jahn & Dunn 1986 p.752)

• ‘We have described processes that occur in dying stars and the formation of new planets...Similar processes with no atomic disassociation are a part of everyday life; in fact, nowhere are such phenomena more complex and more intricately related than in biology. Above all, the concept of ether engages a distinction that becomes yet more central, and more profound: the distinction between fundamental and phenomenological law.’ (Saunders & Brown 1991 p.61)

**Rule of 180° : reversal, inversion; Rule of 360° : ‘turned around’, ‘inside-out’**

• ‘Mass: Rhetorical allusions to the concepts of inertial or gravitational mass in the affairs of consciousness are common... we refer to a thought or experience as “heavy”.... In extreme cases, we
acknowledge that... [they] are capable of distorting our consciousness perception grid and contextual framework. [...] The role of consciousness mass in the establishment of anomalous experiences appears somewhat paradoxical. [...] the oft-claimed inexplicable acquisition of information in crisis situations suggest that we should look to the high mass or “grave” end of the consciousness spectrum... [...] The analogy of general relativity would also imply anomalous experience in densely massive situations. Yet there is a countervening body of impressionistic evidence that just the reverse may be the case – that it is a carefree attitude of “high indifference” which frees the consciousness from its normal context. [...] In holistic health care, for example, the therapeutic value of levity in emotional and physiological healing is now being advocated. It may be that both of the extremes of gravity and levity facilitate some form of resonance between consciousness and its environment that engenders anomalous effects.' (Jahn & Dunn 1986 p.757) (see also in <Extract F6\ Brain Central Control>)


**Primus Moven**s ‘turned around’ as ‘wind’, ‘sea’, or ‘negative sea of energy’

- ‘The other great difficulty..., a null result to second order in powers of \( v/c \) on the detection of “ether wind”. The absence of first-order effects –... was well known;... no experiment sensitive only to effects of first order could detect the ether wind.’ (Saunders & Brown 1991 p.41)

- ‘We cannot say that the conventional theory is equivalent in all respects to the canonical second quantized theory with respect to the particle complex structure; this is true only for a limited class of global operators (which preserve particle number). In particular, the equivalence does not hold for local multiplicative operators, for these connect positive-and negative- frequency states. (They are “odd” operators...) [...] For these the RHS of (14), if considered a perturbation, would induce transitions from particle to anti-particle states, which would be a complete disaster.’ (Saunders 1991 p.100)

- ‘We may conclude that the negative-energy sea is what the particle vacuum looks like using the wrong notion of complex numbers (the natural complex structure). If the particle vacuum is to appear really empty, then we must use the particle complex structure at the Hilbert space level.’ (Saunders 1991 p.106)

- ‘The Dirac hole theory was developed in response to a growing crisis over the Dirac theory of the electron. It predicts the existence of antiparticles in a relativistic quantum theory; the antiparticle came into existence as a ‘hole’ in a sea of negative-energy particles.[…] the phenomenology, of pair creation and annihilation processes, the basic mechanisms of relativistic dynamics. […] If this concept was initially tied to the negative-energy sea, that is not the case any longer. The negative-energy sea remains a widespread heuristic device to introduce antimatter. But nowadays no one would claim that the negative-energy sea actually exists; it is no longer taken as a literal description of the vacuum.’ (Saunders 1991 p.85) [*Note: it exists in the human domain, as negative effects of resonance.*]

- ‘The definition of the “preferred basis” (the class of projections) at each time, is the business of decoherence theory, […] Evidently further pursuit of this question will require a much more systematic discussion of the criteria that motivate medium decoherence in the first place; it is clear that on any evolutionary approach to the specification of a decoherent history space, constraints on what is to count as an information processing system are also constraints on what can reasonably be understood as an “epistemic community”. In other words the objection must be ceded, but the epistemological contrast at issue is actually built into theory *ab initio*, as constraints on information transfer and stability; if we are to live in Plato’s cave, at least we can understand how it is that we are confined there.’ (Saunders 1995 p.26)

**Human non-locality of ideas about covariance of vertical axis and activity**

- ‘Relativity theory, as the mathematical statement of the covariance of physical laws, was proposed simultaneously by Einstein and Poincaré, and it was anticipated by Lorentz. [Note 13:] ... this paper of [Woldeman] Voigt, which contained... the proof of covariance, remained unknown throughout this period.’ (Saunders & Brown 1991 p.42)
Text extract F19 – Integral Inquiry

(Summary reproduced from Braud 1998 pp.256-258)

‘Synopses of five transpersonal approaches to research – Integral Inquiry

Essence: The world of human beings and their experiences is multileveled and complex, and to provide a faithful account of that world, research approaches must be correspondingly multifaceted and pluralistic. In integral inquiry, the researcher explores a research question that has great meaning to the researcher and to the research participants. This, in itself, guarantees that the findings also will be salient, significant, and useful to readers of the research report (audience) and will help advance the knowledge base of the scholarly discipline in an important way. The nature of the research question(s) determines the choice of the most suitable research methods. The researcher may choose from an array of conventional methods that have been optimised to address, respectively, four major types of research questions: (a) How might we describe, as fully and deeply as possible, the nature of a particular human experience, and how closely can we come to a sympathetic understanding of what it is like to have such an experience? (b) How might we conceptualize or explain that particular experience, historically or theoretically? (c) What are the developmental time course and “atmosphere” of that experience – that is, its occurrence, and what are its accompaniments, concomitants, or correlates? and (d) What are the consequences or outcomes of that particular experience – especially its important impacts on the life of the experienter?

Table 3.1 of Chapter 3 [p.38 – see below] is helpful in selecting the most appropriate methods for exploring these types of questions. Next, the methods chosen may be expanded or extended to include alternative forms of knowing, alternative ways of working with the data, and alternative ways of expressing findings; these extensions may take place in the research participants or in the researcher. Examples include accessing and honoring one’s tacit knowledge, bodily wisdom, emotions and feelings, intuitions, and direct knowing or paranormal access to otherwise inaccessible information; working with findings not only through the rational processing of ordinary waking consciousness but also through other representations and modes (e.g., imagery, proprioception, and direct apprehensions) that may occur more readily in nonordinary states of consciousness (e.g., meditative states and hypnoidal states); and expressing findings not only in linear prose but via alternative communication styles such as stories, nonverbal presentation, artwork, poetry, metaphor, myths, or symbolic modes. Reader-interactive modes of data presentation are also possible (e.g., presenting certain raw data to the reader along with instruction for working with the information in certain consciousness states and developing interactive information CD-ROM presentation of all major steps of the research project).

Important places are given to processes of internationality at all phases of the research:
(a) being informed by information from a vast array of sources (not only current professional literature of the discipline but also older and more tangential literature, information and approaches from other disciplines, spiritual and wisdom traditions, and one’s transpersonal sources – e.g., dreams, intuitions, exceptional experiences, synchronicities and inner guidance); (b) questioning assumptions, identifying hidden assumptions, and turning assumptions on their heads; (c) considering a variety of validity indicators; and (d) expecting and valuing the research project’s ability to help change or transform the research participants, the researcher, the reader (audience), the professional discipline, and society at large.

Strengths: The approach permits extensive and intensive studies of a topic; allows understandings from a variety of perspectives to emerge; recognizes and honors alternative forms of knowing, doing, and being; promotes change and transformation in all persons involved in or touched by a research project; and helps dissolve the usual artificial boundaries between research, clinical, and other practical applications, and personal and transpersonal growth and development. There is a strong emphasis on appreciating complements, transcending apparent dichotomies and contradictions, tolerance for ambiguity, and ability to live with and comfortably hold paradoxes.
Weaknesses: Because integral inquiry can be so broach, there is the danger of attempting to do too many different things and thus dilute the quality and depth of particular aspects of the research. Adequate practice of the methods requires extensive and intensive experience and preparation of the researcher, along with familiarity and sensitivity to many modes of knowing and alternative ways of being in the world.

Illustration: What can a plurality of research approaches and personal experiences tell us about the nature and meaning of psychic experiences? (Braud, 1994a, 1994c).


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Table 3.1 (in Braud & Anderson 1998, chapter 3, p.38):

Conventional disciplined inquiry methods that closely match four major types of research questions

<table>
<thead>
<tr>
<th>Qualitative Methods</th>
<th>Quantitative Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXPERIENCE: What is the experience of x?</td>
<td>PROCESS: How does x unfold as a process?</td>
</tr>
<tr>
<td>How is x perceived by the participant?</td>
<td>What are the concomitants of x?</td>
</tr>
<tr>
<td></td>
<td>What sets the stage for the occurrence of x?</td>
</tr>
<tr>
<td></td>
<td>What facilitates x?</td>
</tr>
<tr>
<td></td>
<td>What inhibits x?</td>
</tr>
<tr>
<td></td>
<td>FRUITS: What are the outcomes, consequences, ‘fruits’ of x?</td>
</tr>
<tr>
<td>Qualitative - Idiographic (Understand)</td>
<td>Nomothetic (Control)</td>
</tr>
<tr>
<td>(Explain)</td>
<td></td>
</tr>
<tr>
<td>(Predict)</td>
<td></td>
</tr>
</tbody>
</table>

Phenomenological
Heuristic
Narrative
Life stories
Case studies
Feminist approaches
Organic approach
Interview
Questionnaires
Surveys

Theoretical
Historical
Grounded theory
Textual analysis
Discourse analysis
Hermeneutic

Correlational
Causal-comparative
Field studies

Experimental
Quasi-experimental
Single-subject
Action research
Extracts F20 – Published ‘Exceptional Experiences’

Saint Teresa of Avila (1588AD)

Saint Teresa of Avila recounted in her biography a nightmarish vision related to water, that her confessors had her interpret as a visit to a future hell:

‘...when I found myself in a moment, without knowing how, plunged apparently into hell ...The ground seemed to be saturated with water, mere mud, exceedingly foul, sending forth pestilential odours, and covered with loathsome vermin...I felt a fire in my soul... I have undergone most painful sufferings in this life, and, as the physicians say, the greatest that can be borne, such as the contraction of my sinews when I was paralysed...I felt myself on fire, and torn to pieces... I could neither sit nor lie down... I could not breathe. There was no light, but all was thick darkness.... our Lord made me really feel these torments, and that anguish of spirit, just as if I had been suffering them in the body there.’

‘Suffering them in the body there’ corresponds to a ’here-now’ sensation of attrition. Teresa’s description is striking because of her condition of systemic degeneration (and one would assume systemic, chronic, low-grade infections) at the time of her visionary experience. The term ‘ground’ befits a general mood of ‘loosing ground’ in life, and specifically fits the ‘ground substance’ connective tissue losing its integrity and springing quality.’ (Teresa of Avilla 1588)

Alfred Tomatis (1991)

‘What happened? I do not know how to describe it exactly....At this moment I was, nearly asleep. Afterwards they told me that I had abruptly ceased to be present except for my body which had become completely immobile. During this time I had the impression of plunging deep down a mineshaft, strapped in the compulsive protective clothing of such a situation. I moved with dizzying speed toward the center of the earth. A thousand meters! Two thousand meters! Before my open but fixed and lack-lustre eyes the tangle of geological strata formed crazy images where I soon recognized scenes of hallucinations, replays as it were of all the challenges which had been put before me in the course of my life, no doubt to gauge the resistance of the material. On the surface of this vast composite image floated, first of all, a representation of the problem which had just arisen unexpectedly at the heart of our home life. [...] Next other difficulties appeared [...] time lived ...beyond ordinary norms [...] sad or painful [...] My experience as a human unrolled... shadows... I enganged in hand to hand combat ... darkness... Now I crossed layers of mud...and I experienced a certain sense of vertigo. [...] I got further and further from my body all the time unaware of any great regret since I remained in permanent touch with it. My speed continued to increase until it seemed to me that the final threshold must soon come, beyond which, after time had been abolished, space itself would sink exhausted. Suddenly in the obscurity, which swaddled me in a layer of blackness thick enough to fill me with mortal agony, I saw a sparkling light...an exultant joy took hold of me...A blazing light was the only thing I could see. This time I was caught in an upward movement [...] I understood at a single stroke that it was this light which had seized me. [...] A voice said to me while I was being reunited with my body. “Your mission is not finished, old friend, you must go on”. I recognized my own voice and then opened my eyes. An oxygen mask was on my face...and then an ambulance ride...my wife believed me dead and in fact she was not mistaken. For a certain length of time, all my vital functions had ceased...At last I was able to obtain rest and sleep. [...] The medical diagnosis attached to this incident read “Neuro-vegetative-collapse” [...] descent into the abyss...Death ...that which we call by this name is only the last flight that lifts us up.’ (Tomatis 1991 pp.194,195,197)


‘In my late twenties, ...I had for about a week been studying and autistically pondering some of the problems in this book [...] One afternoon I lay down in intellectual despair on a couch. Suddenly, out
of an absolute quiet there came a firm, distinct loud voice from my upper right which said “Include the knower in the known!” It lugged me to my feet absurdly exclaiming, “Hello?” looking for whoever was in the room. The voice had had an exact location. No one was there!... I do not take this nebulous profundity as divinely inspired, but I do think that it is similar to what was heard by those who have in the past claimed such special selection. (Jaynes 2000 p.86 – see p.87-93)

‘In schizophrenia [...] In some cases, particularly the most serious, the voices are not localized. But usually they are... In some patients there is a tendency to associate the good consoling voices with the upper right, while bad voices come from below and to the left. (Jaynes 2000 pp.88,89,90)

‘If we are correct in assuming that schizophrenic hallucinations are similar to the guidances of gods in antiquity, then there should be some common physiological instigation in both instances. This, I suggest is simply stress. In normal people, we have mentioned, the stress threshold for release of hallucinations is extremely high [...] This is caused, I think, by the build-up in the blood of breakdown products of stress-produced adrenaline which the individual is, for genetical reasons, unable to pass through the kidneys as fast as a normal person’ (Jaynes 2000 p.93)

‘If two monkeys are placed in harness, in such a way that one of the monkeys can press a bar at least once every twenty seconds to avoid a periodic shock to both monkeys’s feet, within three or four weeks the decision-making monkey will have [executive] ulcers, while the other, equally shocked monkey will not. [...] So Achilles, ... in decision-stress ... The divine voice ends the decision stress. (Jaynes 2000 p.94)

‘The Origin of Auditory Hallucinations – That there is a problem here comes from the very fact of their undoubted existence in the contemporary world, and their inferred existence in the bcameral period. The most plausible hypothesis is that verbal hallucinations were a side-effect of language comprehension which evolved by natural selection as a method of behavioral control. Let us consider a man commanded by himself or his chief to... If he is not conscious, and cannot therefore narrate the situation and so hold his analog “I” in a spatialized time... how does he do it? [...] A Middle Pleistocene man would forget what he was doing. But lingual man would have language to remind him...If one is facing directly and conscientiously the problem of tracing out the development of human mentality, such suggestions are necessary and important, even though we cannot at the present time think how we can substantiate them. Behavior more closely based on aptic structures (or, in an older terminology, more “instinctive”) needs no temporal priming. But learned activities with no consummatory closure do not to be maintained by something outside of themselves.’ (Jaynes 2000 p.135)


‘I felt myself descending through space... sky began to fill with dark...the wind picking up... oppressive feeling... pressing evil power... cracks in the boundary of my selfhood... couldn’t even allow myself to feel or sense in any way that I was in a battle or struggle for survival... took all my powers of concentration and all my energy... finally a degree of steadiness in my awareness of the self and I relaxed... must go back... prepared to descend... to return... shut out awareness of everything but the Light of the Self... expanded the sphere... like an expanding cloud of Light, which at first was fairly small... the struggle was an illusion... my mind felt clear and strong but my body was weak and shaky... couldn’t let that power remain loose on the face of the earth... power of being established in self-awareness... tornado... vortex of wind struck the building... and all its whirling movement ceased... In that instant a blast of wind came through the window, hitting me full body... energy had entered me... dark ball of energy... ’ (Edwards 2000 pp.210-214)

‘The Shakti (goddess, life energy) directed me to write down all that I had experienced and see that it was published, making it available to everyone. Having the Shakti speak to me from within and give me specific directions],... She said it was very important for the knowledge... to become more widely known.’ (Edwards 2000 p 39)

‘As I sank into meditation I found myself descending through space and time, as if from high above the earth... northern sea... I’m going in search of the mysterious lands beyond the vast oceans far to the south... land beyond turmoil, beyond time. I’m going to find that place... constantly changing colours... boundary... began to dissolve... mountain pass... did more mountains lie ahead?...’ (Edwards 2000 p.42-54 and exegesis pp.54-86)
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