From nominal reference to the acquisition of personal pronouns in a Mandarin-English bilingual child

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A thesis presented to the University of Western Sydney in fulfilment of the requirements for the degree of Doctor of Philosophy

August, 2004

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Acknowledgments

The endeavour to complete a PhD could not have become a reality without the strong support coming from my supervisors, my family and other people.

It has been a privilege to work under the supervision of Stuart Campbell and Bruno Di Biase. They are my invaluable mentors. I have benefited much from their expertise, intellect, continual inspiration and guidance. I am deeply grateful to Stuart Campbell for giving me abundant freedom, opportunity and guidance to learn and grow, strong support, patience and confidence. My heartfelt thanks go to Bruno Di Biase for his constant encouragement, enthusiasm, generous support and expert assistance in creating the computer capacities for coding and analysing my data and for guiding me into psycholinguistic perspectives.

The opportunity to pursue my PhD study at University of Western Sydney was provided by the Australian Postgraduate Award. I am very grateful for this and other financial support from the University and College Research Office, as well as the School of Languages and Linguistics, MARCS Auditory Laboratories for providing a very stimulating intellectual and academic environment.

I am indebted to Elizabeth Lanza for her inspirational work in bilingualism and for her enthusiasm and moral support for my study.

I am very grateful to Chen Ping for providing initial advice and a list of readings in Chinese linguistics and Chinese monolingual children’s language development. His help was critical in narrowing down the scope of my research.

Special thanks go to Gesela Håkansson for her stimulating discussions with me when it was at its inception. Her knowledge and experience in child language have helped clarify my own thoughts.

My great thanks also go to Jürgen Meisel for his invaluable comments and suggestions after my presentations at the International Symposia on Bilingualism. His insight and expertise enriched my mind and sharpened my views.
I am very grateful to Annick De Houwer in particular, who gave me extremely important advice at various stages of my study. This helped me extend some of the analysis sections in this dissertation.

Li Wei also deserves particular mention and special thanks, as his expertise and insightful comments motivated me to rethink and rewrite the chapter of the literature review and reorganize certain sections of this work.

Many people have contributed to my rewarding experience at University of Western Sydney. Among them, I would like to thank the following friends and colleagues: Denis McInerney, Sun Dekun; Xiangdong Liu, Satomi Kawaguchi, Sandra Hale, George Saunders, Paulin Djite, Rosemary Suliman in the School of Languages and Linguistics; Kate Stevens, Denis Burnham, Caroline Jones, Colin Schoknecht in MARCS as well as Michael Kennedy and my postgraduate mates. I immensely appreciate Caroline Jones’ help, who contributed time and skills to edit my draft and make useful suggestions.

I would like to express my sincere gratitude to my family, especially my husband, Yun Zhang, for his love, understanding, firm support and constant encouragement throughout the years of my study. His wonderful formatting work and computer help made my completion of dissertation easier. I am ever grateful to him and to our two children, James and Joy, for putting up with endless evenings of my ‘absence’ when I was glued to the computer screen. I am deeply indebted to my mum, dad and my sister Xiaoying for their love, understanding, and unfailing support and endless confidence in me which helped me overcome frustrations and obstacles in times of difficulty. Mum, it is you who fuelled me with passion and wisdom. 妈妈，女儿深深地感谢您！Particular thanks go to Xiaoying for helping me to accomplish the arduous transcription and data checking work. Without them, this dream of mine would not come true.

Finally, I would like to thank James himself. He was a continuous source of wonder and inspiration. Without his babbling and talking, this study would have never been possible.
The work presented in this thesis is, to the best of my knowledge and belief, original except as acknowledged in the text. I hereby declare that I have not submitted this material, either in whole or in part, for a degree at this or any other institution.

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Abstract

This longitudinal study aims to trace the developmental route from nominal to pronominal reference to person in a bilingual first language acquirer of two typologically distinct languages: Mandarin and English. It examines the development of the NP system in the child's early word learning and the emergence of personal pronouns in his production of both languages. The form-function relations obtaining in the child's development of self-referring expressions leading to his acquisition of personal pronouns is described within the setting of the child's general syntactic development, from age 1;7 to 4;0, and is compared to monolingual development. The study reveals that experiencing different types of input influences the speed and smoothness by which personal pronouns are learned in language production. Meanwhile different learning contexts provide an opportunity for the bilingual child to utilise his language processing strategies to reach the target form-function mapping of pronouns in his two languages. Further, this study provides some exploration into the role of the weaker language in bilingual language development as well as the nature and extent of the early separation and interaction of two linguistic systems in a language environment which is fundamentally unlike the one-parent-one-language setting. The data-set of the current study consists of over 65 tape-recorded sessions of naturalistic speech collected over 30 months in context-based language use in either Mandarin or English, where Mandarin is the home (and minority) language spoken by both parents and other family members while English is the (dominant) language of all other environments.
1 Introduction

1.1 Introduction

This study attempts to address the effect of bilingual context on children’s acquisition of personal pronominal reference to self, addressee and non-participant, in which the child’s pronominal input comes from two typologically distinct languages, Mandarin and English. The study will investigate the child’s pronoun acquisition in the context of his overall syntactic development in his two languages. The implications of the findings will be explored for the study of language acquisition in general and for bilingual first language acquisition in particular.

In this introductory chapter, an overview of the major issues is presented. In Section 1.2, the importance of the study of bilingualism is discussed. In 1.3, I provide a definition of the term ‘bilingual first language acquisition’. In 1.4, I present a brief summary of theoretical issues in bilingual first language acquisition. In 1.5, the importance of the study of pronoun acquisition in a bilingual context is examined. Section 1.6 presents an overview of the study.

1.2 The bilingual context and its significance

Children’s bilingual acquisition has received increasing attention in theoretical and empirical explorations beginning in the late 1980s (e.g., De Houwer, 1990; Deuchar & Quay, 2000; Genesee, 1989; Lanza, 1997; Meisel, 1986). There are several factors attributing to this surge. First, it appears that there are as many or even more children who grow up bilingual as monolingual (Tucker, 1998). Therefore, the study of bilingual children’s acquisition is worthy in its own right. Second, theories of language acquisition must ultimately incorporate the facts of bilingual acquisition. Third, there are implications for our conceptualization of mind and brain that are linked up to bilingualism and bilingual acquisition that are only beginning to be explored, e.g., the human language faculty and the human mind. Moreover, there is
an emerging appreciation among language acquisition researchers of the need to turn
to cross-linguistic studies, and to compare these data to studies of monolingual
children acquiring different languages (Slobin, 1985a). Such cross-linguistic
research has, among other things, been motivated by the question of the relative
importance of language-universal vs. language-specific factors in acquisition (see
e.g. Slobin, 1985b; Berman, 1986). A child growing up with two languages from
birth offers a unique opportunity for investigating general theoretical issues in
language acquisition, since in the case of a bilingual the number of possibly
influential variables is reduced to a minimum (De Houwer, 1990, 1): the bilingual
child comes the closest to being the ‘perfect matched pair’. As Meisel (1990, 17)
puts it, “one has to do with one personality, one mind, etc., but with two grammars”.
Bilingual children are their own controls on a number of cognitive, social economic
and psychological variables that can confound studies of monolingual children.

Current work on bilingual acquisition is broad in scope and encompasses most facets
of language development, including phonology (Deuchar & Quay, 2000; Paradis,
2001), early lexical development (Quay, 1995), syntax (see De Houwer, 2005 for a
review), and socio-pragmatic or communication skills (Genesee et al., 1996; Lanza,
1997). This work examines the processes and representational systems that underlie
bilingual acquisition and the possible interaction between bilingual’s two languages,
e.g., speech errors in phonology (Zhu & Dodd, 2004), and parental input (Lanza,
1997; 2001).

Studies of bilingual children’s pronoun acquisition, however, are scarce and limited.
Studies on bilingual first language acquisition mainly concern the formal aspects of
bilingual children’s language development. The dimension of real language use in
context is under-investigated, in particular, the interplay between formal and
functional aspects of language acquisition – aspects which are of importance for both
bilingual as well as monolingual acquisition (Lanza, 1997, 318). Bilingual input,
language context, dominance and acquisition strategies are all linked to the child’s
success in moving to target form-function mapping to become a competent bilingual
communicator. Study of bilingual children’s language acquisition and use should not
overlook the development of bilingual children’s communicative competence. True bilingual communicative competence entails the ability to adapt one’s language use on-line in accordance with relevant characteristics of the situation, including the preferred or more proficient language of one’s interlocutor (Genesee, 2003, 216).

Study of person pronouns has been of increasing interest to researchers since 1985, as Fletcher states (1985, 50-51): “the emphasis in child language studies has moved from a purely structural one to a concern for the functional relevance of linguistic units within a communicative perspective.” The study of bilingual children’s person pronoun development promises to be a fruitful area for investigating the development of bilingual’s form-function mapping process in a communicative situation.

Before proceeding, it is important to have a brief account of the term ‘bilingual first language acquisition’, which is relevant to this research.

### 1.3 Bilingual first language acquisition

McLaughlin (1978) is often quoted as having made a distinction between ‘simultaneous’ acquisition and ‘successive’ acquisition of two languages: he speaks of ‘simultaneous acquisition of two languages’ when a child has been introduced to two languages before his or her third birthday. McLaughlin applies the term ‘successive acquisition of two languages’ to situations in which this criterion is not met. McLaughlin readily admits that the third birthday stipulation represents an arbitrary cut-off point. De Houwer (1995: 223), however, finds McLaughlin’s first category too broad, and prefers to reserve the term ‘bilingual first language acquisition’ (BFLA) (a term that she attributes to Meisel) to situations where the child is regularly exposed to two languages from within the first month after birth. As Deuchar & Quay (2000: 1) put it, De Houwer is right to argue that the age of first
exposure to each language may have an effect on the course of acquisition. However, as little is known so far about the precise effect at each age, her suggestions about terminology are probably less important than her advice that researchers should ‘specify exactly when their bilingual subjects were first regularly exposed to more than one language’ (De Houwer, 1995, 223).

With this advice in mind, in this thesis I shall use the term ‘bilingual first language acquisition’ to refer to situations where the informant James is regularly exposed to both languages from birth until 5 years old. In relation to the case study, I shall give details of timing and exposure, and in relation to other cases I shall give as much information as I can.

1.4 Theoretical issues in bilingual first language acquisition

The major question in research on bilingual first language acquisition has been whether the young child initially forms one linguistic system, namely a “fusion system” in Meisel’s term (1989), which he or she gradually differentiates into two separate linguistic systems, or whether the child actually forms two separate linguistic systems from the onset of morpho-syntactic development, i.e., the Separate Development Hypothesis in De Houwer’s term (1990).

While all researchers agree that mixing of two languages occurs during bilingual development, they differ with regard to the explanations of this phenomenon. In the studies that claim the validity of the fusion system hypothesis, bilingual children are thought to start out with a single lexical system including words from both languages and to apply the same syntactic rules at first, irrespective of language input and context. Different studies have defended this position with different arguments. Works by Volterra and Taeschner (1978) and Taeschner (1983) are representative of this position.
Researchers in favour of the Separate Development Hypothesis maintain that children are able to differentiate between the two linguistic systems they are exposed to from an early age (see reviews in De Houwer, 1990, 1995, 2005; Genesee, 2000, 2003; Lanza, 1997; Meisel, 1990, 2001).

However, recent research has moved on to investigate how the languages interact in acquisition and use. Issues about effects of language interdependence such as interference/transference, acceleration and delay have been raised (see Genesee, 2000; Lanza, 2000; Meisel, 2001; Zhu & Li, 2005 for a review). Researchers in this area claim that the early bilingual separation of his/her two languages does not mean that the developmental processes of his/her two languages are identical.

Most studies in bilingual first language acquisition are conducted with bilinguals who are brought up in a family that follows a one-parent one-language principle. The language pairs involved in most of the investigations are Indo-European languages. In this thesis, the two typologically distant languages Mandarin and English provide new data to explore the validity of the separate development hypothesis. In addition, the different sociolinguistic language exposure setting provides the potential to test the application and generalization of the SDH to family situations other than the one-parent and one-language model of language input (a modified version of Type 3 in Romaine’s term, 1995; details will be discussed in Chapter 2). Moreover, the type of bilingual child in the present study, which is different from Type 2, represents the most common case in immigrant families, in which situation-based language input and use are the norm, where Mandarin is the home (and minority) language spoken by both parents and other family members while English is the (dominant) language of all other environments. This type of bilingual case study offers an opportunity to investigate the possibility of language interaction, for instance, language interference, language acceleration and delay, and differences in the areas of syntax and pronouns. Chapters 4, 5 and 6 explore the issues.
1.5 The development of person pronoun in a bilingual context

The problem of the acquisition of deictic terms is fascinating for a number of reasons. Firstly, deictic terms provide the ground for the breakdown in the immediate “intersubjectivity” between the adult and child. For nouns, if it is a cat for you, it is also a cat for me. Words imply the same world and the same linguistic conventions for representing that word. But here, the correspondence breaks down. The personal pronouns begin to be differentiated on the basis of who is saying them. In the simplest case, both the child and the parent can call the child James but they cannot both, correctly, call him you. In other words, the invariance between speaker/listener breaks down. Understanding notions of speech roles is essential for acquiring personal pronouns.

Personal pronouns are a form of deixis (Wales, 1986, 401). Deictic terms serve to direct the hearer’s attention to spatial or temporal aspects of the situation of utterance which are often critical for appropriate interpretation. They do this in a way which is particularly interesting, since they serve as a meeting point for syntactic, semantic and pragmatic aspects of language. This is because they are, to use G. Stern’s (1960) term, contingent expressions. Contingent expressions are expressions whose interpretations are dependent not only on context-independent semantic information but also on information which is contingent on an actual (or construed) context. They are used to direct the attention of the hearer of a communication toward some object or event. The aspect of the situation/speech event which is critical in this regard is, typically, information about the speaker, but in any case this information must be such as to enable decisions to be made about person and/or place in relation to the utterance. These expressions which we group as ‘deictic’ introduce an explicitly subjective orientation into linguistic classification. They draw attention to the fact that language is acquired and used by people in real situations.

The acquisition of the pronominal system has been extensively studied in monolingual first language (L1) acquisition research in English and other European
languages (Stern, 1900-1918; Huxley, 1970; Clark, 1978; Charney, 1980; Chiat, 1982; Radford, 1995; Rispoli, 1998; Deutsch, Wagner, Burchardt, Schulz and Nakath, 2001). Moreover, the development of pronouns in first language acquisition has been studied mainly with reference to monolingual children rather than bilingual first language acquirers. However some pronominal development has been described in a number of bilingual first language acquisition studies (De Houwer 1990; Lanza 1997; Meisel ed. 1990, 1994). These studies, which have mainly involved European languages, have reported on and discussed the emergence of pronominal forms, the order of acquisition, the frequency of use of pronominals in each of two language environments and/or crosslinguistic influences in mixed utterances.

The transition from nominal person reference to pronominal person reference in early linguistic development has, however, rarely been reported in the literature. Bilingual L1 pronominal development studies on this issue are also scarce. This study is the first attempt to trace the developmental route from nominal to pronominal person reference of a Mandarin-English bilingual first language learner (aged 1;7 to 4;0). Chapter 4 is devoted to this issue.

English pronominal development has been extensively studied in monolingual children (Brown 1973; Huxley 1970; Clark 1978; Chiat 1986; Budwig 1990; Charney 1980, and others). Mandarin monolingual development has been discussed by Erbaugh (1992) and others. The current study aims to describe the development of self-referring expressions and the acquisition of personal pronouns in a Mandarin-English bilingual child and to compare this to monolingual development. Both referential and syntactic aspects of nominal and pronominal development are addressed, including form/function differentiation of persons and numbers in both languages as well as the emergence of grammatical differentiation of case marking in English. Chapter 6 provides a detailed, systematic analysis of this issue.
In order to approach issues mentioned at the very beginning of this chapter, e.g., what bilingual children can teach us about the acquisition process and about acquisition strategies in on-line communication in bilingual children (and thus also in monolingual children), we need detailed descriptive analyses of bilingual children’s speech production. Unfortunately, as this study attempts to show in Chapter 2, due to certain factors in bilingual acquisition, e.g., implicit input, the extent of proven empirical knowledge about acquisition strategies in the field of bilingual first language acquisition today is quite limited. The new combinations of languages and types of bilingual child will provide a new perspective to address these issues and questions in bilingual first language acquisition, i.e., the questions about separation of the bilingual child’s two languages and about the similarities or differences between bilingual and monolingual children’s speech productions. (Appendix II provides a relevant account of typological differences between Mandarin and English).

The overall aim of this study, then, is two-fold: first, to learn more about the process of bilingual first language acquisition in its own right, and second, on the basis of this newly acquired knowledge, to contribute to a better understanding of child language acquisition processes in general.

1.6 Overview of the study

This study is grounded in a psychological framework where the individual person serves as the basic unit. In this framework, development is a process of differentiating distinct domains out of a “psychophysical uniformity”. The position is not at all “modular” in the modern sense. Only in-depth case study can provide a realistic account of processes which occur in development. Bilingual children themselves are their own controls for social variables (Slobin, 1986; Meisel, 1989; De Houwer, 1990). This research strategy allows us to pay attention to the general and the particular developmental processes at the same time.
A review of the relevant literature and a more detailed description of the research problem are provided in Chapter 2. In Chapter 3, the case study methodology is presented. Chapter 4 provides an analysis of the syntactic development of the child’s two languages. A comparison is made with monolingual data as well as with bilingual data.

Chapter 5 investigates the transition from nominal person reference to pronominal person reference in early linguistic development within a discussion of the child’s whole NP systems.

Chapter 6 provides a detailed analysis of the development of self-referring expressions and the acquisition of personal pronouns and compares this to monolingual development.

Chapter 7 summarizes the main findings and discusses their implications for future research.
2 Literature Review in Bilingual First Language Acquisition

2.1 Introduction

The study of bilingual acquisition has had a remarkably long history. Ronjat reported the first scientific study of a bilingual child in 1913. Later, the classic study by Werner Leopold of his two bilingual daughters was published in four volumes between 1939 and 1949. This represents an early start for the study of the simultaneous acquisition of two languages. Despite the early work of Ronjat and Leopold, further research remained sparse until the 1980s. There has been a great surge of research activity in the field since the mid-1980s, and it appears to be continuing unabated. For overviews of work on bilingual children done primarily prior to 1980, see Lindholm (1980), McLaughlin (1984), and Redlinger (1979). This chapter will review certain under-investigated issues in the field of bilingual first language acquisition as well as provide a brief account of the heated issue in this area: one system vs. two systems. For overviews of the most prominent studies contributing to the one- vs. two-system argument, Meisel (1989, 2001), Genesee (1989, 2000), De Houwer, (1990, 1995, 2005), Lanza (1990, 1997), and Deuchar & Quay (2000) are recommended.

Section 2 reviews the relationship between types of bilingual upbringing and their input conditions. Section 3 discusses some neglected issues of input effects. Section 4 will look at the role of contexts, including learning contexts. In section 5 the nature of the weaker language and language dominance will be addressed. Section 6 highlights the importance of acquisition strategy in the neglected literature of bilingual first language acquisition. Section 7 deals with the Separate Development Hypothesis vs. the Fusion Hypothesis. Section 8 concludes the review and emphasizes the attempt of the present case study to contribute to studies in bilingual first language acquisition.
2.2 Type and variety of language input

Vihman and McLaughlin (1982) point out that language input in cases of the simultaneous acquisition of two languages should be considered in relation to at least two parameters: (a) input in the home versus input outside it in the ‘community’, and (b) monolingual versus bilingual (termed "mixed") input from each interlocutor. Vihman and McLaughlin distinguish between two basic environments – home and community – and between three types of language use or language input to the bilingual children: (1) each person using one language; (2) “mixed” use by each person; and (3) an environment-bound language, with one language at home and another in the community. Each environment, that is, home or community, may be characterized by one of the three basic types of language use; the distribution of each type of language use across home and community may contribute to a simultaneous bilingual presentation to the child.

Vihman and McLaughlin’s parameters are only partially reflected in Harding and Riley’s (1986) typology of bilingual families, which is also adopted by Romaine (1995). On the basis of such questions, Romaine (1995) classified the main types of early childhood bilingualism into six categories. Five of them were described also by Harding and Riley (1986, 47-8). Bilingual families are classified according to parents’ languages, the community language, and parental ‘strategy’. While reference to the parents’ and the community language parallels Vihman and McLaughlin’s reference to home and community input, the parameter of monolingual versus bilingual input is dealt with only in relation to the parental ‘strategy’.

Type 1: “One-person-one-language”

Parents: The parents have different native languages to one another with each having some degree of competence in the other’s language.

Community: The language of one of the parents is the dominant language of the community.
**Strategy:** The parents each speak their own language to the child from birth.

*Type 2: “Non-dominant home language” or “One language-one-environment”*

**Parents:** The parents have different native languages to one another.

**Community:** The language of one of the parents is the dominant language of the community.

**Strategy:** Both parents speak the non-dominant language to the child, who is fully exposed to the dominant language only when outside the home, and in particular in nursery school.

*Type 3: “Non-dominant home language without community support”*

**Parents:** The parents share the same native language.

**Community:** The dominant language is not that of the parents.

**Strategy:** The parents speak their own language to the child.

*Type 4: “Double non-dominant home language without community support”*

**Parents:** The parents have different native languages to one another.

**Community:** The dominant language is different from both of the parents’ languages.

**Strategy:** The parents each speak their own language to the child from birth.

*Type 5: “Non-native parents”*

**Parents:** The parents share the same native language.

**Community:** The dominant language is the same as that of the parents.

**Strategy:** One of the parents always addresses the child in a language which is not his/her native language.
Type 6: “Mixed languages”

Parents: The parents are bilingual.
Community: Sectors of community may also be bilingual.
Strategy: Parents code-switch and mix languages.

As Zhu and Li (2005) explain, there are clearly overlapping features across the six types of childhood bilingualism. For example, in both Types 1 and 2, the parents have different languages and the language of one is the dominant language of the community. What distinguishes them is the strategy used by the parents to address the child. In Type 1 the child is exposed systematically to both languages at home, while in Type 2, exposure to the community language is generally later and outside the home. In Type 4 the parents also have different native languages, but neither one is the same as the dominant language of the community. Here the child gets exposed to its parents’ two languages in the home and introduced to the community language later outside the home. The outcome in this case is a trilingual child. In Types 3 and 5 the parents share the same language, but in type 3 the language of the parents is not the community language, and in Type 5 one of the parents addresses the child in a language which is not native to him/her.

Romaine (1989, 166-8) emphasizes the importance of three dimensions of the bilingual learning situation: (1) the language(s) the parents speak with their child(ren); (2) the language(s) the parents have as their native language(s), and (3) the extent to which the parents’ language(s) reflect the dominant language(s) of the community at large. De Houwer (1995, 223) argues that the importance of the first factor is obvious. However, it is less clear whether the other factors play a major role in the process of acquisition as it evolves in the bilingual child. Zhu and Li (2005) point out that the three headings Romaine used to classify the six types of childhood bilingualism – the language(s) of the parents, the sociolinguistic situation of the community, and the discourse strategies of the parents and other immediate carers – are critical factors not only in the process of bilingual acquisition but also in the final product of that process, i.e. the type of bilingual speaker it produces. However, we do not have enough empirical studies about the relationship between
the six types of bilingual children’s input conditions and their mental representations of the languages and their patterns of language use.

Most studies in early simultaneous bilingual development deal with Type 1 (see De Houwer, 1995, 2005 for reviews). George Saunders’ successful case study of raising his three children (two boys, Frank and Thomas, and a girl, Katrina) bilingually in English and German (1982, 1988) fits into Romaine’s Type 5. Vihman’s case study of her son Raivo’s input of Estonian and English (1985) and Deuchar and Quay’s (2000) case study of the input situation of their young bilingual informant M, who was acquiring Spanish and English from birth, can be said to be a modified version of Type 2.

Romaine’s Type 6 of childhood bilingualism is perhaps a more common category than it might seem to be on the basis of its representation in the literature (Zhu & Li, 2005). As De Houwer (1995) noticed, many of the world’s bilingual children grow up in “native bilingual communities”, in which monolingual norms may be unavailable or nonexistent (Wölck, 1987, 8). However, the effect of the virtually complete lack of separation of the two input languages here on the development process has been least systematically studied. In between the continuum of Type 1 and Type 6, there is variety of combinations of input types and degree of separation and mixture of language uses in reality. For example, combinations of Type 3 and 6 are most commonly found among immigrant families in a host country such as Australia.

Parents: The parents are bilinguals who share the same native languages.
Community: The dominant language is different from the parents’ languages.
Strategy: The parents speak their native languages to the child at home most of the time, and the child is exposed to the dominant language most of the time when outside the home.

However, in one of the domains, for example, at home, in certain contexts, e.g. at story-telling time, the bilingual-to-be children are addressed by one of the parents in the dominant language. To my knowledge, the nature of this type of context-bound
input and its effect of this type of input situation vs. others on young bilingual children’s language development have not been investigated.

In this study, the separation of the two languages in the bilingual child’s input is represented in each home or community environment by context-bound language use. As for the environment-bound bilingual exposure conditions, De Houwer proposes situation-bound factors that affect language use within the child’s individual social network. De Houwer (1995, 226) points out: “the separation of the two languages by person has received the most attention so far, the separation of the two languages in the input may also be effected by situation-bound factors. To my knowledge there has again been no research investigating the effect of this type of input situation vs. others on young bilingual children’s language development.” Yet, the latter is the most common situation amongst immigrant communities. As far as I am aware there is no conclusive evidence to suggest any particular ‘type’ of environment is more or less beneficial for bilingual upbringing. This study is an attempt to investigate early bilingual pronominal development within this bilingual child’s general syntactic development in context-bound use of each language. The context here means the conversational ‘context’ of the interaction (Lanza, 1997, 10).

I share the view as presented in Deuchar & Quay (2000) that the prime role of research is to describe rather than to prescribe the natural upbringing of a bilingual child in a normal migrant family environment. Therefore this study is interested in describing what actually happens in bilingual acquisition. There are many types of bilingual upbringing, and in many of these, the parents or other interlocutors do not see the necessity or possibility of making decision about ‘methods’ (Deuchar & Quay, 2000, 9). When the parents in this study made a decision on languages they were going to use with the bilingual-to-be child James, they used what Deuchar and Clark (1988, 461) call “sociolinguistic authentic” input so they did not adopt the one person/one language principle, which is unnatural in this family. The language exposure pattern for establishing James’ early Mandarin-English bilingualism is context-bound language, in particular, the combination of environment/situation-bound and interactional context-bound language. The environment-bound variable is what Vihman and McLaughlin (1982) called “an environment–bound language, with
one language [Mandarin] at home and another in the community”. This is similar to De Houwer’s term ‘situation-bound’ where setting is the determinant of parents’ language choice while speaking to the bilingual-to-be child. As for the interactional context-bound variable, topic is the main determinant of parents’ language choice when speaking to the child at home, e.g., half-hour story-telling time in English at bedtime. It also involves code-switching in the parents’ and the child’s conversation during topic changes as well as between parents’ dyads. The informant James’ bilingual input situation in this study represents the usual bilingual conditions for the second generation in an immigrant family where both parents natively speak a language which is a minority language in the host country (as Mandarin is in Australia). But how does input affect bilingual acquisition?

2.3 The role of input in acquisition

De Houwer (1990, 1995, 2005) stresses the importance of bilingual children’s input such as young children pay very close attention to the variable nature of the input. Without at least this, it would appear impossible for young bilingual children to produce utterances that are clearly relatable to each of their input languages”. Lanza (1997, 70) also points out that the impact of the bilingual child’s linguistic input has been the neglected area in studies of language mixing in infant bilingualism. Studies of bilingual children can “contribute to the debate within monolingual acquisition as to the role of the input” (Lanza, 1990, 447). There are several reasons for a focus on input patterns in terms of their being separate or not for each language. The issue of the degree of language differentiation/separation in the input has more specifically been explored in relation to the extent to which bilingual children “mix” their languages or not (Genesee, 1989; Meisel, 1989). Genesee (1989) states that there is no reason for bilingual children to know that their language ought not to be mixed if they are exposed to frequent mixing in the input. The degree of language separation in the input has often been seen as a major determinant in early bilingual acquisition in general. Traditionally, Romaine’s Type 1 “one-person-one-language” input condition (1995, 183), following Ronjat’s (1913, 4) description of the method ‘une personne, une langue’ has been hailed as the best way of bringing up bilingual
children, according to his friend, the linguist M. Grammont. This type of input pattern has been labeled as the best method for ensuring problem-free, that is mixing-free, bilingual development. Since then this ‘method’ or ‘strategy’ has been given as advice for parents on how to bring up their children to be bilingual.

Particular attention to parental input to the exclusion of other sources of input to the child does seem to be common in many discussions of child bilingualism. As Deuchar and Quay (2000, 8) point out, such studies tend to assume a middle-class, Western-type nuclear family with two parents, whereas in fact many bilingual children are brought up in families ranging from the extended non-nuclear type to the Western single-parent type. This overemphasis on parental input in ‘standard’ Western nuclear families is particularly clear in discussions of the type of bilingual family where each of the parents speaks their own native language to the child.

The orientation to ‘method’ or parents’ strategy assumes (following Ronjat) that children will be unable to differentiate their languages unless each is associated with a different person. This may underestimate the ability of bilingual children to differentiate their languages. This orientation to ‘method' involves two related assumptions (Deuchar & Quay, 2000, 8): (1) that language separation in the input is necessary for bilinguals to separate their languages and (2) that language separation in the input may be achieved only by one parent speaking one language, the other, the other language. However, language separation may occur in many different ways, e.g. according to the situation in the home versus outside the home, as in my study. Furthermore, we do not know whether language separation in the input is actually necessary. García (1983) investigated Spanish/English preschoolers who heard both English and Spanish from their mothers in speech addressed to them. The incidence of mixed utterances used by the children was quite low (range: 1-15%), and the children were able to use both Spanish and English as separate systems. García’s study (1983) shows that the lack of complete adherence to a one person-one-language input condition does not necessarily lead to the child’s failure to communicate effectively using two linguistic systems. Further, there are different standards set by adults to which bilingual children are exposed, e.g. a code-switched input used together with monolingual input in the child environment. This different
type of ‘adult standards’ does not necessarily incur language mixing. Researchers in bilingual children’s acquisition still do not know how much degree of language separation in the input is needed for a bilingual-to-be child to differentiate his/her two languages. Lanza (1997, 48) argues:

The question of language separation is not absurd in cases where the input is mixed or code-switched. A code-switched input does not preclude monolingual input in the respective languages. Bilinguals learn to vary their language use according to the interactional demands of the situation. The differentiation task for the bilingual child is to learn when it is appropriate to mix languages and when it is not appropriate to do so. The issue is critical and is an important aspect of the child’s language socialization. Hence at the representational level, the child may have two separate linguistic systems, although she still may have to learn to differentiate them in language use according to such sociolinguistic parameters as participant and topic.

In addition, findings on speech/language perception in monolinguals indicate that newborn infants have general auditory discrimination capacities which adapt to the language they are exposed to. De Houwer (1995, 234) hypothesizes that “if perception and comprehension in language acquisition are in fact at least partially related to language production, the different association in perception of a particular set of sounds with a particular speaker furnishes a very good basis, it would seem, for the eventual production of two fundamentally separate sets of sounds.” Infants have the ability to discriminate language-related signals, both segmental and supra-segmental and these discriminatory abilities focus the child’s attention on acoustic information in the input that is relevant to the development of their native language (cf. Genesee, 2003). Bosch and Sebastián-Gallés (2001) report that Spanish-Catalan bilingual infants can discriminate between their two native languages at 135 to 139 days of age and they do so at the same age that monolingual children discriminate between these same languages. In other words, the bilingual children were the same as monolinguals in their discrimination capacities as a result of dual language
exposure. There is evidence that infants’ impressive auditory discrimination and memory capacities are based on in utero language experiences in the last trimester. It appears not to be simply familiarity with the mother’s voice but rather the general acoustic properties of the speech signal that the infants respond to (DeCasper & Spence, 1986). Thus prosodic features could provide evidence of two languages for young infants, especially because speech heard in utero is low-pass filtered, i.e. the infant in the womb will hear much more of the lower frequencies, e.g., the fundamental frequency that carries some prosodic features (personal talk with Caroline Jones).

This over-emphasis on parental input has underestimated the capacity of bilingual-to-be children to take in other sources of input. The other sources of input such as peer or sibling input as well as other people’s conversation plays an important role in certain areas of monolingual children’s acquisition. Yuiko Oshima-Takane (1988, 1999) has proposed the following hypothesis: children learn the meaning of the personal pronouns by attending to the conversations of other people. She further suggests that overheard speech might be essential here, particularly for the second-person pronoun. If this proposal is correct, then children’s success at learning the personal pronouns has to be gained in part by attending to, and understanding, people who are talking to each other. As Zhu and Li (2005) have illuminated:

There is no systematic study of the role of siblings and peers in bilingual acquisition. Romaine’s (1995) typology of children bilingualism does not include peers as a key factor. However, observations in bilingual communities often suggest that siblings and peers are a major contributing factor in bilingual children’s language development and use, and their input may well be contradictory to that from the parents.

More specifically, Zhu and Li (2005) suggest “the role of input from siblings and peers is related to another issue, namely, implicit versus explicit learning, in bilingual acquisition. ……What is implicit, or even absent, in the input may well be
taken up by the child, while what is explicit in the input may not feature at all in the intake.”

Overheard input is a kind of implicit learning. The significance of other sources of input is undeniable but the nature and effect of other sources of input on bilingual acquisition remains unclear. Does input from peers, siblings and other sources always improve learning? To what extent and in which way can bilingual speech production be attributed to input from peers, siblings or other sources? Are there any qualitative and quantitative differences across children in the developmental course from child language to target language due to input of these sources? For example, peer input can be confrontational while the input of parents or other adults tends to be more accommodating to children’s needs. Investigation into the role of input from siblings, peers and other sources in bilingual acquisition can certainly shed light on the role of input on child language acquisition in general.

### 2.4 The role of context

It has been suggested that data on bilingual children interacting with their parents are inappropriate for the investigation of language differentiation because there is apparently no way of determining whether the child’s mixing is due to her lack of bilingual awareness or to her sensitivity to the fact that the interlocutor is also bilingual (Arnberg & Arnberg, 1988). The problem lies in the fact that there is one important notion which deserves more attention in language studies of child bilingualism in general and in language mixing in particular, that is, the conversation context of the child’s language, although work by Lanza (1997), Deucher and Quay (2000) and De Houwer (1990) has taken it into account with regard to language choice,

The notion of context is hard to define since various branches of linguistics have emphasized the influence of context on language and the notions of context are overlapped, as Schiffrin (1987, 11, cf. Lanza, 1997) notes:
For example, pragmatics focuses on how language is influenced by frames of mutual knowledge, discourse analysis on the influence of textual structures and conversational patterns, sociolinguistics on the influence of social situations and speaker/hearer identities, and the ethnography of communication on the influence of cultural constructs.

The boundaries between each of these various branches of linguistics also overlap. In the bilingual literature, the impact of social context on the bilingual acquisition process has been reported to be highly significant. Zhu and Li (2005) note that the languages which a bilingual child has to learn may represent very different values and have different social statuses in the community in question, as Romaine’s typology suggests. Consequently, attitudes towards children’s learning of languages which are different from the mainstream language may be very different for the extended family, the school, and society at large. According to Saunders (1982, 22), “if children’s bilingualism ... were viewed favorably both by their families and by the population in general, few problems would exist.” Similarly, Romaine (1989, 213) writes that “attitudes of extended family and friends can ... affect the development of children’s bilingualism”. Parents’ own attitudes towards the minority language would affect children’s attitudes in choosing that language. Whether a parent chooses to use his or her native language may have an effect on how parents come to regard whatever language is chosen (De Houwer, 1995, 229). Döpke (1988, 102) reports that in German families in Australia young parents anticipate that raising children bilingually “is doomed to failure”. As a result of the attitude, young parents “give up speaking German to their children if success is not immediate”. Therefore, these children are not brought up bilingually.

Lanza (1997, 69) argues that “knowledge of when it is appropriate to keep both languages separate and when it is appropriate to mix languages, [are] all dependent on the context of language use and the child’s language socialization.” Studies systematically investigating the bilingual child’s use of context to differentiate between his or her languages are rare in the literature. The context of the child’s language use and language acquisition is another neglected area in the study of...
mixing in child bilingualism, according to Lanza (1997). Vihman’s (1985) work revealed the importance of the context of setting (home vs. outside the home) in her son’s differentiation between his two languages. In this case, context was treated as a given background variable.

The second approach in the examination of the importance of context on bilingual children’s acquisition is the relationship between the context of language use and the child’s language mixing. Here the context is defined as both the context of community and family patterns of language use and the context of conversation (Lanza, 1997, 10). The burning question in first language bilingual acquisition research has been whether the young bilingual child initially processes the two languages as one system or as two. Language mixing has received different interpretations in these arguments. Those espousing the one-system or fusion system hypothesis have taken this phenomenon as evidence for the child’s inability to differentiate between his or her two languages. The two-system or separate development hypothesis has, on the other hand, contended that the bilingual child is able to differentiate the two languages from an early stage. Language mixing, for some researchers, stems from the mixing in the child’s environment. Many other explanations for language mixing have been suggested. More current work has provided important empirical evidence for the young bilingual child’s ability to form two linguistic systems without going through a stage of lexical or syntactic mixing. Stages of lexical and syntactic mixing then do not appear to be necessary correlates of early bilingualism, as Volterra and Taeschner (1978) contended. One criticism of the ‘fusion system’ or ‘one-system’ claim of early child bilingual process, held by Volterra and Taeschner (1978), Taeschner (1983), Redlinger and Park (1980) and Swain and Wesche (1975), is that some of these studies do not even examine their data in context. Children’s mixing cannot be investigated without a presentation of language mixing within a context (Genesee, 1989; De Houwer, 1990; Lanza, 1997).

Lanza (2000, 234) contends that in order to discern different sources for language contact, we linguists will need to explore more carefully the use of actual context for the child’s speech and how this may affect the child’s processing and use of the two
languages. Here the context of language use is not simply the particular language used with the child. Lanza (2000, 235) further explains that the sociolinguistic variable of context will trigger the psycholinguistic variable of language mode. Language mode is defined as “the stage of activation of the bilingual’s languages and language processing mechanisms at a given point in time” (Grosjean, 1998). Hence activation of one language or both will influence cognitive processing. A bilingual or a multilingual will find himself or herself somewhere on a continuum between a monolingual and bilingual mode (cf. Grosjean, 1998). This underscores the need to carefully examine the context of language development and use, that is, the extent to which an interaction is monolingual or bilingual in nature, even when doing a grammatical analysis (Lanza, 1998). Context is dynamic; language functions in context and as context (cf. Lanza, 2000). In examining Siri’s interactions from a discourse analytic perspective, Lanza (1997) operationalised this monolingual–bilingual continuum through the use of various discourse strategies employed by the parent to open negotiations for a monolingual or a bilingual continuum. She noted that Siri’s mother negotiated more of a monolingual context with her daughter than did the father. For example, her mother would often respond to Siri’s lexical mixing with clarification requests while her father often moved on in the conversation thereby acknowledging comprehension of her English lexical contributions. This could explain the fact that Siri mixed lexically more often with her Norwegian-speaking father than she did with her English-speaking mother despite her attested dominance in Norwegian. Thus, Lanza stresses that from a language socialization perspective, an interactional analysis of the context is vital for determining the communicative demands on the child. However, another aspect of context, namely, the language-learning context in a conversation has been neglected in bilingual first language acquisition research.

Bowerman (1982, 1985, 1988) and Karmiloff-Smith (1983, 1985, 1986) have proposed that children treat the language they are hearing as a formal problem space. Children acquiring a language have to pay attention to the language in input and the contexts of use to determine what conventions tie forms to meanings. Any forms that are discovered to be non-conventional will eventually be abandoned.
meaning is learned in context. This fact has been demonstrated for word meaning and syntax alike (e.g. Bates, Bretherton, Shor, & McNew, 1983; Berman, 1986; Dockrell & Campbell, 1986; Dromi, 1987a, 1987b; Carey, 1978; Keil & Carroll, 1980; Miller, 1984; Nelson, 1985; Shatz, 1987). The probability that any two forms will be heard in exactly the same set of contexts is, if not nil, near nil.

The context, non-linguistic and linguistic, in which the word or sentence is learned, will make a difference in the child’s first hypotheses about the word and sentence. Since output is not the mirror of input, Zhu and Li (2005) also remind us of the distinction between implicit learning and explicit learning. Children tend to learn better from both ostensive naming and from carefully designed age-appropriate sets of examples (Miller & Gildea, 1987). But once the child is no longer a toddler, he or she does not encounter much ostensive naming. Explicit sets of examples are useful, but not all children receive this sort of teaching. When it comes to explaining how children end up learning thousands of words each year, the only possibility is that they learn most of them through linguistic context (Sternberg, 1987).

The best way to learn a word through context is by hearing it used in a conversation with another person (Nagy & Herman, 1987). There might be a rich extralinguistic context to the conversation, the speaker will often have some sensitivity to the extent of the listener’s knowledge, and the listener can show his/her intentions or ask questions. Nobody would deny that children could learn at least some words from hearing them used in conversation, without the referent being present. It is probably these social-interactional experiences which provide them with the conventional lexical forms which they acquire during the course of their early lexical development. Bruner (1983) and Ferrier (1978) have examined some of the social-interactional routines in which prelinguistic children regularly participate (such as picturebook reading, peekaboo, build-and-bash games, and routine caregiving activities such as feeding, bathing, diaper-changing and dressing). These studies have revealed that these regularly occurring social-interactional routines typically consist of highly structured and standardised formats which contain clearly demarcated roles for both the adult and the child. Furthermore, these regularly
occurring predictable events provide the adult with a chance to produce particular linguistic forms which contain social-interational routines. Such a consistent experience of individual lexical forms in regularly and predictably ritualized events clearly provides the child with an optimal context for acquiring not only event representations but also context-bound and social-pragmatic words. But the precise nature of this learning process is a mystery. How can a bilingual child accomplish her/his word learning and sentence constructions in her/his two languages? What strategies does he or she employ to fulfill these tasks? Are there any patterns of complementary distribution in the bilingual child’s early lexical development, given the complementary domains of language use in his learning contexts?

Children exposed to two languages from birth may find alternative routes to bilingualism, given the different contexts of exposure and different intake from the exposure in each context. Hence, focusing on individual differences and exploring which variables may influence bilingual development can be illuminating in bilingual first language acquisition.

**2.5 The weaker language and language dominance**

Does the bilingual input condition and context of language use radically change their developmental paths? Paradis and Genesee (1996) and Zhu and Li (2005) raised the possibility that bilinguals’ language representations need not be identical to those of monolinguals. What kind of data is needed to address this issue?

The issue of dominance, that is, that one language is somehow stronger than the other and affects the processing of the other, has in fact been under fire in recent years in regards to bilingual first language acquisition (Lanza, 2000, 228). The investigators found some evidence that the children’s ‘code-mixing’ was related to their language dominance and suggested that “bilingual children make do with
whatever linguistic resources they have available to express themselves” (Genesee et al., 1995, 629). Mixing as a result of dominance was at play in the previous works of Leopold (1939, 1947, 1949a, 1949b), Swain and Wesche (1975), and Volterra and Taeschner (1978). Meisel (1989, 14) also points out that mixing is most likely to occur if one of the two languages is very dominant in the child’s competence. Thus, dominance has been reported to be another factor attributing to bilingual children’s mixing apart from mixing input from their environment.

Lanza (1997, 175) discussed the noted directionality of mixing as evidence for Siri’s dominance. She stresses that future work is needed on the grammatical development of the young bilingual child’s dominant and non-dominant languages (Lanza, 1997, 325). Lanza (1997, 174) further points out that the influence of dominance on the development of two morphosyntactic systems is indeed a rich field of enquiry in regards to the child’s processing strategies in language development. For instance, Siri’s Norwegian grammatical structure was more developed than her English.

Schlyter (1993) also provides an excellent discussion and analysis of the relationship between the weaker and stronger (that is, dominant) languages of children acquiring two languages simultaneously, from morpho-syntactical perspective. The stronger language displays all the aspects of normal first language acquisition, that is, core grammatical phenomena such as finiteness, word order, and placement of negation. In the weaker language, on the other hand, there is greater variation of these grammatical aspects. ‘Correct finiteness’ includes the correct finite verb forms, marked for tense and person, explicitly stated subject (normally personal pronouns), and correct word order (Schlyter, 1993, 297). Schlyter (1993) also notes that some elements, for example, a pronominal subject, may be replaced by an item from the stronger language, when the child is speaking weaker language. The same phenomenon occurs for Siri, who is dominant in Norwegian (Lanza, 1997). This kind of mixing is especially evident in Siri’s use of pronouns, particularly in self-reference. Lanza (1997, 153) provides a mixed utterance used by Siri who is 2;6 and acquiring Norwegian and English simultaneously:
This indicates that the stronger language in a bilingual child is exactly like a normal first language in monolingual children, whereas the weaker language in these respects has similarities with a second language. Hence Schlyter’s description of the weaker language implies that the bilingual child has less proficiency in that language as compared to the stronger language. Lanza (2000, 234) further distinguishes the notions of proficiency and dominance. She contends that dominance and language proficiency, or unequal mastery, are not to be equated although they may be related. In other words, unequal mastery may be a result of dominance. Although dominance cannot explain all aspects of language contact, some degree of language transfer, direct or indirect, can be attributed to dominance. Paradis and Genesee (1996) discuss different ways in which language contact affects the acquisition process, whether the acquisition is autonomous or interdependent. They state that transfer can occur because the grammatical property in question is also typically used in monolingual acquisition although perhaps not as frequently, or because the bilingual child is more dominant in one of the two languages. The notion of dominance is closely related to the notion of a balanced bilingual. However, as De Houwer (2005) noticed, it is a common observation that young bilingual children who have been regularly addressed in two languages from birth do not necessarily speak their two languages equally well. How would the weaker language develop? Can it develop separately from the influence of the stronger language?

De Houwer (2005) raised the issue of the uneven development of bilingual children’s two languages, stating that “[the fact that] young actively bilingual children essentially develop their two morphosyntactic systems separately from each other implies that one language may be further developed than the other”. For example, children studied by Juan-Garau and Pérez-Vidal (2000) and Schlyter (1993) showed quite different language abilities for at least some time during the period they were studied. De Houwer (2005) posed the relevant questions:

_**Jeg go there one day?**_

_‘I’_

27
Given the general lack of relevant data that could speak to this issue of uneven (but still separate) development, however, it is not clear what the range of possibilities here is: for instance, it is theoretically possible that a bilingual child produces complex sentences in one language while in the other language only two-word utterances appear. So far reports showing these kinds of divergent paths in skilled child speakers are lacking. It remains to be investigated what factors determine gross differences across bilingual children’s abilities in either language.

How are the rate and order of acquisition of grammatical structures and pronoun systems compared in the two languages if one is weaker? Is there any alternative way that bilingual children can avoid dominance-related mixing? What kind of language processing strategies can bilingual children utilize to tackle the two unbalanced languages in the process of bilingual development?

### 2.6 Bilingual acquisition strategy

The role played by parental discourse strategies has attracted particular attention in the literature. In a study focusing on parental communication strategies in English-German bilingual families in Australia, Döpke (1986) puts forward the hypothesis that parental communication styles that have been found to possibly facilitate monolingual development are also a variable in determining the final success of a bilingual upbringing. Lanza (1997) investigates the parents’ discourse strategies towards their child’s language mixing in order to determine the degree to which the children were actually socialized into mixing languages. She places five strategies on a continuum with the use of requests for clarification at the monolingual end of the continuum and the use of code-switching at the bilingual end. An analysis of the parents’ response to their child’s language mixing suggests a relationship between the parents’ discourse strategies and the child’s amount of lexical mixing. However, bilingual children’s strategies in language processing are another neglected area in the literature of bilingual first language acquisition.
Researchers agree that current work on bilingual acquisition is also informed by and benefits from recent developments in linguistic and psycholinguistic theory (Genesee, 2000, 168). Monolingual research shows that there may be different strategies for accomplishing early lexicon and syntax, which different children may prefer to different degrees from the child’s perspective (Peters, 1986). It is becoming increasingly clear that not all children do proceed in exactly the same manner, even when learning the same language (see Nelson, 1973; Bloom, Lightbown & Hood, 1975; Peters, 1977). There are two important early strategies, the bottom-up or analytic and top-down or synthetic approaches. In brief, when using the bottom-up approach the learner seems to try to work with items that are as small as possible – often only single (usually stressed) syllables of the adult language (extracted from, and taken by observers to correspond to, adult words). These small items are eventually both filled out and juxtaposed to produce longer utterances. By contrast, users of the top-down approach seem to feel comfortable working with much longer chunks of language (often referred to as formulae) which correspond to whole words or phrases of the adult language. These longer chunks are eventually analysed into their constituents which are then combined to form new utterances. Most learners use both these approaches, although particular learners may prefer one approach to the other. See Peters (1983) for further discussion. In order to pursue either of these strategies the child must acquire a sufficient amount of blocks – units to work with, either enough small items (bottom/analytic) to begin to hypothesize some sort of classificatory system to guide early combinations, and/or enough large chunks (top-down/synthetic) to perform some sort of preliminary analysis which will yield formulaic slots to be filled.

Looking from this perspective at studies on early vocabulary development, the multiroute model was formulated in order to explain the development of the meanings of context-bound, social-pragmatic, and referential words (Barrett, 1983, 1986, 1991). According to this model, there are two principal routes in early lexical development, one of which is followed by referential words, the other of which is followed by context-bound and social-pragmatic words. The model proposes that
these two routes differ in terms of the nature of the mental representations onto which the words are initially mapped. Referential words are initially mapped onto mental representations of prototypical referents; the child then uses these words to refer to objects, actions, properties, or states which closely resemble these prototypes. ‘Prototype’, according to Bowerman (1978, 1980) and Barrett (1982, 1986, 1987), is a representation which, although it may initially be acquired as mental representations of individual referential exemplars, is subsequently analysed by the child into constituent features, with the result that these prototypes eventually come to consist of correlational clusters of perceptual and functional features. By contrast, context-bound and social-pragmatic words are initially mapped onto event representations. The child then uses these words in the contexts of these represented events. Thus, according to this model, children utilise two different kinds of internal representation when they first began to acquire words: prototypes and event representations (Mandler, 1983; Barrett, 1987). Nelson (1973) was the first to observe that children could be distinguished in terms of whether, at the 50 word, productive vocabulary level, more or less than 50% of the words which have been acquired consist of general object names. “Referential” children have 50 word vocabularies which contain more than 50% of object names; these children acquire a large number of object names as well as some action names, proper names, state names, etc. By contrast, “expressive” children have 50 word vocabularies which contain fewer than 50% of object names; these children have a tendency to acquire larger numbers of personal names, action names, state names, and social-pragmatic words (including formulaic phrases), as well as general object names. It is evident that referential children lexicalise their object-orientated speech acts, e.g., requesting objects, drawing attention to objects, commenting on objects, etc. in more elaborate and diverse ways, whereas expressive children lexicalise their socially orientated speech acts, e.g., commenting upon people, manipulating the behaviour of other people, playing games with people, etc. in more elaborate and diverse ways (Barrett, 1981). This finding is not surprising, given the differing contents of the children’s vocabularies. However, it ought to be noted that many children are neither extreme referential nor extreme expressive types, but instead fall between the two end points of what should really be construed as a continuum (see Lieven et al., 1992). Given the two lexicons in the bilingual children’s environment, the early acquisition of
words and word meanings by young bilingual children is clearly an immensely complicated process. The process can be constrained by a bilingual child’s existing cognitive representations, by the child’s capacity for analysing, modifying, and elaborating internal representations, by the linguistic input, and by the learning contexts.

It has received some attention in the field of bilingual first language acquisition that children learning two languages simultaneously might have differentiated linguistic systems from at least the stage of first words, and possibly earlier. Quay (1993, 2) reanalyses the data in Taeschner’s (1983) three stage model, and finds that Taeschner’s subjects do indeed have some translation equivalents. Quay (1995) and Deuchar and Quay (2000) give further evidence in favour of language differentiation. Their bilingual subject Manuela has crosslinguistic equivalents from the beginning of interpretable speech onwards. In order to tackle the problem of what counts as evidence in establishing whether infants process two linguistic systems or one, Genesee (1989, 165-166) emphasizes the need for bilingual studies to take into account child language use in different contexts as follows: “In particular, if the differentiated-language systems hypothesis were true, one would expect to find more frequent use of items from the weaker language in contexts where that language is being used than in contexts where the stronger language is being used, even though items form the stronger language might predominate in both contexts.” So far, the existence of equivalents in the early lexicons of a bilingual child and context-based use of his two languages have received most attention and taken as evidence of the bilingual child’s early differentiation of the two languages. De Houwer (1995, 232) questions whether the purported non-use of equivalents in early bilingual acquisition must necessarily be interpreted in the sense that the child speaks only “one language which is a language system of his own” (Volterra & Taeschner, 1978, 317). The occurrence of only one member of an equivalent pair in early child productions could, for instance, be related to a gap in the input (and subsequent intake), and as such does not tell us anything about whether the child is approaching his or her two input systems as a single system or not (Hayashi, 1992). However, it is not clear whether bilingual children represent their two languages’ vocabularies in the same
way as monolinguals. Can the evidence of different representations of a bilingual child’s two lexicons within their differentiated context-based use be sufficient to account for his or her separate development of the early two languages, even though there is no record of equivalents in his or her early lexicons? In which way do the two strategies show up in a bilingual child? Are they the same as monolingual patterns? Do different types and degrees of child bilingualism affect the patterns of early lexical development? Do these two acquisition strategies manifest in the bilingual child’s other areas of language development, e.g., syntax and personal pronouns? How do individual preferences in mode of processing affect developmental processes? Are there any connections between acquisition/processing strategies and bilingual mixing? Until all these issues are clear, we cannot discount the effect of acquisition strategy on bilingual children’s development.

2.7 Separate Development Hypothesis vs. Fusion Development Hypothesis

As Meisel (2000, 14) states, ”one of major issues dealt with in research on bilingual language acquisition, probably the single most important one, is the question of language separation”. De Houwer (1995, 230) further stresses that ”the central issue in the field of bilingual language acquisition so far has been the question of to what extent a young bilingual child develops two separate linguistic systems from the very beginnings of speech production”. This clearly concerns every level of linguistic knowledge, including the bilingual person’s lexical, semantic, morphosyntactic and social-pragmatic or communicative competence. Virtually all studies of infant bilingual development have found that bilingual children mix elements from their two languages, but researchers differ with regard to the explanations of this phenomenon. The controversy surrounds the issue of when bilingual children are able to distinguish the two language systems. Two opposing views have been expressed. The first maintains that children start out with just one fused system, referred to as the “fusion system” in Meisel’s term (1989, 37) or “unitary language system hypothesis” in Genesee’s term (Genesee, 1989, 164), with one lexicon and
one set of syntactic rules. The second argues that bilingual children have two distinct systems from very early on, with separate lexical and syntactic systems for the languages involved, reflected in the Separate Development Hypothesis (SDH) (De Houwer, 1990, 66; or the ‘Differentiation Hypothesis’, as Meisel (2001) has termed it).

In the studies that claim the validity of the “fusion system” or “unitary language system hypothesis”, bilingual children are thought to start out with a single lexical system including words from both languages and to apply the same syntactic rules at first, irrespective of language. In short, children are seen to have a unitary/fusion language system with undifferentiated phonological, lexical and syntactic subsystems. Different studies have defended this position with different arguments (Imedadze, 1967; Leopold, 1970; Swain, 1977; Volterra and Taeschner, 1978; Redlinger and Park, 1980; Taeschner, 1983; Saunders, 1988). Leopold (1970) based his single-system interpretation on phonological and lexical grounds, making no claim about a unified syntax, while Swain (1977) postulated a “common storage model” of bilingual development according to which all rules of both languages are initially stored in a single location. Volterra and Taeschner studied the language acquisition of two bilingual German/Italian girls who were recorded from 1;5 to 3;6 for Lisa and 1;2 to 2;6 for Giulia. Based on their language production, Volterra and Taeschner (1978, 311) presented a three-stage model of early bilingual development, in which children are seen to have a single lexical and syntactic system at first then gradually separate their language into two distinct systems:
Stage I the child has one lexical system comprising words from both languages (1;6 – 1;11).

Stage II the child distinguishes two different lexicons, but applies the same syntactic rules to both languages (2;5 – 3;3).

Stage III the child speaks two language differentiated both in lexicon and syntax, but each language is associated with the person who uses that language (2;9 – 3;11).

The age ranges here are worked out by Meisel (1989, 16). The evidence that has been used to support the fused system is language mixing. It is argued that the two bilingual German/Italian girls’ initial mixed utterances show that they were using only one lexical system. De Houwer (1990, 30) argues that the use of utterances that contain lexical items from two languages is not necessarily a reflection of one underlying language system. Mixing utterances should not be treated alone without taking input and context into consideration. It needs to be investigated under which sociolinguistic conditions they do and do not appear, and whether children are socialised in an environment that encourages their use or not (Lanza, 1997). Genesee (1989, 165) contends that in order to maintain the one language system hypothesis one would need to show that bilingual children could use items from both languages indiscriminately in all contexts. Mixing in developing bilingual children can be seen to be using whatever grammatical devices they have in their repertoire or whatever devices they are able to use given their current language ability (Genesee, 1989, 169). This kind of communicative strategy in bilingual development is independent of the issue of language representation, therefore, it cannot serve as evidence for one system or a fused system in the early bilingual development.

At stage II, the girls were recorded to use word order rules of one language in the other language. The authors consider three syntactic constructions which differ in
adult Italian and German: possession, adjective placement, and negation. A whole-page table illustrating examples from Lisa’s data is given for each one of these constructions in both languages: possessive constructions from age 1;8 to 3;4, adjective constructions from 2;3 to 3;6 (no Italian constructions before the age of 2;9), and negative constructions from age 1;5 to 3;6. Volterra and Taeschner (1978, 322) conclude that Lisa appears to acquire syntactic rules only gradually: “For a long period of time, until the age of 2;9, she appears to have acquired only one syntactic system” (c.f. Lanza, 1997). However, Meisel (1989) finds that their data do not support this claim, and argues, for example, “the commonalities in the use of the two languages may be the result of transfer from the dominant language” (Meisel, 1989: 19). Meisel (1989) points out that the evidence given by Volterra and Taeschner (1978) for the three syntactic constructions is not very strong. It suffers from both methodological and theoretical problems (De Houwer, 1995). For example, with regard to the placement of adjectives, Volterra and Taeschner claim that adjectives occur in premodifying position in both languages. However, as Meisel points out, adjectives do not occur in the children’s Italian before 2;9, which is the beginning of stage III – the stage at which children reportedly use language-specific rules. On a more analytical level, Meisel (1989) criticizes Volterra and Taeschner (1978) for using interference phenomena as a basis for their fusion claim. Interference phenomena cannot be used as a basis for a single grammatical system claim, since in order to speak of interference, there must be two systems that can interfere with each other (Meisel, 1989). Volterra and Taeschner (1978) further present evidence that their informant Lisa used the same negative structures as monolingual children in each language separately at a time when she was still claimed to be in ‘Stage II’. Meisel (1989) protests that these data cannot be used in support of Volterra and Taeschner’s claim that Lisa used the same syntactic rules in her two languages. Similar arguments can be found in work by Vihman (1985, 310) and Sinka and Schelletter (1998, 304). Taeschner (1983, 155) claims that her bilingual informants’ word order patterns in early two word utterances show the application of a single grammatical system, while at the same time she notes that the girls’ word order patterns closely resemble the orders used by monolingual children in each of the two languages. De Houwer (1995, 234) argues that the evidence is not sufficient for Taeschner’s fusion interpretation. She further states that when similarities are found
between bilingual and monolingual data it is possible that what might at first sight look like the application of the same “rule” to two languages by the bilingual child is in fact the result of general acquisition principles related to the acquisition of each language separately. In a word, Meisel (1989, 18) concludes that there is not sufficient evidence to support the hypothesis that bilingual children must pass through an initial stage of syntactic mixing which, in turn, would have to be explained as a result of their processing both languages as a single system.

In tackling the problem of what counts as evidence in establishing whether infants process two linguistic systems or not, at the morphosyntactic level, Meisel (1989) and De Houwer (1990) agree that those areas in the adult languages which contain different structures and forms which fulfil the same semantic and pragmatic functions can be used as a testing ground for exploring the validity of the separate development hypothesis. In addition, one should try to find evidence for or against a non-differentiated syntax in structural areas where the language production of monolingual children in each language differ. Meisel (1989) suggests that if it could be shown that young bilingual children used linguistic structures in which the two adult target systems (including the respective child languages) differed, this would constitute evidence against the one-system hypothesis. Furthermore, De Houwer (1990, 68-9) adds that the database for probing the structure relationship between a young bilingual child’s two languages should ideally consist of utterances with lexical elements from one language only. Following this approach, Meisel (1986, 1989) reports on the syntactic development of two French and German bilingual children. The children were observed between 1;0 and 4;0 with an MLU of 1.75-2.25. The parents claimed to use their respective native language exclusively with their children. Meisel investigated two phenomena: the children’s use of word-order sequences and verb inflections in French and German. These syntactic features were chosen because they differ in mature forms of the target languages and in monolingual children’s acquisition of the target forms. The results of Meisel’s (1986, 1989) study on word order in bilingual French-German morphosyntactic acquisition show that his subjects use different word order sequences in the two languages as soon as they start producing multi-word combinations. In each language, the word order produced by bilinguals is much like that produced by
monolingual children. He finds that verb inflections are acquired early and virtually without errors. Meisel (1994) focused on the development of finiteness in French-German bilinguals, arguing that, once the functional category IP had been acquired, French and German grammatical structures were different, the French structure being relatively adult-like while the German structure would have to be reanalysed to approximate adult grammar. Meisel (1989, 13) claims, therefore, that there is “strong evidence in support of the hypothesis that bilingual children are, in fact, able to differentiate between two languages as soon as they use what may be interpreted as syntactic means of expression”. Meisel (1990, 18) hypothesizes that bilinguals, driven by the need to discover the regularities of more than one system, “tend to focus more on formal aspects of language and are therefore able to acquire certain grammatical constructions faster and with fewer errors than many or most monolinguals”. Genesee (1993, 75) summarizes the state of the question around the issue of language separation emphasizing the following: “the extant evidence suggests that bilingual-to-be infants are capable of discriminating and differentiating between different spoken languages at the point in development when they begin to utter single words”.

In contrast to Meisel’s (1989) study, De Houwer (1990) covers a broad spectrum of morphosyntactic development in Kate, a Dutch and English bilingual, from age 2;7 to 3;4. Kate received her input of two languages regularly from birth on and her parents followed the one-parent-one-language strategy to address her. De Houwer addresses the questions to what extent Kate’s morphosyntactic development proceeds in a language specific manner. De Houwer provides strong evidence for the Separate Development Hypothesis: Kate uses Dutch morphosyntactic devices within Dutch utterances and English morphosyntax for her English. Moreover, in-depth analysis of the development of Kate’s morphosyntax and comparisons with available monolingual child data suggest that her production is similar to that of Dutch and English monolinguals. As for Kate’s mixed utterances, which are defined as within the utterance, there are morphemes from both languages, De Houwer notes that Kate makes use of these mainly in the company of people whom she knows to be fluent bilinguals. Kate’s mixed utterances, in De Houwer’s view, are well formed and grammatically rule-bound. They “show her creative manipulation of the tools for
fluent speech production: a bilingual lexicon and two closed linguistic rule systems” (De Houwer, 1990, 114).

All of the above evidence clearly supports that the Separate Development Hypothesis indeed captures an important aspect of the bilingual acquisition process in general (De Houwer, 1995, 45; 2005). However, as De Houwer has discussed, the SDH was originally formulated to apply only to children growing up according to the ‘one person, one language’ principle. There is not sufficient case study to show that this hypothesis is also applicable to non ‘one person, one language’ types of bilinguals, for example, a combination of Type 3 and Type 6 in Romaine’s categories (1995). “The current ‘database’ for studies supporting the Separate Development Hypothesis consists of the speech productions of 29 children (17 boys, 12 girls) between age 1 and nearly 6 years, who together are acquiring 12 languages in 13 different combinations. All but two of those 12 languages belong to the Indo-European language family (Catalan, Dutch, English, French, German, Italian, Latvian, Slovak, Spanish and Swedish). The two non-Indo-European languages are Basque and Japanese” (c.f. De Houwer, in press). It is clear that most of the published studies in support of the SDH in bilingual first language acquisition involve children whose languages are typologically similar and/or genetically related. Can we find the same acquisition process in a bilingual child whose two languages are typologically dissimilar and genetically unrelated, namely English and Mandarin? The unique language pairs combined with a different type of a bilingual child offer the potential for testing the validity of the Separate Development Hypothesis.

While an ever-increasing number of studies have illustrated that the bilingual child can and does separate/differentiate between his/her two languages from very early on,

Lanza (2000, 227) draws attention to the possibility that language contact is not a sign of confusion. Hence the question moves on from the one- versus two-system debate to ask how the languages interact in acquisition and use. Paradis and Genesee (1996) discuss the extent and nature of interactions, that is, influences between bilingual children’s developing systems. In other words, differentiated representation could entail developmental autonomy or independence. Paradis and Genesee (1996) define interdependence as “the systemic influence of the grammar of
one language on the grammar of the other language during acquisition, causing differences in a bilingual’s patterns and rates of development in comparison with a monolingual’s”. They suggest that there are at least three ways in which interdependent development might be manifested: acceleration, delay or transfer. According to Paradis and Genesee (1996), acceleration would manifest itself in precocious development in one domain of one of the bilingual’s languages relative to normal development of that language in monolinguals. In contrast, delay would manifest itself in a lag in the development of one or both of the bilingual’s languages relative to that of the corresponding monolinguals. While a lag might be attested in the overall development of language, it is most likely to manifest itself in structure-specific ways. In fact, to date, there is no evidence that bilingual children exhibit delays in overall syntactic development (see Meisel, 2001 for an overview). In both cases, delay and acceleration, the bilingual child would differ from the monolingual child in speed or rate of development but not in terms of the structural characteristics of their respective languages. Transfer, however, consists of the incorporation of a grammatical property of one language into the other. To substantiate claims of true transfer, it is necessary to document systemic effects, not simply episodic performance effects. In this case, for a certain period of time, the bilingual child’s developing grammars will differ from that of monolinguals as a result of transfer (cf. Genesee, 2000, 168-9). Although interdependence is considered in its three manifestations, Paradis and Genesee (1996) do not find evidence supporting interdependent development, neither as transfer nor as acceleration nor as delay. Rather, the emergence of expressions of finiteness and agreement as well as of word order in negated utterances in English and French follows the same acquisitional patterns and develops at the same rate as in monolingual acquisition. This includes the observation that finiteness appears earlier in English than in French (cf. Meisel, 2001, 29).

Thus, the point remains, as Zhu and Li (2005) remind us, that similarities between bilingual and monolingual acquisition do not necessarily mean (i) that the two languages a bilingual child is acquiring develop in the same way or at the same speed, or (ii) that the two languages a bilingual child is acquiring do not influence and interact with each other. Döpke (2000, ed.) collects nine papers which
contribute to the understanding of types of language contact and crosslinguistic structures in the early bilingual child language data in Indo-European languages. All the researchers in their studies agree that bilingual children predominantly produce language-specific structures at all stages of their development. This indicates that the simultaneous acquisition of two languages proceeds within the structural scope of each of the target languages. At the same time, they discover the crosslinguistic structures evident in the data. They treat them as a legitimate feature of bilingual development and take them as a means for tracking the cognitive processes involved in the simultaneous acquisition of two languages. However, the number of studies of this kind is relatively small and much work still needs to be done to enrich the database and to increase our understanding of bilingual contact involving typologically different languages with all types of bilinguals acquiring and using languages in various contexts.

2.8 Concluding remarks

In sum, the research literature in bilingual first language acquisition has drawn particular attention to young children’s language mixing and morphosyntactic development around the central issue of the one- versus two-system debate. Bilingual children’s pronoun acquisition has not been investigated in a systematic way. Over the last decade, however, detailed empirical research into bilingual child language acquisition has led to more evidence in support of the idea that from an early age there is separate morphosyntactic development for each of the bilingual’s languages. However, most of these studies are conducted in the one-language-one-person situation, which is different from majority of immigrant families. Moreover, the bulk of published studies in bilingual first language acquisition involve children whose languages are typologically similar and/or genetically related, whereas two typologically dissimilar and genetically unrelated languages, namely English and Mandarin, have not been examined.

The literature review has isolated four main areas of neglect in studies of bilingual children’s acquisition: the impact of non-parental inputs, the role of learning
contexts, the nature of the weaker language, and the importance of acquisition strategies. One way to examine these issues is to study the acquisition of personal pronouns in a case study of a bilingual child. Hence the present study will address those issues which have not received sufficient attention in previous studies of language separation and language interaction in bilingual first language acquisition.
3 Methodology

3.1 Introduction

All academic endeavours are based on theoretical assumptions, although these theoretical assumptions are not always stated explicitly. One theoretical assumption upon which this study is based is that bilingual children’s developmental languages, like other languages, are systematic and can be described. Another assumption is that bilingual children’s developmental languages, like other languages, are constantly changing, making progress to approximate the target languages. Finally, while the developmental languages of individual speakers may change in unique ways, there are general patterns and constraints on possible changes which can occur in bilingual acquisition and in first language acquisition in general.

Given these assumptions and due to constraints of time, resources, and human limitations, the present study is limited to a description of one aspect of one bilingual child’s developmental languages in the context of his general syntactic development as these two languages develop over a period of 30 months.

This chapter describes the methodology adopted in this study, with special focus on areas where there has been continuing debate. Section 3.2 begins with research design and with a discussion of the case study approach and input conditions. Section 3.3 turns to the procedures of data collection and data interpretation. Section 3.4 concerns the characteristics of the database with a review of MLU measurement. Section 3.5 concludes the discussion of methodology.
3.2 Research Design

3.2.1 The case study approach

The case study approach is common not only in studies of child language, as we shall see, but also in the social and behavioral sciences in general. There are, in fact, many examples now of case studies of child languages, including bilingual acquisition. Well-known bilingual case studies reported in the first half of the twentieth century include those by Ronjat (1913) and Leopold (1939, 1947, 1949a, b), who were both fathers of bilingual children and kept detailed diary records. In the second half of the twentieth century, when the techniques of audio and video recording became available, several monographs reporting on monolingual or bilingual development of a particular child were published. For example, Smith (1973) reported on his son’s acquisition of English phonology, Dromi (1987) followed her daughter’s early lexical development in Hebrew, Hernández Pina (1990) reported on her son’s acquisition of Spanish, Tomasello (1992) on his daughter’s early acquisition of verbs, Deuchar (2000) on her daughter’s early development of English and Spanish. In all of the above cases, it was the parent who collected the data, and this has certain advantages. The parent can be present over a much wider range of situations than an investigator who makes scheduled visits, and so has access to a potentially much larger sample of utterances. Linguist-parents can keep diary notes in phonetic transcription, which makes them less open (although certainly not immune) to criticism that they may have over-interpreted a child’s utterance as representing a particular word or word sequence. However, now that most researchers make use of recordings, inter-judge reliability checks can be made as well.

Case studies have also been successfully conducted by non-parents. For example, Fletcher (1985) on the monolingual acquisition of English, De Houwer (1990) on the bilingual acquisition of Dutch and English, Lanza (1997) on language mixing in the acquisition by two Norwegian and English bilingual children, and Meisel and his
research team on the DUFDE longitudinal study\(^1\), which investigates the simultaneous acquisition of French and German by children from the age of 1;0 to 4;0 living in Germany (Meisel, 1990, 1994). In the present study, the mother is the main data collector and analyst in English and Mandarin and the grandmother is the additional Mandarin data collector due to data availability as well as resource constraints.

In a discussion of the usefulness of case studies in these areas, Platt (1988) quotes a definition of the case study method by Runyan (1982) as “the presentation and interpretation of detailed information about a single subject, whether an event, a culture, or … an individual life” (cited in Platt, 1988, 4). As Platt points out, case studies are usually associated with qualitative rather than quantitative methods, and contrasted with survey or experimental approaches. Dromi (1987, 63), in a book describing the acquisition of Hebrew by her daughter, outlines the differences between quantitative and qualitative methods as follows: “Where the quantitative approach maintains that scientific knowledge progresses only by testing specific and well-motivated hypotheses, qualitative researchers argue that behaviors can be understood by a trustworthy analysis of a given process occurring in its natural context.”

Case study research was selected for my investigation of the pronominal development in child bilingualism. Although the review of the literature has indicated that this approach has a long-standing tradition in the study of developmental bilingualism, it is important to keep in mind the theoretical justification for such an approach as well as the weaknesses such an approach entails. As Lanza (1997, 81) agrees in her investigation of language mixing in infant bilingualism, “the main advantage of a case study is the opportunity to undertake a more holistic approach to the research question(s) at hand”. With a case study, multiple sources of evidence can be used (Yin, 1984). My study will comprise two types of data: free conversation and book-reading interaction. All recording sessions contain samples of an informant James’ free conversation. Recording sessions 18, 20, 24, 26, 27, 29, 35, 38, 39, 40, 41, 49, 50, 52, 56, 57, 58, and 63 in Table 3.2 on

pages 55-56 include story-telling interactions between James and either adults or peers. The advantages of these two types of data in tapping on children’s variation in speech have been discussed in Lanza (1997, 91, 92). A more holistic approach allows for the investigation of the interrelationship of variables. As Lanza (1997) says, quoting Agar (1980, 123), “Better to understand their interrelationship in a few cases than to misunderstand three of them in a population of 500”.

In order to investigate bilingual children’s pronominal acquisition from a developmental perspective, a longitudinal study was deemed necessary, entailing data collection over a period of time. Dromi (1987, 65) points out that “since case studies are so intensive, they are usually carried out with a small number of subjects”. This is the case for this study. Given the nature of the research questions posed, there is a need to work closely within the family of the child selected for the study. And this in itself has practical implications.

Although it has been argued that generalizations cannot be made on the basis of case studies, Platt (1988, 18) considers that “there seems [to be] no reason to except case studies from the normal assumption that one can reasonably make generalizations from what one knows already until information inconsistent with this becomes available”. She also reminds us that, like other kinds of study, the case study is not conducted in isolation; there is a range of other studies, with which each case study can be compared and by which it can be evaluated. Platt (1988, 20) argues that “case studies … are more likely to uncover unanticipated findings as the details are explored. This openness to surprise and availability for multiple purposes is a real strength”. In the present study, the unanticipated findings of the bilingual child’s transition from nominal person reference to pronominal one have reflected this last strength of the case study approach.

At the same time, I bear in mind Dromi’s warning to those considering embarking on case studies: “Case study results are always very complex. Straightforward answers to specific well-defined questions will rarely be derived from a case study investigation. Researchers who select case study methodology should be prepared for repeated attempts to examine their findings so that they will be able to make the
best sense of their results” (Dromi, 1987, 67). Nevertheless, Dromi considers case study methodology to be particularly appropriate for the study of early language because during the early periods of production the linguistic knowledge of the child changes quickly and constantly and it has been shown that early verbal productions are strongly dependent on their linguistic and non-linguistic contexts (Dromi, 1987, 64). She also argues that, since early words are often phonological modifications of conventional forms and a child’s expressions are so telegraphic, an analyst familiar with the child is necessary for correct interpretation.

The obvious drawback to the case study is the lack of generalizability. One cannot, for example, make generalizations about all bilingual children based on the experiences of only one bilingual child. As Dromi points out, case studies may be open to criticism on grounds of subjective analysis and the relatively limited scope of their generality (Dromi, 1987, 65). Research, however, is cumulative, and the increasing number of case studies of child language development provides a good base for comparing the findings of one study with that from other studies. This in turn allows the investigator the opportunity of verifying case study results (cf. Dromi, 1987).

Dromi (1987) admits that there is a danger of ‘mother-investigators’ overestimating the knowledge that their children have, but suggests that this can be overcome by inter-judge reliability measures. The usefulness of such measures will become particularly apparent in this research, in which the participation of a grandparent (a monolingual Mandarin speaker) and a bilingual English-Mandarin speaker in the process of data transcription and coding prevents over-reliance on the mother-researcher’s judgments. One of the final points Dromi (1987, 67) makes about case studies is that they “do not allow for … the direct testing of underlying covert knowledge” such as comprehension. The present case study, like many others, therefore focuses on production, not comprehension, although I recognize that comprehension often precedes production. Any generalizations to be made from my data of course apply to production only. Hence, despite inherent shortcomings, the case study can provide a fruitful methodology through the power of its description.
3.2.2 Naturalistic data over experiments

Much early research on children’s pronouns was conducted via experiments. For example, Deutsch and Pechmann (1978) used an experiment to elicit pronouns from German children. Tanz (1980) carried out an experiment on pronoun production by children under three and a half years old. Neither of these experimental investigations has thrown much light on children’s pronoun development; they merely underline the lack of pronoun confusion in young subjects.

Experiments on the production or comprehension of pronouns overcome the problem of unrepresentative sampling to which spontaneous data are liable, since they can elicit a response for every pronoun. However, other hazards arise in experimental investigations, which test small children’s control of fine linguistic distinctions. It is difficult to obtain reliable responses which are not experimental artifacts from children at the crucial stages of development (in the case of pronouns, around two years for many children). Chiat (1986, 344) observed that by the time the child responds reliably, the acquisition process may be well advanced, and the experiment may fail to tap it. This would explain why appropriate usage is often evidenced earlier in spontaneous production than in experiments. It may be that experimental results sometimes say more about the experimental situation and the strategies children use in that situation than they say about the child’s processing of the particular linguistic forms under investigation.

In this study, the ‘exploratory’ naturalistic method of investigation was favored over a comprehension experiment for two reasons. First, it is difficult to elicit any response at all to experimental testing from children as young as those acquiring pronouns. Secondly, it is almost impossible to ensure that any response elicited is linguistically conditioned and is not simply a response to the experimental situation. Naturalistic data, though not open to the kind of control imposed in experimental testing, are on the other hand free from the distortions often introduced by such control, especially where children are the informants. Also, longitudinal data gives important information on development over time.
3.2.3 The case study informant and his linguistic environment

The present study comprises a case study of one Mandarin-English bilingual child from a Mandarin speaking family in Australia.

The informant of the present case study will be referred to as James. He is the first-born son of a Mandarin-speaking immigrant family. He was born and brought up in a middle-class family in Sydney, Australia. Both the father and the mother hold university degrees. They are native speakers of Mandarin, one of the largest non-English speaking communities in Sydney. Both parents started learning English as a second language at secondary school in China and followed up learning English at Chinese and Australian universities. By the time the child was born, they were settled in Sydney. The parents had been using English regularly at work for five years. The parents spoke Mandarin to each other at home, but discussed work-related issues in English.

Since Australia is a multilingual and multicultural society, the importance of home language maintenance was recognized in the Chinese community in the 20th century. The attitudes in the child’s environment towards his developing bilingualism are therefore quite supportive, especially in his early language period before 2;8, that is, before he was sent to an English-speaking childcare centre. Once he was in the childcare centre, he kept silent for around half a year. During that period of time, one of his childcare teachers even questioned his vocal production ability, worrying the child’s father, although the teacher admitted that the child did understand what she said but the problem was that he refused to speak any English in the centre. However, the child’s mother noticed that the child did practise English at home and he would play with toys and speak English to himself for more than an hour each day when he came back from the centre. From that time on, the father changed his strategy from speaking Mandarin only to the child to speaking English to the child during a half hour jogging time each day. That is why from recording session 31 (3;2;12) on, we find that the father becomes James’ main English interlocutor. Generally speaking, the child’s bilingualism at the age period studied seems to be accepted by the environment as positive.
3.2.4 Age range of the study

The study reported here extends from when the child was 1;7 until the age of 4;6, although not all the analyses reported in this dissertation involve the whole range. Most of the analyses, in fact, focus on the data up to 4;0. In that period, the child was in the process of acquiring pronouns. James is a child who prefers observing things and events before participating. He talks less but acts more. In addition, James is a healthy child without learning problems. The performance reports from his childcare centre indicate that James’ IQ and general ability development are normal and he is good at spatial reasoning and logical thinking.

The corpus is divided into six age clusters according to his pronominal development. In the context of the child’s overall syntactic development from age 1;7 to 4;6, the child’s pronominal development moves, in both languages, through the following phases:

I. Nominal person references to others (1;7-2;0);
II. Self-reference with nickname (2;0-2;3;16) and self-reference with name and nickname (2;4-3;0;07);
III. Emergence of first person pronominal reference used together with other self-referential expressions (3;0;07-4;0);
IV. Emergence of second person pronominal expressions (3;2;09-3;9;26); and
V. Emergence of other pronominal expressions (3;9;26-4;6).

The study will concentrate on phases I, II, III, IV and early V only. Later phase V will be left for future exploration. Chapter 4 discusses the child’s overall language development with a focus on word order constructions and subject realisation in both Mandarin and English. Data from phases I to V will be included. Chapter 5 examines the issue of the transition from nominal development to a pronominal one. Data from phases I to III will be utilized. Chapter 6 investigates the pronominal
development of the two languages, and data from phase III to early phase V will be analysed.

3.2.5 Type and variety of language input

James was exposed to Mandarin in the home, where the five family adults around him are speakers of Mandarin varieties. Two of them are grandparents who are monolingual speakers of Mandarin varieties. The other three are his parents and auntie who are also speakers of English outside the family context. Both parents and auntie spoke to each other at home in Mandarin but use English fluently at work and in other domains since English is the language of mainstream society in Australia. James was mainly addressed in Mandarin at home. When the context occurs such as English-speaking friends’ visits, English story-reading time, English media discussion, English chat time and English playtime, the parents and auntie would speak English to the child. Although both parents mainly address the child in Mandarin at home, James was exposed to Mandarin and English regularly from birth. He was born in an Australian hospital and received English input from the first day. Each day, the mother set aside for James a half-hour for watching English children’s television programs and a half-hour for English story-reading. The special English-speaking activity time which James engaged in with his parents increased with James’ age. The mother took James to attend an English-speaking mother’s group one day a week until James was one year old. The family’s daily activities such as shopping, outings or visits of neighbours, friends, peers and doctors are all conducted in English. When James was 1;1, his grandmother, a Mandarin speaker, came to Australia and became his day care-giver so that his Mandarin contact was increased until he was 2;8. At 2;8, he was sent to an English-speaking long day care centre two days a week, which became full time day care six months later. The following table 3.1 illustrates his sociolinguistic settings and input conditions.
### Table 3.1 James’ sociolinguistic settings and input conditions

<table>
<thead>
<tr>
<th>Age period</th>
<th>Sociolinguistic settings</th>
<th>Context</th>
<th>Carers</th>
<th>Input</th>
<th>Amount (hrs/day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-1;1</td>
<td>Family</td>
<td>Daily routine</td>
<td>Mother, Father, Auntie</td>
<td>M, E</td>
<td>5-6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>English TV, storytelling, other outside activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1;1-2;8</td>
<td>Family</td>
<td>Daily routine</td>
<td>Mother, Father, Auntie, Grandmother</td>
<td>M, E</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td>English TV, storytelling, English parent meeting, other activities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2;8-3;2</td>
<td>Family</td>
<td>Daily routine</td>
<td>Mother, Father, Auntie, Grandmother</td>
<td>M, E</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>&amp; Child care centre</td>
<td>English TV, storytelling, other activities</td>
<td>Teachers &amp; peers</td>
<td>E</td>
<td>1.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Child care life</td>
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<tr>
<td>3;2-4;0</td>
<td>Family</td>
<td>Daily routine</td>
<td>Mother, Father, Auntie, Grandmother, Grandfather</td>
<td>M, E</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td>&amp; Child care centre</td>
<td>English TV, storytelling, chatting, other activities</td>
<td>Teachers &amp; peers</td>
<td>E</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Child care life</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

As described above, James’ parents and auntie would use both English and Mandarin with him, but in different situations and for different activities: Mandarin at home and English outside home; Mandarin for daily routine and English for book-reading, story-telling and social life.

James’ bilingual input situation represents the usual bilingual conditions for the second generation in an immigrant family where both parents natively speak a language which is a minority language in the host country (as Mandarin is in Australia). The language exposure pattern for establishing James’ early Mandarin-English bilingualism is what Vihman and McLaughlin (1982) called “an environment–bound language, with one language [Mandarin] at home and another in the community.” In De Houwer’s term (1995, 226), James’ sociolinguistic input
conditions would be called situation-bound language exposure pattern, which will be discussed further in Chapter 3.

### 3.3 Data Collection

#### 3.3.1 Types of data

The corpus consists of two main types of data: (1) audio recordings, and (2) diary records kept by noting down the child’s utterances as they occurred. The data were collected in both a Mandarin language context, when the child was being addressed in Mandarin, and in an English language context, when the child was being addressed in English, although some of the two contexts coincided in one recording session. For example, the first 20 minutes might capture the child’s conversation with an adult in a Mandarin activity while the last 10 minutes a conversation with another adult on an English-speaking outing, depending on the child’s willingness to speak. These recordings mainly followed the natural flow of the child’s daily life. For a detailed representation of the Mandarin and English contexts at each recording session, see Table 3.2.

At most recording sessions the Mandarin-English bilingual mother was present. This method has an obvious disadvantage, that is, there is no strict control over the monolingual mode which the child is in. In Grosjean’s term (1985, 1998) bilinguals’ “language mode” refers to the “state of activation of the bilingual’s languages and language processing mechanisms” (1998, 136). Modes range along a continuum from monolingual in Language A to bilingual in Language B. In each mode, each language is activated or deactivated to a degree dependent on contextual features such as the monolingual or bilingual abilities of the coparticipant(s) and the purpose, content, and situation of the discourse. Grosjean does not specify the age at which this model becomes relevant. Assuming it applies to bilingual children, to sample a bilingual child’s speech in a prototypically monolingual context, the researcher should ensure that the child’s conversational partners are monolingual and known by the child to be so. With respect to James, it would be hard to test a pure monolingual
English mode because virtually all the English speakers in the family speak Mandarin fluently, and he has heard them switch codes. But there are several recording sessions in which he interacts only with English peers or adult visitors and they will be used as control sessions. Obviously, a more balanced output could have been expected if all recording sessions had taken place in the presence of only one interlocutor, with the one week a Mandarin speaker and the other week an English speaker for instance. However, one factor worth noticing is the grandmother lives in the family and she speaks only Mandarin and understands no English. As Clyne (1991, 114) emphasizes, grandparents exert a great emphasis in an immigrant family to maintain the home language. Many of the recording sessions comprise Mandarin conversation between James and his grandmother in which James operates in an entirely monolingual mode in Mandarin.

The present study shares the same view as De Houwer (1990, 77): in deciding on the data collection method, a choice was made in favour of naturalness and the risk was taken that the data might be abundant for one language (Mandarin) and rather scarce for the other (English).

### 3.3.1.1 *The audio recordings*

The corpus comprises 82 recordings (three being video) from when the child was 1;7 years old until he was 4;6. However, regular recordings in both language contexts were made from the age of 2;0 until 4;6. During this period, recordings were made at least once a fortnight, sometimes twice or more, with the child being addressed in Mandarin, mostly by the mother or the Mandarin-speaking grandmother (who spoke no English), and later with the child being addressed in English, mostly by the father (who spoke mainly English to the child when helping him to understand things) or the mother (who spoke English to the child when telling a story). The recordings lasted about 20 to 30 minutes on average except the first six sessions from 1;7 to 2;0, which last 15 minutes per recording due to the child’s reluctance to speak. It is worth noting that the informant James was not a verbally expressive child, so most of the time he preferred to observe and do things rather than speak. It appears that he tended to wait until he could accurately produce target segments. During the
recording time, he tends to be quiet so it is no surprise that the corpus of child speech in some of the recordings is quite limited.

The equipment used to make audio recordings included an AIWA pocket cassette recorder with a directional microphone with good quality. As the recordings were made either by the mother, or the grandmother, there was no external observer whose presence might have affected the child’s linguistic or other behavior. The cassette recorder was always left on the desk of the room where the recordings were made and even when the recordings were not being made. It presumably had the same effect on the child as the other furniture in the room. It would not have affected the child’s linguistic performance.

The language spoken by the adult interlocuter to the child was taken to define the language context of each recording, so the recordings made with the English-speaking interlocutor were labeled the ‘English-context’ recordings, and those made with the Mandarin-speaking interlocuter were labeled the ‘Mandarin-context’ recordings.

The main activities during the recording sessions were James playing with his toys, looking at his books with the interlocutor(s), story-telling, outings, shopping, visiting friends, playing with other children or his younger sister, playing at the English child care centre and his other daily routines.

Of the 82 recordings made, those used for the analyses reported in this dissertation are essentially 65 sessions. These are listed in Table 3.2, with the age of the child (years;months;days), date of each recording, and the language context in an abbreviated form (M stands for Mandarin, E for English). The child’s MLUw in Mandarin, English and Mixed utterances for each recording session are also presented in Table 3.2.
<table>
<thead>
<tr>
<th>Recording Session</th>
<th>Date</th>
<th>Age</th>
<th>MLU;M</th>
<th>MLU;E</th>
<th>MLU;mix</th>
<th>Language(s) used</th>
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</thead>
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<td>M;E</td>
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<td>1.36</td>
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<td>M</td>
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<td>M;E</td>
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<td></td>
<td>M</td>
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<td>M;E</td>
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<td>2.70</td>
<td>5.00</td>
<td>M;E;Mix</td>
</tr>
<tr>
<td>47</td>
<td>14-06-97</td>
<td>3;6;02</td>
<td>6.40</td>
<td>1.83</td>
<td>4.00</td>
<td>M;E;Mix</td>
</tr>
</tbody>
</table>
The total corpus in Table 3.2 contains 2048 identifiable utterances, of these 39 are mixed utterances. The latter are identified as the use of elements (phonological, lexical, morphosyntactic) from two or more languages in the same utterance or stretch of conversation – intra- and inter-utterance mixing respectively (Genesee, 2003, 213). When we have a close look at these mixed utterances in the context, we find that 13 of them are not real mixed utterances, they are translation pairs, in which the child tries to translate either a Mandarin term into an English one or vice versa, e.g. hand ji4 shi4 shou3/ “Hand is Hand” (2;5;17) when he explained to his father the English word “hand” in the Mandarin context. Thus, these 13 pairs of translation should be discounted in the calculation of MLUmix. However, the above table did not discount this factor; the low incidence of mixed utterances at younger ages combined with the over-estimation of mixed utterances contributes to the high value of MLU in mixed utterances. Only 1.2% of instances of mixed utterances occurred in the entire corpus.

3.3.1.2 The diary records

Diary records were kept by the mother in Mandarin as well as in English. The grandmother jotted down diary-entries in Mandarin only. These diary notes began when the child was about six months old and continued until he was six years old.
These records were based on observations made when either the mother or the grandmother was with the child. As the mother worked part-time, the mother’s records were often made during weekday playtime or bedtime when the child went to sleep while grandmother’s records contained more free activities on a daily basis. The requirements for note-taking in the diary follow Lanza’s advice (1997, 94) and the information sheet in Appendix VII (1997, 356).

When the child was between six months and 1;7 years old, sporadic records were kept noting developments that were both physical and language related.

From age 1;7, records of the child’s utterances were kept daily. At first it was possible to keep an almost exhaustive list of the child’s utterances, but this became increasingly more difficult later as his utterances became more frequent. When this was the case, priority was given to noting down new utterances. The original entry was handwritten in phonetic transcription as they occurred (except that the grandma used sound-resembling character to jot down notes). It was considered important to use phonetic transcription to minimize the possible charge that the mother might overestimate the words that the child could produce. The phonetic transcription as well as the context in which the sounds were produced allowed the mother considerable confidence in identifying these sound units.

### 3.3.2 Transcription

All the 82 recording sessions of speech data were transcribed by a bilingual research assistant, who happened to be the subject’s aunt and who was familiar with the child’s speech patterns. The transcription contains both linguistic and nonlinguistic interactions as well as the relevant contexts.

The transcriptions approximate standard orthography, without, however, adding morphemes, which are not yet present in the child’s speech. For the Mandarin
transcriptions, the Romanized International Phonetic System (Pinyin) is adopted with four tones being converted to four numbers. However, modification was made to represent the child’s actual productions as far as possible. Then CONC was used to process the data. In cases where the utterance of the child was ambiguous or deviated from adult pronunciation, a phonetic transcription offering possible interpretations has been given. If unintelligible utterances occur, an XX marker is given. All intelligible utterances of the child and of the adult have been transcribed, including those of other persons present, e.g. the children’s peers or younger sister. The situational setting and the nonverbal communication have also been rendered in the transcriptions whenever such contextual features might be relevant for the interpretation of the child’s utterance. Appendix I presents the conventions for transcription.

Once a transcript was completed, it was double-checked by the child’s mother who is very familiar with different interpretations of the child’s utterances.

3.3.3 Data interpretation

Researchers accustomed to child language data would agree that working up a transcript is a time-consuming and demanding process, which requires decisions at many levels. Since Chinese Mandarin is a phonetically distinctive language from English, it is relatively easier to differentiate these two languages in a child’s production of them than between two phonetically similar languages. The basic criteria used in my analyses for interpreting the forms (including formulaic forms) in the child language samples followed Lanza’ invention with a slight change (1997, 105-106):

1. Phonetic similarity with forms in the adult lexicon;
2. Phonetic similarity with forms in the monolingual children’s lexicon (for Mandarin see Li, 1995; Chao, 1951/1976; for English see Gleitman & Landau, 1994; Fletcher, 1985) if the first criterion fails;
3. Recurrent usage of an idiosyncratic form with a given meaning in cases where the first and the second criteria fail; and
4. Confirmation by the family members that a given form had a given meaning, either through a diary entry or in recorded dialogues.

Utterances which could not meet these criteria were transcribed as ‘unintelligible’ (X). Unintelligible utterances are not considered in the analyses of the child’s language samples; however, utterances containing phonological extensions were included, e.g. *one more-de/ “another one-NomMarker”, li li tangtang-de/ “one Classifier lolly-NomMarker”. Moreover, the factor of parents’ ‘negotiation of meaning’ with the child (Lanza, 1997, 104) has been taken into consideration for interpretation of the child’s meaning of a form or formulaic forms.

Example: session 36: An interaction between grandma (G) and James (A) talking about a mess (the following “This is what you did” refers to the mess of mashed biscuits)

G zhe4 shi4 ni3 gao3 de ba? (this is what *you* did?)

A en (yes)

G ni3 shuo1 zhe4 shi4 ni3 gao3 de (you say this is *you* did

/ “You say this is what

you did”)

A Ni3 gao3 de (you did)

G Shuo1 “wo3 gao3 de” (say “I did”)

A Po2 gao3 de (Grandma did)

In this conversation, grandma tried in vain to let James use the correct form of pronominal self-reference, although the child only partly understands what his grandmother was referring to.
With the above criteria as guidelines, interpretations and decisions can be made for almost all of the data.

3.3.4 Computer analysis and coding procedure

The transcriptions have been entered into a computer by a common word processing software program, using the Summer Institute of Linguistics’ software CONC to establish a database. The analysis was aided by the use of concordancing software, CONC 1.76 which was developed by SIL and is available as free ware on line. CONC was used to order the productions alphabetically for checking the distribution of morphemes and their context.

3.4 Characteristics of the Database

3.4.1 Units of analysis: MLU

De Houwer (1990, 14, 87) and Lanza (1997, 127) have discussed the usefulness of MLU counts, especially when languages other than English are involved.

MLU or Mean Length of Utterance measure is one aspect of quantitative information which was developed by Brown for English (1973) and has had a great impact in first language acquisition research. Brown (1973) found that age is not a good predictor of a child’s level of language development. Instead, he argued, an adequate measuring index that allows children to be matched to each other in stage of language development is the combined use of an MLU and upper bound (UB) measure. Roughly, MLU is the average number of morphemes per utterance within a transcript (for the exact rules for computing MLU, see Brown: 54), and UB is the number of morphemes in the longest utterance in a transcript (again, length is expressed in number of morphemes). MLU has been used as a basic index of a child’s grammatical development, despite the fact that it neither captures the different semantic combinations within the utterance nor resolves the question as to whether length of utterance can be equated with linguistic complexity. However, as
Pan (1994, 32) states, MLU “is nearly always one of the basic measures included in a child’s language profile”.

There has been much debate on the general validity of MLU as an adequate tool for measuring children’s language capabilities (De Houwer, 1990; Köppe, 1994; Lanza, 1997). The problem of finding an alternative instrument that could serve as an appropriate tool, however, is both one of comparative and contrastive linguistics, and of child language research in general, and unfortunately we are far from developing such an appropriate alternative instrument (see also Wells 1985, 125). MLU in this study is used in combination with qualitative analyses and serves as a possible measure of the developmental level reached by the child. Further, it enables one to establish an approximate means to compare children’s linguistic achievements at given points.

3.4.2 Problems of measurement

MLU counts for James are presented in this thesis in order to obtain at least a rudimentary basis for comparison with other children acquiring Mandarin or English.

De Houwer (1990: 14) reminded us that one cannot, without extensive adaptation, apply MLU to other languages than English (see also Crystal, 1974). In this thesis, mean length of utterance was calculated with certain modifications to R. Brown’s (1973) guidelines. Utterances with lexical and grammatical morphemes were counted; however, utterances containing elements that could belong to either language were excluded unless they also contained language-specific material. In the latter case, the entire utterance was considered to be in that particular language. An expression of a formulaic character was analysed as one unit, e.g. thank-you, oh-dear, oops-oh-Daisy. Following the practice of De Houwer (1990) and Lanza (1997), I have done away with the requirement of eliminating the first page or the first fifty utterances of the transcripts since the child is already familiar with interlocutors, parents and relatives.
The child’s MLU values for each session were calculated separately according to the language used and the context of that language use. Hence each utterance was classified as to whether it was a Mandarin, English, or Mixed utterance. Moreover, the MLUs for each sample were computed according to the context of the interlocutor and the activity. An attempt was made to sample the child’s speech in a book-reading activity and in free play conversation. Lanza (1997: 128) found that MLU is sensitive to these contexts for language use, with free play being more conducive to longer utterances, with some exceptions.

Since the MLU count for the child is differentiated according to utterance type, it was not always possible to calculate the MLU on the basis of 100 utterances. Therefore I have chosen to do as in Schlyter (1990a) and Lanza (1997), and include MLU computed with fewer than 100 utterances. In Schlyter’s work (the DUFDE project), this base number ranged from 10 to 100. I have included the entire range from 1 to 100. One may reasonably argue that an MLU of, say, only one utterance for a sample is unreliable and hence should be discarded. I agree with Lanza’s (1997, 128) argument: this nevertheless indicates that the child only used one utterance in that language, and whether that utterance was a complex or simple utterance. The rationale for including the utterance, then, is that even the use of one utterance in the ‘other’ language in an interaction and the length of that utterance indicate something about the child’s willingness or reluctance to use that language given that the opportunity of using that language arises. Inclusion of this sort will be of relevance for the analysis to be performed on the children’s MLU data. For this reason, I have included the entire range, as opposed to excluding those under the base number of 10. Following the practice of De Houwer (1990), Döpke (1992b) and Lanza (1997), I have also included the MLU for mixed utterances.

The criteria employed for calculating MLU will also determine the values reached. Schlyter states, for example, that if the child produced separate pronouns, each pronoun was awarded two points, with no form being given more than two points. In my calculations, I have assigned only one point to each pronoun although the child may have developed an extensive pronominal system. Hence the values displayed in the MLU counts may be relatively conservative. However, the same criteria have
been applied across the different dimensions for the child. Although some sessions contain fewer utterances, which form the base for the computation of the MLU, a comparison across utterance type and interlocutor reveals some interesting patterns.

The MLUw (MLU in words) demonstrates that the pattern of development in James’ two languages reflects quite large differences between his language use of each of his languages, with the child using many multclause utterances in Mandarin and exclusively single word utterances in English at the same age, for instance. We take MLUw as the most objective indicator of a child’s linguistic development in each language, although it is not without its problems. The calculation of MLUw depends on decisions regarding what constitutes a word - a problem, which has not been resolved, either in general or with regard to Mandarin Chinese in particular. Our MLUw calculations are based on the word divisions as made in the transcripts, which are in turn modeled on Matthews and Yip (1994). As Döpke (1998, 564) observes, MLU is useful for within-language comparisons but may not be directly comparable across languages, especially those of different morphological types. What Yip and Mathew have noted (2000, 198) in their Cantonese and English data, I found the similar situation in James’ Mandarin and English: Mandarin and child English can both be treated as predominantly isolating languages, since in young children’s English inflectional morphology is not yet in place. Further, MLU differentials between a bilingual’s two languages can be used in a relative, rather than an absolute sense, e.g., to show changes in patterns of use over time. Moreover, Huang (1999) compared the MLUm and MLUw of the English data and showed that the two methods of calculation yielded essentially the same pattern of development. Cheung (1998) found that there was a significant correlation between MLU in word and MLU in syllable during the acquisition by Chinese-speaking children.

With these considerations in mind, let us consider Figure 3.1 which shows the development of MLUw in James’ two languages.
Figure 3.1 James’ MLU in Mandarin, English and Mix: three-month interval averages

James MLU: Mandarin 1;07-4;0 (3 month intervals)

Age

MLU

James MLU: English 1;07-4;0 (3 month intervals)

[35 out of 66 sessions presented English utterances]
James MLU: mixed utterances 1;07-4;0 (3 month intervals)
[only 19 out of 66 sessions presented mixed utterances]
Figure 3.1 displays mean length of utterance in word counts of the bilingual subject in Mandarin, English and mixed utterances from 1;7;0 to 4;0;0. The mixed utterances are not part of any particular language. The number of mixed utterances is included in this table only because it adds to a complete picture of the informant’s syntactic development (e.g. in Mandarin contexts: *ba4ba naughty* / “Daddy naughty” (2;2); *ba4ba weewee* / “Daddy piss” (2;6); *qu4 Town-Hall* / “go to Town Hall” (3;0;01); in an English context: *en car* / “yes car” (3;1;12)). We will not discuss these any further, because of their low incidence (26 tokens out of the entire corpus) and also because by their very nature, they do not relate to the main issue of pronominal development, as they cannot function as a basis for investigation of the extent to which each of the child’s languages is following a target-language-like developmental path or not (De Houwer, 1998, 256). Tables 3.3 and 3.4 provides information on James’ MLU in words for Mandarin and English at different ages (in year;month;day format). It appears that James’ Mandarin developed faster than his English, especially in the period 1;7 to 3;4. At age 3;3;03, his Mandarin MLU was 3.70 while his English MLU was only 1.54. After age 3;4 James’ English MLU increased significantly. By 4;0;0, the gap between the MLU figures of both languages had narrowed. His Mandarin MLU (not shown in Table 3.3) was 5.49 while his English MLU was 3.99. After this transition period, the diary data show that James’ English development accelerated. The later data show that his two languages became balanced when he reached 5;0.

Indeed, whereas his development in Mandarin began around the age of 1;7, it was not until the age of 3;4 (when he began to attend childcare fulltime) that his English started to develop rapidly. From then onwards, his production of English in English contexts was more frequent than his production in Mandarin.

Tables 3.3 and 3.4 present James’ MLUw in Mandarin and English within the range of Brown’s Stages (1973).
Table 3.3 James’ MLUw in Mandarin within the range of Brown’s Stages

<table>
<thead>
<tr>
<th>Stage</th>
<th>MLUw</th>
<th>Age</th>
<th>Brown Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1.54 – 1.65</td>
<td>1;7 – 2;2</td>
<td>1.75</td>
</tr>
<tr>
<td>II</td>
<td>2.31</td>
<td>2;6;02</td>
<td>2.25</td>
</tr>
<tr>
<td>III</td>
<td>2.88</td>
<td>2;8</td>
<td>2.75</td>
</tr>
<tr>
<td>IV</td>
<td>3.70</td>
<td>3;3;03</td>
<td>3.50</td>
</tr>
<tr>
<td>V</td>
<td>4.0</td>
<td>3;5</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Table 3.4 James’ MLUw in English within the range of Brown’s Stages

<table>
<thead>
<tr>
<th>Stage</th>
<th>MLUw</th>
<th>Age</th>
<th>Brown Stage</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>1.0 – 1.54</td>
<td>1;7 – 3;3;03</td>
<td>1.75</td>
</tr>
<tr>
<td>II</td>
<td>2.0</td>
<td>3;6;01</td>
<td>2.25</td>
</tr>
<tr>
<td>III</td>
<td>2.89</td>
<td>3;9;27</td>
<td>2.75</td>
</tr>
<tr>
<td>IV</td>
<td>3.31</td>
<td>3;10;22</td>
<td>3.50</td>
</tr>
<tr>
<td>V</td>
<td>4.1</td>
<td>4;1;05</td>
<td>4.0</td>
</tr>
</tbody>
</table>

Despite the context-based language input, the quantity of input from the two languages is by no means balanced. We have estimated that James was exposed to Mandarin for approximately two thirds of the first three years, whereas English predominated in the remaining fourth year. Given this unequal pattern of exposure, it is hardly surprising to see that James’ development in each of his two languages proceeded at a different pace, particularly at the beginning of my study. On the whole, one might say that James’ linguistic development falls within normal limits. In general terms, and for both his languages, James is seen to move from Stage I to Stage V, although there are some variations in his development.

3.5 Concluding Remarks

The naturalness and authenticity of the data were presumably enhanced by the fact that there was no external observer present at the recordings made in and outside the home. The recordings were made in two language contexts, although in one session. In addition, the recordings were made relatively frequently: once or twice per fortnight. Several studies use recordings made less frequently, e.g. once per month,
but frequent recordings sometimes made it possible to document changes that might otherwise have been missed. The daily diary also helped record changes as they occurred. As the diary was kept by the parent-investigator together with a grandparent, it could also be used in conjunction with the recordings in the analyses. In several studies where the investigator is not the parent, information gleaned from parents may be variable in quality and detail. In this study, the range and quantity of data collected make it possible to perform a number of separate analyses at different linguistic levels. A syntactic aspect of the child’s differentiation of two language systems is the focus of chapter 4; the transition from a nominal reference to a pronominal one is explored in chapter 5; a detailed analysis of changes in the pronominal development in production at different linguistic levels are reported in chapter 6. Related coding criteria for the data analyses are also discussed in each of these chapters.

The data collection cannot claim to capture every possible form in a child’s repertoire at any given time. No series of fortnightly half hour sessions could hope to do this. When the material is examined periodically, however, a clear shift can be seen in the characteristic pattern of the child’s pronominal system, and differences between the child’s systems also appear.
4 Early syntactic development in Mandarin and English

4.1 Introduction

The constraints on the use of pronouns are linked to the child’s development towards the respective target language grammars. Berman and Weissenborn (1991, 12) specifically acknowledge the interest of a debate on subject realization from a cross-linguistic perspective: “The question of when and how children acquire the constraints on the use of pronoun subjects in a particular target language constitutes an important testing ground for cross-linguistic comparison of theories of grammar and of grammatical development.”

Hence, it appears that subject realisation in English and Mandarin by a bilingual child is a good testing ground to assess the separate development hypothesis, as it fulfils the requirement for evidence on morphosyntactic language separation mentioned in Chapter 2. In this chapter, the issue of subject realisation and word order patterns will be addressed in the context of the general syntactic development of the bilingual child (James). Contextualising the study of subject realisation within general syntactic development is an approach recommended by Genesee (2000, 170): “this [contextualisation] has not always been, and is not always, the case, but is highly desirable if we are to provide truly representative accounts of bilingual children’s developing systems”. In the light of this suggestion, the present chapter sets out a comprehensive account of all relevant subject realisation data in a bilingual corpus in the context of the child’s overall language development. In Mandarin, James’ syntactic development will be examined for the period from 1;7 to 2;6. During this time his Mandarin multi-word constructions become firmly established. His English syntactic corpus will cover the whole period of investigation, from 1;7 to 4;0, since his English development lags behind his Mandarin development and takes a different approach. Looking at a longer period of development in English allows
us to see the increasing complexity of his multi-word constructions, across both languages.

In all parts of the analysis, only utterances that were fully and legibly transcribed are taken into account. In addition, only utterances with more than one constituent are analysed, unless the utterance contains only a verb (since grammatical Mandarin sentences can comprise just a verb, with null subject and object). Where possible, comparisons will be made with reports on the language production of monolingual children.

In order to analyse James’ general syntactic development, the progression from single words to multi-word utterances is analysed for both his languages. Words are identified using the criteria proposed by Vihman and McCune (1994), which are briefly summarised below:

- Criteria based on context: vocalisations will be identified as words when their meanings are easily identified in contexts or by the mother, or when they are used by the child more than once with similar phonological shapes across different uses. An imitative response to a verbal stimulus is not considered as a word.

- Criteria based on vocalisation shape: vocalizations will be identified as words when they match more than two segments of the adult form, or when the prosody (in the present study in Mandarin, the tone) of the vocalizations matches the adult target.

- Criteria based on relation to other vocalisations: vocalisations will be recognized as words when vocalisations are instances of imitation produced with apparent understanding, when all instances of vocalizations share the same phonological shape, or when all uses of vocalizations occur in contexts which plausibly suggest the same word.

Table 4.1 provides a word summary for a sample of six transcriptions evenly distributed at one-month intervals over the period 1;7 to 2;0. This summary includes information on the context of the recording (Mandarin or English, depending on the
child’s language context) and the number of types and tokens used by James in Mandarin, English and Mixed utterances (the last named are referred to as “Mix” in Table 4.1). Mixed utterances involve the use of elements (phonological, lexical, morphosyntactic) from two or more languages in the same utterance or stretch of conversation – intra- and inter-utterance mixing, respectively (Genesee, 2003, 213). These utterances are not composed exclusively of one particular language. The table also provides information on James’ MLU in words (a modification from Brown, 1973), again for each of these three utterance types (Mandarin, English, Mixed). The table also charts James’ age in years/months. On the whole, one might say that James’ rate of progress in linguistic development falls within a normal range. In Mandarin, James moves from early stage I to early stage II, while in English, he is at stage I (Brown, 1973), although there are some variations in his development. Table 4.1 shows that James’ active command of English clearly lags behind that exhibited for Mandarin in his early language production.

Table 4.1 Type and token word summary for James’ syntactic development (1;7-2;0)

<table>
<thead>
<tr>
<th>Recording Session</th>
<th>Date</th>
<th>Age</th>
<th>MLU; M</th>
<th>MLU; E</th>
<th>MLU; Mix</th>
<th>N.of tokens M</th>
<th>N. tokens E</th>
<th>N. tokens Mix</th>
<th>Total Tokens</th>
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<td>1;07;0</td>
<td>1.54</td>
<td>1.00</td>
<td>20</td>
<td>1</td>
<td>1</td>
<td>21</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>15-08-95</td>
<td>1;08;02</td>
<td>1.67</td>
<td>1.00</td>
<td>30</td>
<td>1</td>
<td>1</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>15-09-95</td>
<td>1;09;02</td>
<td>1.36</td>
<td></td>
<td>15</td>
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<td></td>
<td>17</td>
<td></td>
<td>1</td>
<td>17</td>
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<th>N. types E</th>
<th>N. types Mix</th>
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<th>Utterance E</th>
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<td>1</td>
<td>M;E</td>
<td></td>
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<td>15-08-95</td>
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<td>1</td>
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<td>18</td>
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<td>1</td>
<td>M;E</td>
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<td>15-09-95</td>
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<td>12</td>
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<td>11</td>
<td>M</td>
<td>M</td>
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<tr>
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<td>13-10-95</td>
<td>1;10;0</td>
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<td>1;11;03</td>
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<td>25</td>
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</tbody>
</table>
It should be noted that the range of words recorded and transcribed does not guarantee opportunities for the child to attempt all the features. Therefore, the mere non-existence of a feature in children’s production does not mean that the child cannot produce it. This need to be taken into consideration when interpreting the results. The present chapter will try to address the question whether for this bilingual child, separate linguistic systems develop in the area of syntax, which deals with “the way in which words are combined to form sentences” (Quirk, Greenbaum, Leech and Svartvik, 1985, 43). We shall mainly restrict ourselves to word order to see the nature and extent of James’ word order systems in his Mandarin and English. It will be clear that James will not be able to evolve either adult system simply by transferring knowledge that he may have from the one language to the other. If it is found that James uses Mandarin and English word orders mainly within their respective linguistic contexts, and if his functional use of subject realization is mostly language specific, then we shall have gained more evidence for the hypothesis “that the syntactic development of a bilingual child’s two languages involves two fairly separate processes that are by logical implication strongly guided by the linguistic input that the child is exposed to, rather than primarily by the existence of universal cognitive or linguistic categories.” (De Houwer, 1990, 159).

4.2 *Syntactic coding*

Syntactic analyses in the literature differ widely in nature; the terminology used is often quite individualistic and not necessarily shared by the community of linguists as a whole, if for instance we compare the works of Matthews (1982), Hudson (1984), Halliday (1985), Chomsky (1986), and Bresnan (2001). For the purpose of the present study, the coding system used follows De Houwer (1990, 238): “it was seen as paramount that …[it] should capture the variations in the formal shapes of child utterances while not limiting ensuing analyses too much already from the start so a fairly neutral descriptive tool had to be devised, on the basis of which any explanatory theories could be implemented at a later stage”.

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With the above requirement in mind, it was decided that the coding system used would be mainly based on the European structuralist tradition. De Houwer (1990) and Lanza (1997) also employed this system in their study of bilingual children, which allows us to make some comparisons with De Houwer’s and Lanza’s findings.

More specifically, the work of Quirk, Greenbaum, Leech and Svartvik (1985) was adopted as the general framework for syntactic coding. The study by Quirk et al. (1985) was intended solely as a description of the English language, so a major problem we face is how to analyse the syntactic units of Mandarin in a comparable way. It proves possible to apply to Mandarin many of the general insights in Quirk et al. (1985). For example, the term “subject” in English can be applied to a subject in Mandarin as well. It is mainly when we encounter forms such as the grammatical and semantic particles in Mandarin that the English terminology cannot be employed or does not adequately capture the syntactic characteristics involved.

The terminology and definitions of Quirk et al. (1985) were taken as a starting point in setting up the syntactic coding system. For each English term on the constituent level, we then looked for a Mandarin term that would most closely express the content of the English term. In coding the Mandarin corpus we were led by the Mandarin rather than by the English terminology. For example, Mandarin stative verbs are often equivalent to English adjectives but also function as full verbs. The Mandarin terminology follows Chao (1973) and Li & Thompson (1981). The former describes Mandarin in traditional grammatical terms and the latter in the terms of functional grammar. Although these two books do not belong to the structuralist tradition, they were chosen as the basis for the Mandarin syntactic analysis as they are rather eclectic in nature and emphasize a functional approach to language.

### 4.3 Syntactic contrast between Mandarin and English

#### 4.3.1 SVO with null subjects and objects in Mandarin and English
It is well known that languages differ as to whether they permit phonologically null subjects and objects in finite clauses. Thus languages such as English and French generally prohibit null subjects and objects, languages like Spanish and Italian allow null subjects but not null objects, and languages like Chinese and European Portuguese permit both null subjects and null objects (cf. Cole, 1987). Various attempts have been made to explain the conditions that enable one to identify thematic null arguments (identification conditions) (cf. the review by Jaeggli and Safir, 1989).

In citation-form declarative sentences, Mandarin follows SVO word order. Ordinarily, the noun phrase before the verb is the agent or the experiencer and the noun phrase after the verb is the patient or affected participant, much as in English. However, in natural discourse, Mandarin makes extensive use of ‘topic-comment’ constructions, which de-emphasize grammatical relations. In English, there are “purely syntactic relations contracted between a noun phrase and its predicate” (Comrie, 1989, 65) which are reflected in concepts of grammatical relations such as ‘subject’ and ‘object’. Structurally, Mandarin may emphasize verbs more than English by the very fact that Mandarin is a pro-drop language and English is not. In a pro-drop language, sentence subjects are often optional and thus are frequently omitted. Verbs, on the other hand, are rarely omitted in any pro-drop language and are certainly no more likely to be omitted in Mandarin than in English. In other words, pro-drop languages may emphasize verbs more than non-pro-drop languages simply because fewer noun phrases, and presumably fewer common nouns, are required for communication in these languages. Moreover, dropping the subject of a sentence in a SVO language (English and Mandarin are both SVO languages) also means that the verb is more likely to occupy the salient sentence-initial position in a null-subject utterance, whereas a noun or a pronoun is more likely to occupy this position in a full subject utterance (Tardif, Shatz & Naigles, 1997, 538). Mandarin shares the pro-drop feature with pro-drop Romance languages, but it is not as flexible with respect to word order. Overall, then, null subject languages should have a higher proportion of verbs in any linguistic sample and have verbs appearing in sentence-initial position more frequently than non-null subject languages. Moreover, as discussed by Huang (1989) and others (Hyams, 1987; Wang, Lillo-
Martin, Best & Levitt, 1992), Mandarin (but not English) is frequently a ‘null object’ language as well, a fact that further privileges the prominence of verbs in Mandarin.

Since Mandarin allows frequent ellipsis of objects as well as subjects, it might also be hypothesized to include many verb-initial and verb-final utterances. English, in contrast, may have more nominals at the beginnings and ends of utterances because it allows little variation in word order and minimal dropping of nominal elements from the canonical SVO sentence structure. Therefore, pronoun occurrence in Mandarin would be expected to be much less frequent than in English.

However, even though Mandarin is a pro-drop language, the structural features that contribute to, or license null subjects in Mandarin are very different from those in Romance languages such as Italian, Spanish, and Catalan. Catalan, for example, is a null-subject language with very rich and completely uniform agreement morphology, whereas Mandarin displays a complete lack of agreement morphology to license null subjects (Huang, 1989; Jaeggli & Safir, 1989). According to the Uniformity Principle (Huang, 1989) null subjects are not licensed in English because the agreement morphology is relative sparse (but not completely lacking) and is therefore not uniform. The fact that certain Romance languages and Mandarin both allow null subjects despite being on opposite poles of the morphological agreement spectrum has led Hyams (1987) to distinguish between two types of null subject languages: those that have their origin in the sentence-level AGR constituent versus null subjects that are bound to the discourse-level TOPIC. Mandarin belongs to the latter type.

For more detailed account of typological differences between Mandarin and English, see Appendix II.

4.3.2 Issues and Significance

The question whether the early grammars of children resemble pro-drop languages like Italian or Chinese has been discussed in the context of parameter setting. Hyams
(1986) argues that children’s early grammar shows pro-drop properties. According to this idea, the early language of English children should be just like that of Italian children. It is only at a later stage, when English children attune to detailed characteristics of English syntax (such as the presence of expletive subjects at 3;4) that they recognize the prohibition against empty pronoun subjects in tensed clauses.

More recent work on the acquisition of the so-called null subject parameter (Bloom, 1991; Valian, 1991; Rizzi, 1994) has questioned previous assumptions that children learning English might begin with a grammar in which subjectless sentences are grammatical, thus disregarding a basic property of the English input, and only later correct this analysis. According to this more recent work, initial grammars do not differ substantially from adult grammars. Significant differences exist between the proportion of obligatory overt subjects used by children acquiring English compared with children acquiring Italian, Portuguese and Spanish. There is evidence pointing to a different explanation of early subject realisation in language development, namely that during the first stages of acquisition there is no unmarked, default value for the parameter, and hence there is no stage during which children would operate on the basis of an incorrect hypothesis. If these ideas are right, we should expect children to show a type of behaviour similar to that of adults as regards subject realization in their syntactic constructions.

Serratrice (2002) has presented a study on one English-Italian bilingual child (1;10-3;1) in which challenges the hypothesis that the consistent realization of overt subjects in English is caused by the emergence of finite verbal morphology in the child’s grammar. The argument is made for the emergence of subjects as an independent grammatical property of English, namely the marking of person deixis. Throughout the period of observation there is a significant proportion of overt subjects in the child’s English utterances appearing both with finite and non-finite verb forms. Production of subjects stabilizes at 90% of obligatory contexts when no morphological correlates of finiteness have been acquired yet. While subjects are produced at significantly lower rates in Italian, the consolidation of a number of inflected forms marking person agreement are observed. The researcher concludes that the emergence of overt subjects in English on the one hand, and of subject-verb
agreement in Italian on the other suggest that this bilingual child is grammaticalizing the all-important function of person deixis in language-specific ways: the same function is expressed by different forms in the child’s two languages. It is claimed that the child is using language-specific strategies to mark person deixis and that he focuses on language-appropriate cues in the two languages: subjects in English and verbal agreement in Italian.

It is of theoretical interest to find out whether the subjectless sentences of early Mandarin/Chinese grammar are the same as those of Italian children and English children. Chinese Mandarin is of particular interest in the comparative study of the pro-drop phenomenon, as the empty categories in the language are not identified by verb inflections, but by discourse topics and structural configuration. Unlike English or Italian, Chinese allows null objects. These are argued to be variables rather than pronouns (as in the analysis of Huang, 1984, for example).

### 4.4 Results

#### 4.4.1 Syntactic development in Mandarin

*The nature of James’ early two-word combinations (between 1;7 and 2;0)*

The onset of two-word combinations has generally been situated around the age of 1;6. These early combinations characterize a period that usually lasts until 2;0, when three-word combinations generally start to appear alongside other speech developments (Ingram, 1989; Dore, Franklin, Miller and Ramer, 1976). In James’ case, this general course of development was observed. His first two-word combinations in Mandarin emerged at 1;7, while the first ones in English did so at 2;3;26, and additional elements in English made their appearance towards the age of 3;0. In general, the criteria used here to distinguish two-word utterances from “successive single-word utterances” (Bloom, 1973) have been the presence of a
single intonation contour and the absence of a detectable pause between the two meaning-related elements (see Bloom, 1973, 41; Peters, 1986, 316).

The appearance of James’ first two-word combination did not lead to rapid syntactic growth. Rather, the appearance of multi-word utterances went through a period of slow growth during which James very gradually developed the ability to use words in novel combinations. Most monolingual children appear to follow a similar rate of syntactic development (Ingram, 1989). The same phenomenon was noticed in the early syntactic development of a Catalan-English bilingual (Andreu) studied by Juan-Garau & Pérez-Vidal (2000, 179).

Throughout James’ corpus for the period 1;7 to 2;0, single-word utterances outnumber two-word ones. In English during this period, James only produced one-word utterances, as explained below. James’ only two-word utterances were in Mandarin. Table 4.2 shows James’ initial two-word combinations in Mandarin. For each combination, presented in the order of its appearance, the types and tokens are specified and an example is given to illustrate James’ usage.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Session</th>
<th>Examples</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>[IW][Adj][V] (3)</td>
<td>1</td>
<td>ao.hao3</td>
<td>well good</td>
</tr>
<tr>
<td>[IW][Neg][V] (2)</td>
<td>1</td>
<td>no. bi4 yao4. bi4 yao4.</td>
<td>no don’t want don’t want</td>
</tr>
<tr>
<td>[Nk][Prep][Nc] (3)</td>
<td>2</td>
<td>ba4ba. zai4 jia1</td>
<td>Daddy at home</td>
</tr>
<tr>
<td>[Nk][V] (2)</td>
<td>4</td>
<td>tai4tai da4-men. da4-men2.</td>
<td>old lady knock-door</td>
</tr>
<tr>
<td>[Dp][V] (2)</td>
<td>5</td>
<td>zhe4 ba1.ba1</td>
<td>this paste paste</td>
</tr>
<tr>
<td>[V][Vp] (3)</td>
<td>5</td>
<td>ba1 qi3-lai2.</td>
<td>paste up</td>
</tr>
<tr>
<td>[IW][Neg] (1)</td>
<td>6</td>
<td>en. mei2-you3.</td>
<td>all right don’t have</td>
</tr>
<tr>
<td>[Nk][Nc] (1)</td>
<td>6</td>
<td>ma1ma. yao4. yao4.</td>
<td>Mum medicine</td>
</tr>
</tbody>
</table>

* The numbers in parentheses in the Categories column indicate the number of tokens for each utterance type.

IW = Interactive word; Adj = Adjective; V = Verb; Neg = Negtive; Nk = Kinship noun; Prep = Preposition; Nc = Common noun; Dp = Demonstrative pronoun; Vp = Verb particle
James’ initial two-word combinations in Mandarin were predominantly nominals, kinship nouns, common nouns, or a pronoun (8 tokens) combined with verbs, prepositional phrase, or common nouns. These include the first demonstrative pronoun zhe4/ “this” (1;7) appearing in combination with verb ba1/ “paste” and forming the meaning: Object + Action /this paste. While the next combinations were interactive words formed either as [IW][Adj][V] (3 tokens), or as [IW][Neg][V] (2 tokens) and [IW][Neg] (only 1 token). Verb + Particles [V][Vp] (3 tokens) accounted for the rest of the combinations. Interactive words, defined by Lieven, Pine and Barnes (1992, 295) as “words with little or no referential value in the adult language whose whole meaning is derived from the interactive situation in which they occur such as greetings or conversational devices, etc.”, e.g. au/ “well” (1;7); no/ “no” (1;7); en/ “right” (1;9). This pattern has been reported in several studies of early grammars (e.g. Bloom, 1970). By far the most productive two-word combination in this initial period was that of a nominal plus a verb or prepositional phrase (7 out of 17 tokens). The next most common type is the combination of an interactive word and an adjective verb, verb, or negation (6 out of 17 tokens). These two types of combinations correspond to Mandarin adult norms in word order: SV(O) and V with null subjects and null objects. The possibility remains, however, that the child’s Mandarin constituents might be organized in a number of limited scope patterns in linear fashion at Brown’s Stage I.

Only four different verbs were used in word combinations at this stage. The intransitive verb ba1/ “paste” began to be used at 1;7, in connection with demonstrative pronoun “zhe4”/ “this”. Another intransitive verb duo3/ “hide” appeared in combination with a particle as a verb complement at 2;0;1 duo3. duo3 de/ “hide. hide up”. Verb da4-men2/ “knock” was acquired at 1;10 and used with kinship nouns as its subject, as in Tai4-tai4 da4-men/ “Old lady knock-door”, said in pointing to the picture book which James and the adult were reading. Existential verb you3/ “have” was used at 1;9 only with interactive words as topic markers to confirm the entities mentioned in the previous conversational turn. Negation + Verb bu2 yao4/ “don’t want” was first uttered at 1;8 with an English negation “no” as an introductory interactive word to express a strong rejection. Hence, no auxiliaries,
modals, or aspect markers appeared in the data. The verbs used by the child at this stage were either imperatives, declaratives, or bare verb forms.

Multi-word combinations (between 2;0 and 2;6;02)

This section describes James’ multi-word period in Mandarin during which combinations of more than two elements emerge. At age 2;0, James exhibited an average MLU (in words) of 2.25, indicating that he was in early Stage II. In the course of the following four months, his MLU had risen to 2.88, that is, Stage III. After 2;4, James’ MLU in Mandarin was never less than 2.5. At this stage, two-word utterances were only beginning to emerge in English. It is worth noting that the child’s syntactic spurt in Mandarin coincided with a vocabulary spurt in that language; Juan-Garau (1996, 165) found a similar phenomenon for a Catalan-English bilingual child. If we compare James’ MLU measures with two of Bloom, Lightbown and Hood’s (1975) subjects, Eric and Peter, we find that the syntactic spurt also started with an MLU of approximately 1.5 for these two children. Ingram (1989, 235) operationally defines the syntactic spurt “as occurring when the child either has an MLU of 1.5 or has used 100 syntactic types”.

Table 4.3 presents all types of three-word and multi-word combinations in James’ corpus, except for seven types of combinations which have been eliminated from the analysis as they only occurred once. Tokens are indicated in parentheses in each case. It must be noted that in the period 2;0 to 2;6;02, noun combinations were still very common and comprised 80% of the total utterances with two- and multi-word combinations. Nominal self-referencing terms ‘Er2er’ and ‘Auchee’ emerged and began to combine with nouns, verbs and prepositional phrases. Combinations with a kinship term expanded to include more categories such as adjectives, common nouns, adverbs, negation, and verbs. Furthermore, the combination patterns in James’ child Mandarin reflect the Mandarin adult norm, with the exception of negation. Combinations which reflect the adult norm include the [Nk][Nc] combination in which kinship terms combine with common nouns (with the omission of the obligatory possessive particle ‘de’ in the middle to express possession). This combination increased in frequency over the period 2;0 to 2;6;02. This pattern
happens to resemble corresponding productions in James’ English at the time. This is not necessarily a case of transfer, however, since Bloom’s (1991) monolingual informants also produced combinations similar to ‘Mommy sock’ to express possession. Over the period from 2;0 to 2;6;02, verbs were increasingly combined with different constituents. These constituted 75% of all combinations in this period. Almost all of the [Adv][V][Adj] combinations (where adjectives functioned as stative verbs) match the adult norm.

A noteworthy characteristic of James’ three- and multi-word combinations is that most of them build on his previous two-word types, with the incorporation of an additional element. For example, the two-word combination noun + noun was lengthened by adding an extra element, such as a verb, between the nouns. The same can be said of longer productions, which again tended to build on two- and three-word utterances, such as the deviant combination from the adult norm (noun + verb + noun), producing noun + verb + verb (the same verb) + noun coming from two structures: noun + verb and verb + noun. The number of different verbs produced by James rose from 4 to 76 in the period between 2;0 and 2;6;02. Verb particles and grammatical particles also appeared, e.g. guo4 lai2 / “come” over”, he1 guo4 le/ “ate Experience-Marker Final-Marker”. The auxiliary verb yao4/ “want” appeared, e.g. ba4ba bi4 yao4 gan1(ka4n4) xu1(shu1)/ “dad don’t want read book” to express “Dad doesn’t read books” in turn 20 of recording session 17. The latter reflects the decision to treat yao4/want as an auxiliary, which is in line with Zhao’s treatment of adult’s grammar (see Zhao 1975, 736) although it is different from Li & Thompson (see Li & Thomson 1981, 174).

In sum, we find that the differences between the two samples of the child’s Mandarin syntactic development lie in the elaboration of structural types already represented in table 4.3. Examples of these elaborations are listed in Table 4.4.
<table>
<thead>
<tr>
<th>Categories</th>
<th>Tokens</th>
<th>Session</th>
<th>Examples</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Adj]/[Nk]/[Nc]/[Adv]</td>
<td>8</td>
<td>19</td>
<td>da4 la1 jji1 tong3. hao3 qiu4</td>
<td>big dustbin. stink</td>
</tr>
<tr>
<td>[Adv]</td>
<td>5</td>
<td>12</td>
<td>tai4 gao1</td>
<td>too high</td>
</tr>
<tr>
<td>[Nc]/[Neg]/[Adj]/[V]</td>
<td>15</td>
<td>12</td>
<td>chou4 chou4 mei2 you3.</td>
<td>bad smell no</td>
</tr>
<tr>
<td>[Nc]/[Adj]/[V]</td>
<td>10</td>
<td>10</td>
<td>da4 yang2. ma1 ma1 mai3</td>
<td>Big sheep, mum buy</td>
</tr>
<tr>
<td>[Nc]/[PM]</td>
<td>5</td>
<td>12</td>
<td>du1 du1 huai4 le</td>
<td>bus broken</td>
</tr>
<tr>
<td>[V]</td>
<td>13</td>
<td>10</td>
<td>ma3. qi2 ma3</td>
<td>horse. ride-horse</td>
</tr>
<tr>
<td>[Neg]/[Adj]/[N]/[V]</td>
<td>14</td>
<td>12</td>
<td>chou4 chou4 mei2 you3.</td>
<td>no bad-smell</td>
</tr>
<tr>
<td>FinM</td>
<td>8</td>
<td>13</td>
<td>da4 yao4. da4</td>
<td>don't want</td>
</tr>
<tr>
<td>[Neg]/[V]/[Nc]</td>
<td>5</td>
<td>12</td>
<td>bi4 yao4 tu4</td>
<td>don’t want vomit</td>
</tr>
<tr>
<td>[Nk]/[Adj]/[V]</td>
<td>12</td>
<td>10</td>
<td>po2 hao3 kan.</td>
<td>grandma good-looking</td>
</tr>
<tr>
<td>[Nk]/[V]/[Vp]</td>
<td>3</td>
<td>20</td>
<td>ba4 ba yu3 qiu3 lai2</td>
<td>dad already get up</td>
</tr>
<tr>
<td>[Nk]/[V]/[Nc]/[Nk]/[Neg]</td>
<td>11</td>
<td>9</td>
<td>ma1 ma1 dua du</td>
<td>mum cassette</td>
</tr>
<tr>
<td>[Nk]/[V]/[Nk]/[IW]</td>
<td>5</td>
<td>20</td>
<td>ba4 ba yu3 hong</td>
<td>dad’s eye red</td>
</tr>
<tr>
<td>[Nc]</td>
<td>13</td>
<td>12</td>
<td>nian3 bu4 yao4</td>
<td>face don’t want</td>
</tr>
<tr>
<td>[Nk]/[V]/[Nc]</td>
<td>6</td>
<td>20</td>
<td>ba4 ba4 yao4 dian4 deng1</td>
<td>Western doll don’t have</td>
</tr>
<tr>
<td>[Nk]/[V]/[Nc]/[Neg]</td>
<td>20</td>
<td>15</td>
<td>ba4 ba4 yao4 gan1 xu1</td>
<td>dad doesn’t read book</td>
</tr>
<tr>
<td>[Nk]/[V]/[Nk]/[Nc]</td>
<td>15</td>
<td>7</td>
<td>ma1 ma1 tu4.</td>
<td>mum vomit</td>
</tr>
<tr>
<td>[Nk]/[V]/[Nk]/[Nc]</td>
<td>15</td>
<td>9</td>
<td>yue4 liang4 you3</td>
<td>moon have</td>
</tr>
<tr>
<td>[Nk]/[V]/[PM]</td>
<td>2</td>
<td>16</td>
<td>ba1 da3. po2 po bi4 da3</td>
<td>buy lolly FinM</td>
</tr>
<tr>
<td>[Nk]/[V]/[EM]/[PM]</td>
<td>6</td>
<td>15</td>
<td>ba4 ba tu4 le.</td>
<td>grandma doesn’t beat</td>
</tr>
<tr>
<td>[Nk]/[V]/[Nom]/[FinM]</td>
<td>20</td>
<td>15</td>
<td>Auuhe  te1 guo4 le.</td>
<td>Auuhe drank PM</td>
</tr>
<tr>
<td>[V]/[Nc]/[FinM]</td>
<td>13</td>
<td>Auuhe na2 de de</td>
<td>Auuhe take Nom FinM</td>
<td></td>
</tr>
<tr>
<td>[Nk]/[V]/[Nc]</td>
<td>13</td>
<td>mai3 dang2 dang</td>
<td>buy lolly FinM</td>
<td></td>
</tr>
<tr>
<td>[Nk]/[V]/[Vp]/[V]</td>
<td>3</td>
<td>15</td>
<td>ba4 ba lai2 jiu1 fang4</td>
<td>dad come to have meal</td>
</tr>
<tr>
<td>[Nk]/[V]/[V]/[Nk]</td>
<td>16</td>
<td>15</td>
<td>po2 po lai2 yi1 xia4.</td>
<td>grandma come up</td>
</tr>
<tr>
<td>[Nk]/[V]/[IV]/[Nc]</td>
<td>16</td>
<td>16</td>
<td>po2 qu4 qu4 wan2.</td>
<td>Grandma go out play</td>
</tr>
<tr>
<td>[Nq]/[Class]/[Nc]</td>
<td>5</td>
<td>13</td>
<td>ni1 li1 tang 1 tang</td>
<td>one piece of lolly</td>
</tr>
<tr>
<td>[Nsef]/[V]/[Nc]/[Nk]</td>
<td>19</td>
<td>13</td>
<td>er2 er yao4 di1</td>
<td>Sonson want lamp</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>Auuhe tu1 tu1 mei4 mei</td>
<td>Auuhe push push sister</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>po2. Auuhe you3 qian2</td>
<td>grandma.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>Auuhe push push sister</td>
<td>Auuhe have money</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>Auuhe tu1 tu1 mei4 mei</td>
<td>Sonson doesn’t want lolly</td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>er2 er bu2 yao4 tang 1 tang.</td>
<td>Auuhe sit here</td>
<td></td>
</tr>
<tr>
<td>[Nsef]/[V]/[Prep]/[Nc]</td>
<td>3</td>
<td>15</td>
<td>er2 er bu2 yao4 tang 1 tang.</td>
<td>I want to read the book</td>
</tr>
<tr>
<td>Categories</td>
<td>Tokens</td>
<td>Session</td>
<td>Examples</td>
<td>Gloss</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>--------</td>
<td>---------</td>
<td>---------------------------</td>
<td>-------------------------</td>
</tr>
<tr>
<td>[Pself][V]/[Nc]</td>
<td>5</td>
<td>9</td>
<td>ji1 ji zou2.</td>
<td>self go</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td></td>
<td>er2 er ji1 ji3 jiu3</td>
<td>Sonson self eat</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td></td>
<td>er2 er da3 zhe zheng</td>
<td>Sonson got this shot</td>
</tr>
<tr>
<td>[Ques]</td>
<td>10</td>
<td>20</td>
<td>shen2 me nan2 hai2?</td>
<td>what boy?</td>
</tr>
<tr>
<td>[V][Adj][Nc]/[Nk]/[Nself]</td>
<td>22</td>
<td>9</td>
<td>ting1 wo1 wo</td>
<td>listen to music</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td></td>
<td>yao3 mei4 mei.</td>
<td>bite sister</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td></td>
<td>huan4 da4 jiao1 bu4</td>
<td>change the band-aid</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td></td>
<td>pei2 er2 er</td>
<td>accompany Sonson</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td></td>
<td>you3 dang2 dang de</td>
<td>have lolly</td>
</tr>
<tr>
<td>[V][Nk]/[Nc] [Neg]</td>
<td>2</td>
<td>12</td>
<td>ting1 ma1 ma wowo</td>
<td>listen to mum music stop</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>mei2 you3</td>
<td></td>
</tr>
<tr>
<td>[V][Vp]/[V]</td>
<td>3</td>
<td>16</td>
<td>qu4 qu4 wan2</td>
<td>go out play</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>weewee mei2 you3</td>
<td>wee- wee no</td>
</tr>
</tbody>
</table>

* The number in the parenthesis indicate tokens for each utterance type.


In what follows, we examine the child’s syntactic patterns in his multi-word declaratives and furnish some examples which are displayed in Table 4.4, with a translation into English following the target language form. In those Mandarin utterances with null subject and null object, the gloss in the English version includes a pronoun or a noun as subject or object in brackets by convention.
Table 4.4  Types and tokens in James’ syntactic patterns in his Mandarin multi-word utterances between 2;0 and 2;6 (N = 189)*

<table>
<thead>
<tr>
<th>Syntactic Patterns</th>
<th>Tokens</th>
<th>Session</th>
<th>Examples</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>OSV</td>
<td>5</td>
<td>10</td>
<td>da4 yang2. er2er yao4.</td>
<td>Big sheep, Sonson want</td>
</tr>
<tr>
<td>ONeg/V</td>
<td>6</td>
<td>12</td>
<td>yang2 wa2wa2 mei2you3</td>
<td>Western doll don’t have/ &quot;Western doll disappeared&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
<td>bian3 bu4yao4</td>
<td>face don’t want/ &quot;don't want to wash my face&quot;</td>
</tr>
<tr>
<td>OV</td>
<td>11</td>
<td>12</td>
<td>yue4liang4 you3</td>
<td>moon have/ &quot;there is a moon&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
<td>xie2 duo1.</td>
<td>shoes off</td>
</tr>
<tr>
<td>Qm/Qw</td>
<td>3</td>
<td>14</td>
<td>mei3-- qi2-ma3</td>
<td>horse--ride-horse</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14</td>
<td>en?</td>
<td>what boy?/ &quot;what boy are you taking about?&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20</td>
<td>shen2me nan2hai2?</td>
<td>yes. grandma next take/ &quot;yes. grandma next day take me there&quot;</td>
</tr>
<tr>
<td>SAV</td>
<td>6</td>
<td>12</td>
<td>en. po2po ming2 dai4 ..</td>
<td>big dustbin very stink</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19</td>
<td>da4 la1ji1tong3. hao3 qiu4</td>
<td>Sonson big full/ &quot;I am very full&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19</td>
<td>er2er da4 bao3</td>
<td>outside not cold</td>
</tr>
<tr>
<td>SNegV</td>
<td>9</td>
<td>13</td>
<td>mei4mei bi4 wan1.</td>
<td>mum bag don't want/ &quot;take away mum's bag&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>13</td>
<td>wai4mian4 bi4 leng3</td>
<td>mum don’t work</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16</td>
<td>ma1ma bao1 bi4 yao4</td>
<td>mum don’t touch scar</td>
</tr>
<tr>
<td>SNegVx/VO</td>
<td>9</td>
<td>17</td>
<td>ma1ma bi4 yao4 ban1</td>
<td>&quot;dad {I } don't want lamp&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17</td>
<td>er2er bu2 yao4 tang1tang.</td>
<td>&quot;dad {I } don't want lamp&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17</td>
<td>ma1ma bi4 gao3 bai</td>
<td>mum don’t want lolly</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20</td>
<td>ba4ba bi4 yao4 dian4deng1</td>
<td>mum don’t want lolly</td>
</tr>
<tr>
<td>SO</td>
<td>2</td>
<td>11</td>
<td>bi1tai1. bi1tai1. po1. bi1tai1</td>
<td>Grandma. biscuit/ &quot;grandma gives me a biscuit&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20</td>
<td>ma1ma Ruying</td>
<td>mum (is called) Ruying</td>
</tr>
<tr>
<td>SV</td>
<td>43</td>
<td>7</td>
<td>ma1ma tu4.</td>
<td>mum vomit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>12</td>
<td>du1du1 hui4 le</td>
<td>bus broken/ &quot;the bus stopped&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16</td>
<td>po2 qu4 qu4 wan2.</td>
<td>grandma {take me} go out play</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18</td>
<td>Auchee yao4 kou1</td>
<td>Sonson want pinch</td>
</tr>
<tr>
<td>#</td>
<td>15</td>
<td>15</td>
<td>#ba4ba yao4</td>
<td>&quot;need give dad eat&quot;</td>
</tr>
<tr>
<td>#</td>
<td>15</td>
<td>15</td>
<td>#ba4ba he1 tang1</td>
<td>dad drink soup/ &quot;yao4 gei3 ba4ba he1 tang1&quot;</td>
</tr>
<tr>
<td>SVA/C</td>
<td>4</td>
<td>14</td>
<td>Auchee zuo4 zai4 che1 li3</td>
<td>dad eye red</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15</td>
<td>po2po lai2 yi1 xia4.</td>
<td>&quot;yao4 gei3 ba4ba he1 tang1&quot;</td>
</tr>
<tr>
<td>SV/SVO-X</td>
<td>5</td>
<td>16</td>
<td>shu1 hui4 le. yao4 bu3</td>
<td>mum buy orange juice not good</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15</td>
<td>en. po2po mei2you3. townhall</td>
<td>mum want money. railway station/ &quot;mum I want money to go to the railway station&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>19</td>
<td>ma1ma mai3 ju1shui3 bi4 hao3</td>
<td>mum beat. grandma not beat</td>
</tr>
<tr>
<td>Syntactic Patterns</td>
<td>Tokens</td>
<td>Session</td>
<td>Examples</td>
<td>Gloss</td>
</tr>
<tr>
<td>-------------------</td>
<td>--------</td>
<td>---------</td>
<td>----------</td>
<td>-------</td>
</tr>
<tr>
<td>SVO (S=kin/self)</td>
<td>23</td>
<td>13</td>
<td>Auchee</td>
<td>Auchee take one {lolly} de</td>
</tr>
<tr>
<td>#</td>
<td>16</td>
<td>13</td>
<td>po2.</td>
<td>grandma. Auchee have money</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>13</td>
<td>#po2</td>
<td>{accompany} grandma buy vegetables</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>13</td>
<td>po2po</td>
<td>grandma pull bin</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>13</td>
<td>er2er</td>
<td>Sonson want read book</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>13</td>
<td>ba4ba</td>
<td>dad called Yun</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>13</td>
<td>er2er</td>
<td>Sonson want go home</td>
</tr>
<tr>
<td>SV-VO</td>
<td>4</td>
<td>13</td>
<td>er2er</td>
<td>Sonson want, want steamed bread</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>yao4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>da4mo2</td>
<td></td>
</tr>
<tr>
<td>{S}AVO</td>
<td>1</td>
<td>13</td>
<td>hai2</td>
<td>also have grandma</td>
</tr>
<tr>
<td>{S}V{O}</td>
<td>10</td>
<td>7</td>
<td>mei2you4</td>
<td>{I} don't have {this}</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>7</td>
<td>bu4</td>
<td>{you} don't hold {me}</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>7</td>
<td>wuwo</td>
<td>{I} climb {the fence}</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>7</td>
<td>you3</td>
<td>{you} have {money}</td>
</tr>
<tr>
<td>{S}AV</td>
<td>1</td>
<td>12</td>
<td>hao3</td>
<td>{it} too hot</td>
</tr>
<tr>
<td>{S}V</td>
<td>5</td>
<td>12</td>
<td>yao4</td>
<td>{I} will vomit</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>12</td>
<td>zuo4</td>
<td>{mum} do exercise</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>12</td>
<td>guali</td>
<td>{the car} turn round</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>12</td>
<td>qu4</td>
<td>{I} want go play</td>
</tr>
<tr>
<td>{S}NegV</td>
<td>5</td>
<td>13</td>
<td>bi4</td>
<td>{it} no cold</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>13</td>
<td>mei2you3</td>
<td>{it} not much</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>13</td>
<td>bi4</td>
<td>{it} not the same</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>13</td>
<td>weewee</td>
<td>#1 {weewee no}</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>13</td>
<td>mei2you3</td>
<td>{I} no weewee</td>
</tr>
<tr>
<td>{S}NegV {O}</td>
<td>6</td>
<td>10</td>
<td>bu4</td>
<td>{I} don't want {this}</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>10</td>
<td>mei2you3</td>
<td>{I} don’t pass {a bowl}</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>10</td>
<td>zao3</td>
<td>{I} find not out {this/that}</td>
</tr>
<tr>
<td>{S}NegVO</td>
<td>6</td>
<td>12</td>
<td>bi1</td>
<td>{I} don’t want bean</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>12</td>
<td>mei2you3</td>
<td>{I} haven't pass pooh</td>
</tr>
<tr>
<td>#</td>
<td>{S}VONeg</td>
<td>1</td>
<td>12</td>
<td>#ting1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>ma1ma</td>
<td>&quot;mum's music I am listening stopped&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>wowo</td>
<td></td>
</tr>
<tr>
<td>{S}VO</td>
<td>25</td>
<td>9</td>
<td>ting1</td>
<td>{I} listen music</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>9</td>
<td>zuo1</td>
<td>{mum} change big band-aid</td>
</tr>
<tr>
<td></td>
<td>17</td>
<td>9</td>
<td>huan4</td>
<td></td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>9</td>
<td>peil2</td>
<td></td>
</tr>
</tbody>
</table>

*The number in the parenthesis indicates the number of tokens for each utterance type.

#Sign marks an utterance which deviates from the adult norm.

OSV = Object + Subject + Verb; ONeg/V = Object + Negative + (Verb); OV = Object + Verb; Qm/Qw = Question particle (Question word); SAV = Subject + Adverb + Verb; SNegV = Subject + Negator + Verb; SNegVx/VO = Subject + Negator + (Auxiliary Verb) + Verb + Object; SO = Subject + Object; SV = Subject + Verb; SVA/C = Subject + Verb + Adverb (Complement); SV/SVO – X = Subject + Verb + (Object) + any other element; SVO = Subject + Verb + Object; SV – VO =
Subject + Verb + the same Verb + Object; \(\{S\}AVO = \text{null subject} + \text{Adverb} + \text{Verb} + \text{Object}\); \(\{S\}V\{O\} = \text{null subject} + \text{Verb} + \text{null object}\); \(\{S\}AV = \text{null subject} + \text{Adverb} + \text{Verb}\); \(\{S\}V = \text{null subject} + \text{Verb}\); \(\{S\}NegV = \text{null subject} + \text{Negator} + \text{Verb}\); \(\{S\}NegV\{O\} = \text{null subject} + \text{Negator} + \text{Verb} + \text{null object}\); \(\{S\}NegVO = \text{null subject} + \text{Negator} + \text{Verb} + \text{Object}\); \(\{S\}VONeg = \text{null subject} + \text{Verb} + \text{Object} + \text{Negator}\); \(\{S\}VO = \text{null subject} + \text{Verb} + \text{Object}\).

### 4.4.2 Clause types

Following Fletcher (1985, 74), a clause is understood as “an utterance which contains a finite verb”, which applies to English. In Mandarin, a main clause is taken as a similar unit in this study (see Li & Thompson, 1981; Chao, 1973). Table 4.5 provides a summary of the clause patterns from Table 4.4.

<table>
<thead>
<tr>
<th>Clause types ({S}V(O))</th>
<th>Clauses involved</th>
<th>Tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>*({S}V(O))</td>
<td>(SV), (SNegV), (SV-X)</td>
<td>60</td>
</tr>
<tr>
<td>(SV)</td>
<td>(SV), (SNegV), (SV-X)</td>
<td>55</td>
</tr>
<tr>
<td>(SVO)</td>
<td>(SVO), (SV-VO), (SNegVx)/(VO), (SVO-X)</td>
<td>38</td>
</tr>
<tr>
<td>(OV)</td>
<td>(ONeg/V), (OV)</td>
<td>17</td>
</tr>
<tr>
<td>({S}V{O})</td>
<td>({S}V{O}), ({S}{NegV}{O})</td>
<td>11</td>
</tr>
<tr>
<td>(SAV)</td>
<td>(SAV)</td>
<td>6</td>
</tr>
<tr>
<td>(OSV)</td>
<td>(OSV)</td>
<td>5</td>
</tr>
<tr>
<td>(SVA/C)</td>
<td>(SVA/C)</td>
<td>4</td>
</tr>
</tbody>
</table>

* Imperatives are excluded from this count.

As Table 4.5 shows, there is a high incidence of the \(-V(O)\) pattern with a null subject (60 out of 196 tokens), which comprises 30% of the total combinations. As described above, this reflects target like usage of clauses with no overt subject if the information is recoverable from the context. The second pattern in order of importance is \(SV\) (55 tokens out of 196), which constitutes 29% of the total syntactic patterns. The third most common pattern is \(SVO\) (38 tokens out of 196). Obviously the most common clause types are \(-V(O)\) and \(SV\). If we group them together, they
amount to 115 tokens out of 196 and 55% of the total syntactic patterns. Other commonly found patterns include, in order of frequency, SVO, OV, \{S\}V{O}, SAV, and SVA/C. Overall, we can say that word order types derived from the basic string SVO/C (e.g., SVO, SV, VO, SAV, SVA/C, \{S\}V{O}, \{S\}VO and SO) clearly outnumber other types of sequences found in the corpus. There is only one exception to these clause patterns: OV. It is worth noting that all of the OV utterances are marked with #, which means that all of them deviate from the adult norm. As described, adult Mandarin language is a topic-prominent language so O(S)V patterns such as topicalization sentences are highly acceptable (see Li & Thompson, 1981, 15-27, 85-102). However, James’ usage between 2;0 and 2;6 is ungrammatical: they are in an ill-formed OV pattern. The incidence of SV(O) incidence would be even higher, except that the decision was made to analyse such utterances as OV, e.g., yue4liang4 you3/ “moon have”/there is moon and ma3. qi2-ma3/ “horse--ride-horse”/horse I want to ride. At first glance, these forms are SV and SVO with yue4liang4/ “moon” and ma3/ “horse” as subjects. If conversational context is taken into consideration, however, it is clear that yue4liang4 and ma3 are objects in an adult-initiated question in previous turns. An adult had asked the child: Ni3 kan4jian4 yue4liang4 le ma?/ “Do you see moon?” Appropriate answers are either –V- as in kan4jian4 le/ “seen” or SVO in a presentative/existential sentence with you3/ “have/there is(are)”: Tian1shang4 you3 yue4liang4/ “There is moon in the sky”. The child’s use of topicalized object yue4liang4/ “moon” followed by the existential verb you3/ “there is (are)/have” is semantically clear but syntactically ungrammatical. Topicalized sentences with you3 as a main verb account for 7 tokens of the 17 total OV patterns. As for ma3/ “horse”, this was an object in an adult question from a previous turn: kan4, kuai4 kan4 ma3! Kan4 jian4 le ma?/ “look, have a look at the horse, have you seen it?”. Answers like –V-: kan4jian4 le/ “seen” or OSV: ma3. wo3 yao4 qi2/ “horse I want to ride” are both target-like. The child’s answer ma3. qi2-ma3/ “horse – ride-horse” is meaningful to the conversational partners (the parents) but ungrammatical in adult terms. Note that qi2-ma3/ “ride-horse” is hyphenized since it is not possible to be sure whether at this point in development the child treats qi2 as a verb separate from its object ma3. The analysis of qi2 and ma3 as a single unanalysed verb is justified in the absence of any recorded instances of qi2 being used as a free verb in combination with other constituents.
Other verbs used in the OV patterns are *tuo1* /“take off” and the negators *mei2you3* /“don’t have” and *bi4yao4* /“don’t want”. It happens that all the child’s OV utterances deviate from the adult’s norm. But all of his OSV utterances are target-like, e.g., *da4yang2. er2er yao4* /“big-sheep, Sonson want” in turn 8 of recording session 10. It seems that the child is in the early process of acquiring O(S)V structure although he has not acquired the full knowledge of the patterns. For instance the child’s semantic knowledge of verbs is still incomplete, and further learning of the restrictions on the type of elements that can follow a topicalized object will presumably be a very slow process indeed. Therefore it is not surprising that his attempts at OV are all ungrammatical.

The most common clause type in James’ production is –V(O), followed by SV and SVO. If we put SV and SVO together, we get an overall picture that his syntactic development follows a strong SVO order, although he produces more utterances that are either –V(O) or SV rather than SVO. James’ word order variations, such as OV and OSV in his early multi-word Mandarin combinations, reflect adult word order flexibility in Mandarin, as explained above. This appears to be evidence that the nature of input, whether it be processed by more or less specific innate grammatical mechanisms or not, influences the child’s acquisitional pattern. Scholars studying a young Catalan-Spanish bilingual (Juan-Garau & Pérez-Vidal, 2000) have encountered the same kind of word order variability which matches that of the adult language.

### 4.4.3 Comparisons with Mandarin monolingual children

In the literature on Mandarin children little attention has been paid to the acquisition of word order. Erbaugh (1992, 403) found in her review that strong SVO order emerges as multi-word utterances become more common with MLUs fluctuating between 1.8 and 2.5 (Erbaugh, 1982, 81-87; Lee, 1981, 45). At this point in development, children produce many sentences that are either SV or VO, but very few SVO. Reordering a VO phrase to topicalize it as OV does not occur in her data. A major finding of Erbaugh (1982, 1983) is that the early grammar of Mandarin-
speaking children shows a rigid word order. Beginning from 1;10, an agent-verb-patient order was established for actional verbs, as in *wo chi yu* “I eat fish”, and a patient-verb order for state/process verbs, as in *yu haochi* “fish tasty”. This word order distribution was adhered to by the children despite the fact that the target language permits SOV and OSV orders through processes such as topicalization. Erbaugh reports that the variant orders emerged only at later stages of development.

Cheng’s (1986) study, however, shows that word order in development may not be as rigid as that claimed by Erbaugh (1982). Cheng observed that patient-verb utterances as well as agent-verb sequences were not uncommon for action verbs in early grammar. Utterances were recorded in which the preverbal argument was the patient, such as *Didi ma* “brother scold” (at 2;0) in response to the question “who did Ah San scold?”, and *wawa xiu* “doll repair” (at 2;1).

As for James, he exhibited a similar preference for producing more VO and SV patterns than SVO. The differences lie in the frequency of use of SVO. In James’ data, SVO constitutes the third most frequent clause type in the corpus. In Erbaugh’s (1982) data, SVO occurs only in a few instances. In James’ data, OV fronting is used for a definite, completed act on a patient, to express a theme subject in sentences containing action verbs, e.g., *xie2 tuo1* “shoe taken-off”. These are similar to the OV sequences in Cheng’s (1986) data. In James’ data, OV structures involving agent-verb, experiencer-verb, patient-verb combinations comprises the fourth most frequent clause type. In the area of topicalization, James’ use of OSV is much earlier (age 2;3;16, MLU2.3) and relatively error-free in comparison with his monolingual Mandarin-speaking peers. SOV structure has been reported to be the last structure acquired by monolingual children (cf. Lee, 1996, 306-310; Erbaugh, 1992, 419)). The same situation happens with James; at this point in his development, the SOV clause type remains unattested.

Comparisons with the data from James show that there are no major qualitative differences between James’ use of Mandarin word order and that of his monolingual Mandarin-speaking peers. It seems that James experiments with more varied types of possible target word orders than his monolingual peers. His flexibility in the use
of word order within the range permitted in the adult language shows an early sensitivity to surface cues to the underlying structure.

4.4.4 Syntactic development in English

The nature of James’ early two-word combinations (between 2;0 and 3;0)

Compared to Mandarin, James’ development in English goes through a period in which he only produced single words. This lasted from 1;7 until 2;2;26 (at recording session 9). Here, as elsewhere in the corpus, only fully transcribed utterances are counted. During the period from 2;0 to 3;0, James liked to chant English songs and rhymes and play games by himself so he produced many chunks of English phrases. These utterances were not included in the analysis due to their purely imitative nature. However, where James used certain formulaic frames with various changed constituents, these utterances were retained for the later syntactic analysis James’ first tape-recorded utterances in English occurred in session 5 when James was 1;11;03. During this period he produced 40 types and 64 different tokens in English, of which three were nominals: *father*, *Woolworths* and *Town Hall*, four were relational terms: *ok*, *sorry*, *good* and *yarm* (yummy) and the rest were sounds and routines (33 types out of 53 tokens). It is interesting to note that, although his development in English was slower than it was for Mandarin, in fact the first word James ever uttered was in English: *gu:t* “good”, a relational term to comment on an experience. At the 50-word level in production, the general nominals (which include both common nouns and pronouns) were restricted to action words and relational words. There is no evidence that nominals develop more quickly than verbs, contrary to Gentner (1982). This marks a clearly different route of lexical acquisition in English than in his Mandarin; in English James begins with context-bound and social-pragmatic words, while the universal noun advantage posited by Gentner is only apparent in his early Mandarin.

Two-word combinations in English appeared at 2;3;26 (at recording session 9), but were still quite scarce until the age of 3;6;01 (at recording session 49). Thus, as with his development in Mandarin, his first two-word combinations in English did not
lead to rapid syntactic growth. Table 4.6 shows all instances of James’ initial two-word combinations in English. For each combination, presented in order of appearance, the syntactic categories in the construction are specified and examples of his production are provided, with information about tokens, turns and recording sessions.

**Table 4.6 Types and tokens in James’ two-word combinations in English between 2;0 and 3;0 (N = 24)**

<table>
<thead>
<tr>
<th>Categories</th>
<th>Tokens</th>
<th>Session</th>
<th>Turn</th>
<th>Examples</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>[IW][Nc]</td>
<td>5</td>
<td>9</td>
<td>21</td>
<td>Ye. Woolworth (2;3;26)</td>
<td>yes. shop/any shop or similar building</td>
</tr>
<tr>
<td>[Adj][Adj]</td>
<td>2</td>
<td>13</td>
<td>20</td>
<td>one-more one-more (2;4)</td>
<td>more than one</td>
</tr>
<tr>
<td>[IW][Nk]</td>
<td>2</td>
<td>13</td>
<td>24</td>
<td>bye bye.po2</td>
<td></td>
</tr>
<tr>
<td>[Nc][Adj]</td>
<td>2</td>
<td>16</td>
<td>3</td>
<td>Townhall OK (2;4;25)</td>
<td></td>
</tr>
<tr>
<td>[Nk][Adj]</td>
<td>4</td>
<td>12</td>
<td>55</td>
<td>ba1ba naughty (2;3;28)</td>
<td>dad bad</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>32</td>
<td></td>
<td>po2po naughty</td>
<td>grandma bad</td>
</tr>
<tr>
<td>[Adj][NomM]</td>
<td>2</td>
<td>18</td>
<td>13</td>
<td>#one-more de (2;5;17)</td>
<td>want a bit more</td>
</tr>
<tr>
<td>[Adj][IW]</td>
<td>1</td>
<td>18</td>
<td>17</td>
<td>yarm baduba</td>
<td></td>
</tr>
<tr>
<td>[V][V]</td>
<td>2</td>
<td>18</td>
<td>65</td>
<td>cuddle. bi-cuddle.</td>
<td></td>
</tr>
<tr>
<td>[Adj][Adj]</td>
<td>2</td>
<td>22</td>
<td>7</td>
<td>one-more more (2;6;25)</td>
<td></td>
</tr>
<tr>
<td>[Nk][V]</td>
<td>2</td>
<td>13</td>
<td>40</td>
<td>ba4ba weewee</td>
<td>dad pee</td>
</tr>
</tbody>
</table>

* The number in parenthesis indicates the number of tokens for each utterance type. IW = Interactive word; Nc = Common noun; Adj = Adjective; Nk = Kinship noun; #NomM = Nominal marker (deviant particle); V = Verb

At the two-word level, the most common combination between 2;0 and 3;0 is that of relational words, in particular, an adjective in combination with another element (6 types out of 13 tokens). One point to emphasize about these examples is the heterogeneity of the term ‘adjective’ as we are using it across the two tables (4.6 and 4.7). In these tables, ‘adjective’ refers to either a single element as in traditional grammar or a fixed phrase, with a variety of realisations. This function definition of an adjective is adopted in order to take the child’s meaning in context into account to achieve an appropriate developmental perspective.

Examples:

92
One-element realisations:

yarm
OK
naughty
cool
white

fixed phrasal realisation:

one-more

Let’s take one-more as an illustration. James’ first recorded use of one-more one-more happened when his mother showed him a bag of lollies and asked him to choose one but he insisted on “one-more one-more” (age 2;4), then took more than one lolly (several) from the plastic bag. The actual context suggests that James treats one-more as one fixed term and it means ‘several’ instead of ‘one extra’ to him. One month later (at 2;5;17), James elaborated it into a two-word combination. It was in a Mandarin context and he demanded more bread from his grandmother. While he was impatiently arguing about it, James suddenly code-switched to English one-more mixed with Mandarin nominalizer particle de. His demand runs as Er2er yao4 mian4bao1. Er2er yao4 yao4 mian4bao1. one-more de. one-more de/ “Sonson want bread. Sonson want want bread. A bit more bread. A bit more bread.” His mother took his one-more de as “more than one piece of bread” so gave him two pieces. He uttered yarm to show satisfaction in the next turn. Remember at the same age in his Mandarin examples in Table 4.3, we see the similar over-marking phenomenon for de, e.g., Auchee na2 de de (2;4)/ “Auchee take that one”, in which the first de is a nominalization marker. In the following month in a similar situation he demanded more peanuts and said “one more more”. Seeing his mother give him four peanuts, he was not happy and repeated this phrase. It was obvious that one-more more to him means “lots of/many”. This time his mother showed him both empty hands and said “no more”. It is apparent that James assigned a non-adult meaning to one-more and treated it as adjective in combination with other elements.
The second most frequent combination is interactive words plus nominals (2 types out of 7 tokens). The other categories are nominals plus adjectives (2 types out of 6 tokens), nominals plus verbs (1 token), verbs plus verbs (1 type out of 2 tokens). Among all of the nominal combinations, only four types of nominals are used. Of them two proper names Woolworths and Town Hall are English nouns. They all happened to appear in the combination of interactive words plus nominals and had the highest frequency of any nominal combination. The other two are Mandarin kinship terms po2po2/ “grandma” and ba4ba/ “daddy”.

James’ initial two-word combinations in English display a different picture from his Mandarin. In English, he seems to produce more combinations with relational terms, interactive words and formulaic phrases than with English nominals. While in Mandarin, his two-word combinations are predominantly nominals, kinship nouns, common nouns, or pronouns combined with verbs, prepositional phrases, or common nouns (see Table 4.3).

A sample of James’ English utterances at 2;4 illustrates this point:

Date: 13-04-96
Situation: Mother R takes the child to visit an English-speaking friend Kath. K offers lollies to A (the child).

K: James, do you like lolly?
A: Ye.
K: Would you like some?
A: Ok …oh, no.
R: You can try one.
A: One more. [he wants a few more]
R: No.
A: One more. one more
A: Oops-oh-Daisy. [he dropped the lolly]
K: Another one?
A: No more. Thank-you.
K: Good boy.
A Cuddle, cuddle, bi-cuddle.

The example demonstrates that without using nominals, the child can communicate informatively with the help of adults’ contextual interpretation. This conversation further shows that James’ English remains at the two-word stage at this point of his development. He seems to produce more relational terms and formulaic phrases than nominals, although he does comprehend more English nominals than he produces, e.g., he understands his English name James but never produces it at that time.

*The nature of James’ two-word and three-word combinations (between 3;0 and 3;6)*

Table 4.7 displays all instances of James’ two- and three-word combinations in English. For each combination, presented in order of appearance, the syntactic categories in the construction are specified and one or two examples which he produced are presented. Tokens, turns and recording sessions are also included.

As happened with Mandarin, one-word utterances were still the most frequent type at this stage of his production in English. One-word utterances constitute 46 per cent of the total 58 analysed utterances in the sample, but there are 43 per cent of the sample are two-word utterances and 0.5 per cent are three-word ones. When we look at James’ single-word utterances from this period, other than instances of ye, no, some formulaic chunks taken from rhymes, songs and games (the frequency of those utterances still remains high, about 25% of the total corpus if we take them into account), we find he used more nouns than verbs and adjectives between 3;0 and 3;3. Besides proper names, he produced nine more nouns to refer to facial features, transport and animals. These are eyes, nose, mouth, bus, car, train, chicken, bird, and cup. There is only one new verb push and one more adjective yark. It seems that during this three-month period, he began to pay attention to English nouns, an issue which deserves careful analysis but which lies outside the scope of this study. After the onset of nouns, James’ production of English pronouns emerged between 3;3;19 and 3;6;01. These are: demonstrative this (3;3;19), I’m (3;4;22), we (3;4;22), and I (3;6;01). Another interesting feature of the child’s vocabulary growth at this
stage is that the production of new nouns as well as verbs increased, while
adjectives, which he used frequently between 2;0 and 3;0 (see Table 4.8) are reduced
to two instances in Table 4.7.

As for his two- and three-word combinations, the most frequent patterns were verb
combinations (21 tokens): verb + verb/verb particle (13 tokens), noun/pronoun +
verb (4 tokens), pronoun + verb + noun (2 tokens), negator + verb (2 tokens). The
second most frequent patterns were noun combinations: noun + other elements or
another element + noun (7 types out of 12 tokens). The only pattern left was
question word + demonstrative. James used both left and right external negation,
e.g. no Joy, Joy no, and no stop for rejection. There is only one instance to illustrate
the development of James’ interrogatives at this stage: what this?. It is worth noting
that in his first use of question formation in English, James followed the English
sequence where the question word what is phrase-initial although an obligatory
copula was omitted. The child did not transfer the Mandarin sequence of question
formation (already attested in his speech, since his Mandarin developed faster) in
which the pattern would be “this what?” The copula appeared in both contracted
form (one type/token) and non-contracted form (one type and two tokens), although
the number of instances is low. The only instance of a native-like combination of
subject + copula + verb + ing occurred in a context when James pretended to talk to
a friend on the phone and told him that he was driving to his place. Since it fit the
situation so well it may have been the dawn of the child’s knowledge or at least
expression of English aspect marking, although we do not have substantial data to
support this assumption at this stage. Other features of James’ verb use at this time
include verbs formed in two parts: verb + verb particle/adverb, e.g. come on, go
away.

If we now turn to a comparison of two- and three-word combinations in Table 4.8
and Table 4.7, we find interactive words reduced and Mandarin nouns, which
occurred earlier, absent in combination with other elements in Table 4.7. Instead,
English nouns sprouted up and started to combine with various elements. Verbs
including the copula display more variety in Table 4.7. Moreover, the verb string
displayed target-like sequencing.
Table 4.7 Types and tokens of utterances in James’ two- and three-word combinations in English between 3;0 and 3;6 (N = 31)*

<table>
<thead>
<tr>
<th>Categories</th>
<th>Tokens</th>
<th>Session</th>
<th>Turn</th>
<th>Examples</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>[Ad]/[Nc]</td>
<td>1</td>
<td>44</td>
<td>2</td>
<td>oh. cool. Monkey (3;3;19)</td>
<td></td>
</tr>
<tr>
<td>[Dp]/[Nc]</td>
<td>1</td>
<td>44</td>
<td>7</td>
<td>this way</td>
<td></td>
</tr>
<tr>
<td>[Nk]/[Neg]</td>
<td>2</td>
<td>44</td>
<td>30</td>
<td>Joy. no.no.</td>
<td></td>
</tr>
<tr>
<td>[Neg]/[Nk]</td>
<td>2</td>
<td>44</td>
<td>33</td>
<td>no. Joy. no</td>
<td></td>
</tr>
<tr>
<td>[[Pron]/[Np]]</td>
<td>1</td>
<td>46</td>
<td>38</td>
<td>hellow. I'm Ben (3;4;22)</td>
<td></td>
</tr>
<tr>
<td>[Pron]/[Cop]/[V]</td>
<td>2</td>
<td>46</td>
<td>39</td>
<td>we are moving</td>
<td></td>
</tr>
<tr>
<td>[Nk]/[V]/[Vp]</td>
<td>2</td>
<td>47</td>
<td>23</td>
<td>Joy. Joy come on (3;5;05)</td>
<td></td>
</tr>
<tr>
<td>[V]/[Vp]</td>
<td>5</td>
<td>47</td>
<td>25</td>
<td>go away</td>
<td></td>
</tr>
<tr>
<td>[V]/[V]</td>
<td>8</td>
<td>40</td>
<td>17</td>
<td>push push (3;2;15)</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>48</td>
<td>cuse-me cuse-me (3;5;20) excuse me</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>48</td>
<td>kiss cuddle kiss and cuddle</td>
<td></td>
</tr>
<tr>
<td>[Ad]/[Nc]</td>
<td>1</td>
<td>48</td>
<td>40</td>
<td>white dog</td>
<td></td>
</tr>
<tr>
<td>[Pron]/[V]/[Nc]</td>
<td>2</td>
<td>49</td>
<td>23</td>
<td>I want toilet (3;6;01)</td>
<td></td>
</tr>
<tr>
<td>[Qes]/[Dp]</td>
<td>2</td>
<td>49</td>
<td>39</td>
<td>what this?</td>
<td></td>
</tr>
<tr>
<td>[Neg]/[V]</td>
<td>2</td>
<td>49</td>
<td>43</td>
<td>no stop</td>
<td></td>
</tr>
</tbody>
</table>

* The number in parenthesis indicates the entire number of tokens.

Nc = Common noun; Adj = Adjective; Nk = Kinship noun; #NomM = Nominal marker (deviant particle); V = Verb; Dp = Demonstrative pronoun; Neg = Negator; Np = Proper noun; Cop = Copula; Vp = Verb particle/adjunct; Pron = Pronoun; Qw = Question word

Three- and multi-word combinations

As shown in Table 1, James started at English-speaking day care on 12 September, 1996 when he was 2;8;30. As the diary recorded, he kept silent at the day care centre for more than six months, while he played and followed the routines. The diary noted that he seemed to copy what was happening at the centre such as English rhymes, songs, games, stories and people’s spoken language, but according to the teacher and caregiver, never uttered a word of English. However, when he got home he did mimic and reproduce some content of these events loudly in English. That is why lots of his recorded English utterances at this period were unintelligible and involve formulaic chunks. Most of these data are excluded from further analysis due to its unidentifiable nature. The breakthrough in his English production, with the
emergence of combinations of more than two elements, was recorded after he entered the English child care centre and experienced a silent period up to 3;6;01. At this moment, James exhibited an average MLU in words of 2.0 in English, placing him at Brown’s Stage II. In the course of the following one month his MLU rose to 2.89 when he was 3;7;01, that is, Stage III. Within three months at age 3;10;22, his MLU reached 3.31 at Stage IV. At 4;0, his MLU was 3.99, placing him at Brown’s Stage V. This rapid growth differs significantly in rhythm from the more gradual development in Mandarin.

In what follows we examine James’ syntactic patterns in his three- and multi-word utterances between 3;6;01 and 4;0. Table 4.8 displays the different types of syntactic constructions found in the samples of recording sessions 49 to 65. For each combination, the categories involved are specified and examples are given to illustrate James’ usage. The numbers given in parentheses refer to the actual tokens of a given pattern.
### Table 4.8  Types and tokens in James’ syntactic patterns in English between 3;6;01 and 4;0 (N = 221)

#### Stage I

**Declaratives**
- Noun + Omatopoeia (6): "dog woofwoof", "monkey yikyik"
- Interactive words (9): "oh, dear", "ye", "umbrella, yes"
- Noun (28): "crocodile", "turnip"
- Adjective (8): "OK", "blue", "yark", "yummy"

**Imperatives**
- "Look" (1)
- "Stop" (2)
- "Push" (4)

**Negatives**
- "No" (9)

**Interrogatives**
- "pink?" (1)
- "this?" (1)
- "mummy?" (3)
- "Thomas?" (1)

#### Stage II

**Declaratives**
- Adjective + Noun (3): "yellow book", "little baby"
- Adjective + Adjective (1): little big
- SV (1): "baby sleep"
- Demonstrative + Noun (1): "this dog"
- Adverb (2): "in the bachi", "of be wu"

**Imperatives**
- VX (5): "go away", "sit down", "come on", "put hand"
- "catch you"
- Proper noun + V (3): "Joy push", "Joy stop"
- Numerals + X (2): "a more", "one more"

**Negatives**
- No + X (6): "no stop", "no water", "no lolly", "no more"

**Interrogatives**
- QX (26): "what this?" (24), "what that?", "how much?"
- NN (8): "this one?", "two dollar?", "number seven?"

#### Stage III

**Declaratives**
- SVO (13): "I want toilet", "Everyone you3 a yellow book"
- "Dog eat bone", "You get that!", "I get seven"
- SVC (7): "My name is Joy", "It's mine", "This is the book",
- "That's all right"
- SO (4): "Everyone a big book", "This your finger one",
- "Another book Mickey Mouse"
- SVA(1): "A pencil's there"
- SA (2): "Flower in the box"
- ASV (1): "Here you go"
- XYN (2): "Baby two ball", "Blue and white"

**Imperatives**
- VA (8): "Put in here", "Put on your hat", "Put in the pencil",
- "Daddy, look at this", "Work on the table"
"Put in the bag", "Put on the tissue"
VO(4): "Open the door", "Eat your lolly"
VOA (1): "Put hand here"

Negatives
SENegV (2): "I don’t know"
NegVO (1): "Don't touch me"

Interrogatives
QXY (9): "What's your name", "What's baby name?"
   "What's colour?", "What's the matter",
   "What-cha the ball?"
QX (1): "How much that?"
AuxXY (5): "Do you try this?", "Do you try book?",
   "Do you try lolly pop?"
SVO (2): "You got this?", "You got that?"
XYN (3): "Mummy, big one?", "Mummy, jingle bell?",
   "More jingle bell?"

Stage IV
Declaratives
SVOA (1): "You find the lolly here."

Imperatives
SVO(3): "You brush your teeth", "You wash your face"
VOA (3): "Put book on your hat", "Put that in this"

Interrogatives
SVO (4): "You get some this?", "You get some ball?"
   "You get some blue?", "No, you get some that?"
QXY (1): "What colour in the table?"

Stage V
XYZ (1): "Yes or no maybe true"

Coordination (6)
XconjY: "One jingle bell or two jingle?"
VAconjNegVO: "Ye. Put in it then don't touch it."
VASVO: "stay there. I go to the toilet."
SVONegX: "you get this jingle bell. not this one."

Topicalization (6)
OSVO (2): "Orange, I want some orange"
SX (1): "Carrots, it's broken"
OSV (1): "This book, I found"
SCO (1): "Winnie the Phooh, big this book"
CS (1): "Ye...yark....this book."

* The numbers in parentheses indicate the number of tokens for each utterance type.
SV  =  Subject + Verb; VX  =  Verb + another element; QX  =  Question word + another
   element; NN  =  Noun + noun; SVO =  Subject + Verb + Object; SVC =  Subject +
   Verb + Complement; SO =  Subject + Object; SVA =  Subject + verb + adverb; SA =
   Subject + adverb; ASV =  Adverb + subject + verb; XYN =  another element +
   another element + noun; VA =  Verb + adverb; VO =  Verb + object; VOA =  Verb +
   object + adverb; SENegV =  Subject + negator + verb; NegVO =  Negator + verb +
   object; AuxXY =  Auxiliary verb + another element + another element; SVOA =
Subject + verb + object + adverb; QXY = Question word + another element + another element; XYZ = another element + another element + another element; NegXY = Negator + another element + another element; XconjY = Another element + conjunction + another element; VAconjNegVO = Verb + adverb + conjunction + negator + verb + object; VASVO = Verb + adverb + subject + verb + object; SVONegX = Subject + verb + object + negator + another element; OSVO = Object + subject + verb + object; SX = Subject + another element; OSV = Object + subject + verb; SCO = Subject + complement + object.

The syntactic profile is adapted from the LARSP procedure used by Fletcher (1985, 47-48). Full details of the procedure are available in Crystal et al. (1981) and a full list of examples illustrating each structural type that is adapted in the above profile can be found in Table 2.1 in Fletcher (1985, 52).

During this period (3;6;01 to 4;0), NP constructions began to become richer and longer, e.g. *yellow book, a big book, your finger one*. Prepositional phrases were produced in which most of the expressions were locative relations: *here, in it, on your hat, in the table*. There was a high incidence of the SVO pattern (25 tokens out of 242 utterances). In the declarative clause, SVO constructions occurred (15 tokens out of the 46 syntactic patterns in a total of 105 utterances). The second pattern in frequency of occurrence in the declarative clause was the copula construction SVC (8 tokens out of the 46 patterns). The third most frequent construction was topicalization (6 tokens). The fourth most frequent was SO (4 tokens) and the fifth was the intransitive construction SV (3 tokens). In the imperative clause, the most frequent pattern was VA (12 tokens out of the total 54), the second most frequent sequence was NegX (7 tokens) and the third most frequent patterns are VO, VOA and NegV. As for the interrogative clause, the most prominent pattern was QX (24 tokens out of a total 67), in which “*what this?*” occurred 22 times. It was his first formulaic usage of an interrogative formation with question words. This could serve as a model for the child to use the strategy of slot-and-frame patterns to break into multi-word structure in English. He showed a tendency to derive patterns by discovering ‘slots’ in previously unanalysed phrases in his English multi-word development. The QXY pattern (12 tokens) followed as the second most frequent
pattern, in which “what’s X?” became an expanded formulaic frame taken from “what this?”. The SVO pattern (6 tokens) with a rising tone at the end of the sentence appeared as the third most frequently used structure to indicate interrogatives. The fourth most frequent constructions, AuxXY constructions (5 tokens), were “Yes-No” questions and in this sample were all formed by “Do you try X?”\(^2\). They seem to coincide with those found by Brown (1973) and his colleagues, which were dismissed as being formulaic rather than productive. However, this pattern provides further evidence that the child is becoming sensitive to differences in the type of units which the child is extracting from the input. The segmentation of frozen phrases out of input language is another approach which James uses to learn English syntactic constructions.

If we look at his development in English negation, we find that he followed the same strategy as he used to break into the question formation of interrogatives. He employed don’t + verb and no + noun as frames in his initial negative constructions at this multi-word stage. Later, he added another element either in front or at the end to lengthen the sequences. Table 4.9 illustrates this point. In Table 4.9, the recording sessions as well as the turn numbers in each recording session are presented. Constructional frames and syntactic patterns are provided, together with examples in which the coding symbols are the same as the previous tables. Tables 4.7 and 4.9 show that James’ negative constructions were used to express non-existence, rejection, and denial. In the monolingual literature, the usual progression in this area (cf. Klima & Bellugi, 1966) is held to be from clause-external negative elements (not mummy go) to clause-internal elements (mummy not go), prior to the appearance of auxiliaries, when contracted forms (can’t, won’t) become common. The negative constructions in James’ data indicated that he tackled negatives in the same slot-and-frame way as he did in the interrogatives although his production in this regard was still incomplete and limited to a small range of verbs and positional patterns.

\(^2\) Stuart Campbell points out that ‘Do you try X?’ is a really unusual pattern and could not be formulaic since it would rarely occur as input.
Table 4.9 The total corpus of multi-word negations in James’ English between 3;6;01 and 4;0 (N = 17)

<table>
<thead>
<tr>
<th>Session</th>
<th>Turn</th>
<th>Frames</th>
<th>Examples</th>
<th>Syntactic patterns</th>
</tr>
</thead>
<tbody>
<tr>
<td>53</td>
<td>3</td>
<td>don’t’ + V</td>
<td>don't touch</td>
<td>NegV</td>
</tr>
<tr>
<td>53</td>
<td>5</td>
<td>don’t’ + V</td>
<td>don't touch</td>
<td>NegV</td>
</tr>
<tr>
<td>63</td>
<td>26</td>
<td>don’t’ + V</td>
<td>don't know</td>
<td>NegV</td>
</tr>
<tr>
<td>51</td>
<td>36</td>
<td>don’t’ + V + Pron</td>
<td>don't touch me</td>
<td>NegVO</td>
</tr>
<tr>
<td>49</td>
<td>43</td>
<td>no. V.</td>
<td>no. stop.</td>
<td>NegX</td>
</tr>
<tr>
<td>52</td>
<td>4</td>
<td>no + N</td>
<td>no.no. stop.</td>
<td>NegX</td>
</tr>
<tr>
<td>52</td>
<td>16</td>
<td>no + N</td>
<td>no water</td>
<td>NegX</td>
</tr>
<tr>
<td>53</td>
<td>1</td>
<td>no + N</td>
<td>no lolly</td>
<td>NegX</td>
</tr>
<tr>
<td>63</td>
<td>58</td>
<td>no + N</td>
<td>no. a more</td>
<td>NegX</td>
</tr>
<tr>
<td>63</td>
<td>62</td>
<td>no. V</td>
<td>no. stop.</td>
<td>NegX</td>
</tr>
<tr>
<td>63</td>
<td>68</td>
<td>no + N</td>
<td>no more</td>
<td>NegX</td>
</tr>
<tr>
<td>62</td>
<td>24</td>
<td>no + N</td>
<td>no coffee. tea</td>
<td>NegX.Y</td>
</tr>
<tr>
<td>63</td>
<td>10</td>
<td>not + NP</td>
<td>not this book. this book.</td>
<td>NegX.Y</td>
</tr>
<tr>
<td>57</td>
<td>50</td>
<td>Pron + don’t + V</td>
<td>I don't know</td>
<td>SNegV</td>
</tr>
<tr>
<td>57</td>
<td>52</td>
<td>Pron + don’t + V</td>
<td>ye. I don't know</td>
<td>SNegV</td>
</tr>
<tr>
<td>65</td>
<td>21</td>
<td>not + NP</td>
<td>you get this jingle bell. not this one.</td>
<td>SVONegX \</td>
</tr>
<tr>
<td>65</td>
<td>17</td>
<td>don’t’ + V + Pron</td>
<td>ye. put in it then don't touch it</td>
<td>VAconjNegVO \</td>
</tr>
</tbody>
</table>

If we compare James’ development with monolingual children, he seems to be following the same route of acquisition, but not the same rate. James’ route coincides qualitatively in areas such as the acquisition of word order, the appearance of determiner in noun phrases, and the realisation of prepositional phrases (or adverbial complementation) (Fletcher, 1985). Let us have a comparative look at James’ declarative clauses in relation to his monolingual and bilingual peers.

**Subject realisation**

To analyse subject realisation, James’ corpus was searched for declarative utterances that contain a finite verb. Utterances that were clear imperatives were discarded. Since the fact that a child is able to comprehend or even produce a given utterance cannot be taken as an indication of grammatical knowledge (Fletcher, 1985, 208), declarative clauses which were the result of an imitative repetition of the adult’s previous utterance were not considered in this analysis of subject realisation. By the same token, utterances that were formulaic in nature rather than productive, and utterances containing unintelligible elements have also been excluded from analysis. The unanalysed chunks of speech, which the child used as if they constituted lexical units, have been identified because none of their constitutive elements had appeared
independently before. Table 4.10 presents a summary of the types and tokens of declarative, imperative, and interrogative patterns of James’ English between 3;6;01 and 4;1. The numbers given as tokens refer to the actual number of occurrences of a given pattern. As can be seen in the table, the total proportion of declarative clauses with an expressed subject in English was 100%. Even in the six types of topicalizations: SX, CS, OSV, SCO and XSVO, subjects were always realised. Although the use of percentages with structures that have so few occurrences may be questionable, it has been adopted for reasons of replicability (De Houwer, 1998).

Table 4.10 A summary of types and tokens of James’ declarative, imperative and interrogative patterns in English between 3;6;01 and 4;0

<table>
<thead>
<tr>
<th>Declaratives</th>
<th>Tokens (N = 105)*</th>
<th>Imperatives</th>
<th>Tokens (N = 54)*</th>
<th>Interrogatives</th>
<th>Tokens (N = 67)*</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Expressed subject: 100%</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SVO</td>
<td>15</td>
<td>VA</td>
<td>12</td>
<td>QX</td>
<td>24</td>
</tr>
<tr>
<td>SVC</td>
<td>8</td>
<td>NegX</td>
<td>7</td>
<td>QXY</td>
<td>12</td>
</tr>
<tr>
<td>Topicalization</td>
<td>6</td>
<td>VO</td>
<td>4</td>
<td>SVO</td>
<td>6</td>
</tr>
<tr>
<td>SO</td>
<td>4</td>
<td>VOA</td>
<td>4</td>
<td>AuxXY</td>
<td>5</td>
</tr>
<tr>
<td>SV</td>
<td>3</td>
<td>NegV</td>
<td>4</td>
<td>QS</td>
<td>2</td>
</tr>
<tr>
<td>SA</td>
<td>2</td>
<td>SVO</td>
<td>3</td>
<td>XconjY</td>
<td>1</td>
</tr>
<tr>
<td>SNegV</td>
<td>2</td>
<td>SV</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SVONegX</td>
<td>1</td>
<td>VAxconjVO</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SVOA</td>
<td>1</td>
<td>VASVO</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ASV</td>
<td>1</td>
<td>NegVO</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SCO</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SX</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SVA</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others:</td>
<td>Others:</td>
<td>Others:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>N(X)</td>
<td>44</td>
<td>Neg</td>
<td>8</td>
<td>N(N)</td>
<td>11</td>
</tr>
<tr>
<td>Adj</td>
<td>9</td>
<td>V</td>
<td>7</td>
<td>Adj (N)</td>
<td>3</td>
</tr>
<tr>
<td>Confirmation</td>
<td>4</td>
<td>Confirmation</td>
<td>1</td>
<td>Dp (N)</td>
<td>2</td>
</tr>
<tr>
<td>XY</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* The numbers in parentheses indicate the number of tokens for each utterance type.

As for his Mandarin, we can review his syntactic patterns in declarative sentences between age 2;0 and 2;6 (Table 4.5) when James’ basic clause structure in Mandarin seemed to have been acquired. This produces the Mandarin subject realisation data in Table 4.11.
Table 4.11  Summary of types and tokens of James’ most frequent clause patterns in his Mandarin multi-word utterances between 2;0 and 2;6 (N = 196)*

<table>
<thead>
<tr>
<th>Clause types</th>
<th>Clauses involved</th>
<th>Tokens</th>
</tr>
</thead>
<tbody>
<tr>
<td>Null subject: 45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>{S}{V(O)}</td>
<td></td>
<td>60</td>
</tr>
<tr>
<td>OV</td>
<td>ONeg/V, OV</td>
<td>17</td>
</tr>
<tr>
<td>{S}{V}{O}</td>
<td>{S}{V}{O}, {S}{NegV}{O}</td>
<td>11</td>
</tr>
<tr>
<td>Expressed subject: 55%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SV</td>
<td>SV, SNegV, SV-X</td>
<td>55</td>
</tr>
<tr>
<td>SVO</td>
<td>SVO, SV-VO, SNegVx/VO, SVO-X</td>
<td>38</td>
</tr>
<tr>
<td>SAV</td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>OSV</td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>SVA/C</td>
<td></td>
<td>4</td>
</tr>
</tbody>
</table>

* Imperatives are discarded. The number in parentheses indicates the number of tokens for each utterance type.

With respect to subject realisation in Mandarin, a first analysis reveals the proportion of expressed (55%) versus non-expressed subjects (45%). As can be seen in Table 4.11, the proportion of null subjects is much higher in Mandarin, a pro-drop language, than it is in English (100%, see Table 4.10). James clearly preferred the clause structure –V(O) (30% occurrence on average), followed by SV (28%) and SVO (19%) in Mandarin.

To summarize, James’ most common clause structure in Mandarin for the whole period under study was –V(O), with the verb marked for aspect without an overt subject. In the case of his other language, English, his preferred structures were SVO and SVC, with few inflections marked in lexical verbs. There is no trace of transfer of pro-drop knowledge from Mandarin to English; subject realisation is categorically present in James’s English. It is apparent that James follows language-dependent development in these areas of syntax.

Comparisons with monolinguals and bilinguals

Let us compare James’ SVO/SVC word order and 100% subject realisation in English declarative clauses to what is known about the production of word order and subject realisation among English monolinguals and other bilinguals. 85% of James’
utterances started with a subject; the rest comprised either a topicalized element followed by a subject or an adverbial followed by a subject. Given this pattern, there appear to be no obvious differences between James’ English data and the English data from De Houwer’s bilingual child Kate or from monolingual children. De Houwer (1990, 264, 274) mentions that in the monolingual literature, apart from Wells (1985), there is very little information on the use of word order in English main clauses after the child has reached the multi-word stage. Wells (1985), provides a useful survey of all the syntactic patterns present in his extensive corpus of cross-sectional data from British English children. His finding is that for English children aged 2;9 to 3;3, nearly all of the declarative clauses start with a subject. The few exceptions involve fronting of an adverbial with or without ensuing subject-finite verb inversion. De Houwer (1990, 246) noted that Wells’ findings resembled the data for her Dutch-English bilingual child Kate. Comparisons with the data from James show there to be no discernible qualitative differences between James’ use of English word order and that of monolingual British English-speaking age peers and the bilingual child Kate.

It is worth noting, however, that James’ rate of acquisition was different from that of monolingual children in some areas of development. James displayed less variation in finite verb forms, relatively few instances of auxiliaries and modals, and a limited range of fixed patterns of interrogatives and negatives. The fact that his development did not proceed at the same speed and in the same item-by-item building way may be due to inter- as well as extra-linguistic factors. Genesee (1989, 165-166) emphasizes the need for bilingual studies to take into account child language use in different contexts. Lanza (1992) has also stressed the need to examine the role of dominance and context. Indeed the child’s English exposure is only 1/3 of his exposure to Mandarin between the age of 1;7 and 2;8;30. After 2;9, the child attends the English day child care centre on a part-time basis. However, these stays in an English-speaking environment did not always immediately spur on his linguistic development in English. He was actively involved in activities within an English context but was passively participating in communicating and “socializing through language”, in Lanza’s words (1997, 7), as he kept silent at the childcare centre for more than six months. After this six-month silence, his English underwent a major breakthrough.
in syntactic development. Given this unequal pattern of exposure and the child’s individual personality, it is hardly surprising to see that James’ development in each of his two languages proceeded at a different pace, particularly at the beginning of this study. Indeed, his development in Mandarin began around the age of two; it was not after the age of three that his English started to develop rapidly. But the question remains: why does his English proceed along a different route, in particular, in the areas of interrogatives and negatives?

As discussed in Section 4.4.2, James’ early English vocabulary is limited to interactive words and relational terms, with very few nominals. Eventually he has to use his limited English vocabulary to communicate his needs, and this need prompts him to adopt a different approach to express himself when he has no separate item blocks – lexical items to refer to entities or events. Instead, he makes full use of the resources around his environment and starts producing English with frozen phrases and formulaic chunks. This tendency has already shown up even in his early vocabulary of English. Almost all of the particular words or phrases which initially formed part of unanalysed units can be traced back to particular ‘routines’ or ‘language games’ which James experienced in his English environment: the child care centre, English book-reading or TV time and daily English outings and activities. A prototypical example was James’ “What’s your name? My name is X.” pattern. This was initially used as an unanalysed phrase to introduce himself and greet people in a game, but was subsequently converted into a flexible labelling pattern of which no fewer than 5 different instances have been recorded. Such an example presumably reflects the fact that the child is attending to the input in his environment and undergoing a process whereby a phrase is initially segmented as a unit, but is subsequently reanalysed as a result of regularities perceived by the child in other similar words or phrases. This results in a flexible, lexically-defined formula which can be extended to other similar situations. A similar phenomenon was found for Pine and Lieven’s English informants (1993, 567).

De Houwer (1998, 258) reiterated that studies of morphosyntactic development in young bilingual children have shown that children may use quite different forms in both of their languages without exhibiting a clearly less advanced level of
development in one language compared to the other (De Houwer, 1990; Schlyter, 1990b). The use of different forms, then, does not automatically translate into comparative lack of knowledge (or competence, or skill, or level of development).

Comparisons with the child’s early syntactic combinations of Mandarin and English

Pine and Lieven (1993, 570 – 571) recognise that “to examine the acquisition of larger linguistic units and take the ‘analytic route’ to multi-word speech, to pursue the possibility that the slot-and-frame patterns which result from such a strategy may provide children with crucial distributional information which allows them to construct categories in ways which, rather than simply reflecting general underlying cognitive distinctions, are sensitive to specific features of the language which they are actually hearing.”

James’ early Mandarin two-word combinations seem to build upon his previous one-word vocabulary, and his multi-word combinations elaborate his two-word ones. An interesting feature of the child’s English production at this stage is that most of the child’s two- and three-word combinations are not built upon items already present in his single-word vocabularies. Instead, he shows a tendency to derive patterns by discovering ‘slots’ in previously unanalysed phrases.

It is now possible to characterize the link between the referential-expressive and nominal-pronominal dimensions in terms of a specific relationship between differences in the tendency of the child to develop productive patterns out of unanalysed phrases and variation in the number of unanalysed phrases, which are available to him for this purpose in their previous ‘single-word’ vocabularies. Such variation appears to reflect differences in the type of units which the child is extracting from his input, with all units presumably having the same status for the child. It is assumed that the child's language learning system operates in different ways depending on the kind of input data the child is processing.
4.5 Concluding Remarks

The analysis demonstrates that James’ syntactic development follows a strong SVO order in Mandarin, which follows the basic syntactic rule of the target language. His word order variations, such as OV and OSV in his early multi-word Mandarin combinations, reflect adult word order flexibility in Mandarin. This appears to be evidence that the nature of input in the actual learning context influences the child’s acquisitional pattern. Mandarin children are reported to adhere strictly to SVO order in their early word combinations; the variant orders emerge only at later stages of development (Erbaugh, 1982). Comparisons with the data from James show that there are no major qualitative differences between James’ use of Mandarin word order and that of his monolingual Mandarin-speaking peers. It seems that James experiments with more varied types of possible target word orders than his monolingual peers. His flexibility in the use of word order within the range permitted in the adult language shows an early sensitivity to surface cues to the underlying structure. This seems to confirm what De Houwer (1990) and Meisel (1986, 1989) have claimed that morphosyntactic development is a highly language-specific process.

James starts multiword combinations in English at 3;6;01, placing him at Brown’s Stage II. If we compare James’ development with monolingual children, he seems to be following the similar route of acquisition in certain developmental areas, but not the same rate. James’ route coincides qualitatively with Fletcher’s subject Sophie in areas such as the acquisition of word order, the appearance of determiner in noun phrases, and the realisation of prepositional phrases including adverbial complementation (see Fletcher, 1985). In other areas, James syntactic development in morphology shows signs of delay and non-parallels with his syntactic development in terms of rate, which deserves further investigation and falls outside the scope of this study.

In terms of subject realisation, only declarative sentences are considered here if we leave aside the peculiarities of imperative and interrogative sentences, James’ most
common clause structure in Mandarin for the whole period under study was –V(O), with the verb marked for aspect without an overt subject. In the case of his other language, English, his preferred structures were SVO and SVC, with few inflections marked in lexical verbs. There is no trace of transfer of pro-drop knowledge from Mandarin to English; subject realisation is categorically present in James’s English. It is apparent that James follows language-dependent development in these areas of syntax. Given that James has a strong pro-drop tendency and that it is in the language James developed at an earlier age (Mandarin), one could have expected to find an overgeneralisation of the Mandarin –V(O) pattern to English with an accompanying under-extension of the SV(O) pattern in the latter language. Yet this did not occur at any point in the child’s development. In fact, the pattern of data suggests the absence of any major influence of one language on the other. In other words, James seemed to be acquiring word order patterns, which are different in the Mandarin and English adult systems, in a language-dependent manner. He appeared to follow separate routes in his syntactic development in each language.

Comparisons of subject use between James, Mandarin monolingual children, English monolingual children, and a Dutch-English bilingual child have revealed that James used subjects in a similar proportion as his peers in each respective language. He also seemed to show a very similar pattern of general syntactic development. His development in English showed a slot-and-frame/top-down approach in comparison to his Mandarin’s item-by-item/bottom-up construction. It is suggested that this is not very different from the approaches of monolingual children since James’ Mandarin-speaking counterparts are reported to employ item-by-item approach to multi-word combinations (Erbaugh, 1982) whereas his English-speaking counterparts are observed to adopt these two approaches to break into multi-word combinations (Pine & Lieven, 1993). James’ slower rate of development in comparison with monolinguals of the same age may reflect James’ lesser exposure to English in the period up to 2;9.

Chapter 5 will explore the child’s acquisition of pronominal reference in the context of his early vocabulary development in Mandarin and English. We can examine
whether these different approaches, which show up in his early syntactic development, link up with his early vocabulary development.
5 From nominal to pronominal person reference in the early language of a Mandarin-English bilingual child

5.1 Introduction

The transition from nominal person reference to pronominal person reference in early linguistic development has rarely been reported in the literature. Bilingual L1 pronominal development studies on this issue are also scarce. This chapter of study is the first attempt to trace the developmental route from nominal to pronominal person reference of a Mandarin-English bilingual first language learner (aged 1;7 to 4;0). Production rather than comprehension is the focus of this chapter. Its aims are:

- First, this chapter aims to investigate the nature of and the route to pronominal person reference by examining the bilingual child’s NP system in early word learning in the child’s two languages in comparison with monolingual age-peers. This contextualization is in line with Chiat (1986, 14) who underscores the importance of looking at the child’s NP system as a whole when considering pronoun acquisition.

- Schlyter (1993, 289) suggests that the two languages of bilingual children are typically not quite in balance during their development. For periods of time, at least, one of the languages is weaker, in the sense that the child’s development in that language lags behind their development in the other language. The second goal therefore is to look at the role of the child’s weaker language and the strategy the child adopts in approaching the expression of person in each of the two languages. Owing to
the fact that the child may have acquired certain linguistic forms in their stronger language, we can also expect him/her to be influenced by these in the acquisition of their weaker language, and thus transfer the forms of their stronger language to their weaker language. Thus, this study may shed some light on whether there is interdependence or interaction in the domain of pronoun form-function mapping from the child’s stronger language to their weaker one.

- The third goal is to contribute to the understanding of the nature and extent of early linguistic differentiation in pronoun systems by a bilingual child. In the field of bilingual first language acquisition, current research opinion appears to have rejected the Fusion Hypothesis (Volterra & Taeschner, 1978) and supports the Differentiation Hypothesis or Separate Development Hypothesis in morphosyntactic development (Meisel, 1989, 2001; Genesee, 1989, 1995; De Houwer, 1990, 2002; Lanza, 1997). De Houwer (2005) points out that the Separate Development Hypothesis (SDH) was originally formulated to apply only to children growing up in families following the ‘one person, one language’ principle. A novel feature of the present study, then, is the focus on a bilingual child who develops pronoun systems in two typologically dissimilar languages (Mandarin and English) within a language exposure situation where the ‘one person, one language’ principle does not apply.

5.2 Person reference: issues and questions

Person identification, in the words of Deutsch et al. (2001, 284), is the precondition to socio-emotional attachment and meaningful human social life, and ‘is in place long before the beginnings of language’. However, there appear to be some ‘natural’
difficulties in the acquisition of the linguistic means for the transition to personal deixis (use of pronouns). One difficulty which has been identified in first language acquisition in acquiring the linguistic system of person reference is that proper names are replaced by pronouns in first and second persons in familiar European languages, yet children often use names not pronouns for these persons (Clark, 1978, 1979). The tendency for children’s first references to self to involve the use of their own names or nicknames is well documented (see e.g., Tanz, 1980, ch.4 for review; Chiat, 1986). Further difficulties for the child who is acquiring pronouns are posed by the shifting reference of speech roles of pronouns, as in first person and second person reversal, for example (Clark, 1978; Chiat, 1986; Oshima-takane, 1999). There is also a weak taboo on using pronouns in English to refer to parents in their presence (personal conversation with Stuart Campbell).

5.3 Person reference in Mandarin and English

Substantial differences in the pronominal systems of Mandarin and English are found in morphology, syntax, and in semantic/pragmatic functions. Mandarin personal pronoun forms are simpler than their English counterparts. There are no gender, animacy or case contrasts in Mandarin person pronoun forms. Furthermore, the form of the pronoun for each person consistently shares the Mandarin phonetic core, and information such as plurality and possessive case are encoded by a common morpheme (‘-men’ and ‘-de’, respectively) attached to the stem. The English pronominal paradigm, on the other hand, is more complex. For example, with scant exceptions, a common phonetic core cannot be extracted (Rispoli, 1994, 160). Syntactically, English declarative sentences have an obligatory subject and use coreferential pronouns, while Mandarin is a null subject (pro-drop) language and prefers zero anaphora (Li & Thompson, 1981). Due to pragmatic factors, Mandarin prefers nouns or ellipsis to pronouns. In child language, Chinese children usually refer to themselves by name. We can regard this usage of names for self-reference as one of several instances in which Chinese families differ from English families in permitting developmentally earlier ways of speaking to be continued for a longer time. To understand the less infrequent production of pronouns in Mandarin in
comparison to English, it is important to recognise that the cultural usage of Chinese personal reference is very different from that of Indo-European languages. In Chinese families, there are fewer pronouns in the input. For example, within the family, parents and siblings are addressed with kinship terms, such as ba4ba ‘father’, ma1ma ‘mother’, ge1ge ‘older brother’, di4di ‘younger brother’, jie2jie ‘older sister’ and mei4mei ‘younger sister’. These family members also often refer to themselves by these kinship terms where appropriate within the family. Children and siblings are usually addressed and referred to by their given name or the diminutive prefix xiao- plus nickname. Thus within the Chinese family, names and kinship terms often substitute for personal pronouns. Therefore, the pronominal input from each of the languages to which the child is exposed is quite different. Table 5.1 provides an overview of the first person pronoun systems in Mandarin and English, which are relevant to the current study.

Table 5.1 Overview of first person pronoun systems in Mandarin and English

<table>
<thead>
<tr>
<th>Pronoun</th>
<th>Mandarin</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1st person</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subject</td>
<td>wo3</td>
<td>I</td>
</tr>
<tr>
<td>Object</td>
<td>wo3</td>
<td>me</td>
</tr>
<tr>
<td>Possessive (Nominal)</td>
<td>wo3 de</td>
<td>my/mine</td>
</tr>
<tr>
<td><strong>1st person plural</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Subject</td>
<td>wo3men</td>
<td>we</td>
</tr>
<tr>
<td>Object</td>
<td>wo3men</td>
<td>us</td>
</tr>
<tr>
<td>Possessive (Nominal)</td>
<td>wo3men de</td>
<td>our/ours</td>
</tr>
</tbody>
</table>

In bilingual first language acquisition the child is learning to handle the differences between the two linguistic systems simultaneously, so it is interesting to investigate whether the intrinsic linguistic difficulties with person reference are compounded or otherwise for bilingual learners as opposed to monolingual learners. It may turn out that the simultaneous learning of two linguistic systems has a facilitating role in the transition to personal deixis. The significance of deixis in the acquisition process is that it provides a linguistic mechanism for expressing the domain of joint speaker-hearer attention. This mechanism suggests an extension to naming (Wales,
1986:426). But not much is known as to how this extension may occur. The discussion so far leads to five research questions, which will be addressed in this study:

1. What is the relationship between the development of the bilingual child’s NP system and the emergence of personal pronouns in the course of early word learning in the two languages?
2. How does a bilingual child move from exclusive use of nominal forms for self-reference towards achieving a breakthrough into pronouns?
3. Does the bilingual first language acquirer take the same route and strategy in each of his two languages in mapping the forms of personal pronouns to their functions within each language system?
4. What is the role of the child’s weaker language in the process of first person pronoun acquisition? Is there any effect of interdependent development in this area?
5. Given exposure to two language systems in different contexts, how and when does the child manage to differentiate the two pronominal systems (Mandarin and English)?

5.4 Results

The bilingual child’s emergence of person-reference experienced three developmental phases in terms of transition from nominal person reference to pronominal one.

Phase 1: Kinship terms and lack of self-reference (ages 1;7 to 2;0)

James started talking when he was 1;7. During the period from 1;7 to 2;2, his MLU (in words) in Mandarin lies between 1.54 and 1.65 while his English lies between 1.0 and 1.54. So both his languages are at one-word stage, which corresponds to Brown’s stage I (1973, 56). James’ early vocabulary development at phase 1 reveals that he has no lexicon in either Mandarin or English to refer to himself. The lexical
composition of his two languages is strikingly different in type and distribution. Table 5.2 summarizes his lexical system at that time. The categories used here are a slightly modified version of those in Gentner & Boroditsky (2001, 240). Thus, **nominal terms** are terms which refer to concrete objects and entities, including proper names and animate entities. **Relational terms** refer to spatial, temporal, or quantity relations e.g., ‘down’, ‘later’, ‘more’, or causal events e.g., ‘break’. **Modifiers** e.g., ‘pretty’, ‘big’, **sound** effects e.g., ‘yik-yik’, and words associated with social phrases and **routines** e.g., ‘bye-bye’, ‘thank-you’ complete the inventory.

From ages 1;7 to 2;0, James’ total productive vocabulary consisted of 96 types of identifiable targeted words. Of this vocabulary, 60.4% (58 items) are Mandarin words, 29.6% (38 items) are English words. Unidentified or indeterminate utterances were excluded from the count. A closer look at the nature of the child’s early lexicon in his two languages demonstrates that nominals make up 50% (17 types, 29 tokens) of his Mandarin words and 2.6% (1 type, 2 tokens) of his English words. At this stage, pronominal terms have not shown up in his early vocabulary, that is, in the first 60 words in each language (see Table 5.2).

**Table 5.2 Early vocabulary in Mandarin and English by type (ages 1;7 to 2;0)**

<table>
<thead>
<tr>
<th>Type</th>
<th>Mandarin</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-kinship</td>
<td>10(18)</td>
<td>1(2)</td>
</tr>
<tr>
<td>N-proper</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>N-animate</td>
<td>4(4)</td>
<td>0</td>
</tr>
<tr>
<td>N-collective</td>
<td>1(1)</td>
<td>0</td>
</tr>
<tr>
<td>N-object</td>
<td>2(6)</td>
<td>0</td>
</tr>
<tr>
<td>Demonstrative</td>
<td>1(2)</td>
<td>0</td>
</tr>
<tr>
<td>Relational terms</td>
<td>10(40)</td>
<td>4(6)</td>
</tr>
<tr>
<td>Modifiers</td>
<td>2(4)</td>
<td>0</td>
</tr>
<tr>
<td>Others</td>
<td>4(4)</td>
<td>0</td>
</tr>
<tr>
<td>Pronominals</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Sounds/Routines</td>
<td>24(65)</td>
<td>33(53)</td>
</tr>
<tr>
<td>Total Vocabulary</td>
<td>58(144)</td>
<td>38(60)</td>
</tr>
</tbody>
</table>

Total Nominals: 117
Note: Numbers in the table represent the types of words. Numbers in parentheses represent the tokens of words. N stands for nominal.

It seems that the early noun advantage (Gentner & Boroditsky, 2001), which is often reported in first language development, shows up in this bilingual child only in his Mandarin vocabulary while his English vocabulary has different types and a different proportional distribution. Table 5.3 provides a list of James’ Mandarin nominal composition in comparison to the list of his English nominal and relational terms.

Table 5.3 List of Mandarin Nominals vs. English Nominals and Relational Terms
(ages 1;7 to 2;0)

<table>
<thead>
<tr>
<th>Mandarin</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>N-kinship:</td>
<td></td>
</tr>
<tr>
<td>ba4ba 1</td>
<td>dad</td>
</tr>
<tr>
<td>di4di</td>
<td>younger brother</td>
</tr>
<tr>
<td>ma1ma 1</td>
<td>mum</td>
</tr>
<tr>
<td>mei4mei</td>
<td>younger sister</td>
</tr>
<tr>
<td>nai3nai</td>
<td>paternal grandma</td>
</tr>
<tr>
<td>wai4</td>
<td>maternal grandma</td>
</tr>
<tr>
<td>tai4</td>
<td>nanny</td>
</tr>
<tr>
<td>shu1shu</td>
<td>uncle</td>
</tr>
<tr>
<td>ye2ye</td>
<td>grandpa</td>
</tr>
<tr>
<td>vi2</td>
<td>auntie</td>
</tr>
<tr>
<td>N-animate:</td>
<td></td>
</tr>
<tr>
<td>niu3</td>
<td>cow</td>
</tr>
<tr>
<td>wo1wo 4</td>
<td>dog</td>
</tr>
<tr>
<td>ma3</td>
<td>horse</td>
</tr>
<tr>
<td>yang1</td>
<td>sheep</td>
</tr>
<tr>
<td>N-collective</td>
<td></td>
</tr>
<tr>
<td>jia1</td>
<td>home/family</td>
</tr>
<tr>
<td>N-object</td>
<td></td>
</tr>
<tr>
<td>PP</td>
<td>video</td>
</tr>
<tr>
<td>men2</td>
<td>door</td>
</tr>
<tr>
<td>English</td>
<td></td>
</tr>
<tr>
<td>N-Kinship</td>
<td></td>
</tr>
<tr>
<td>father</td>
<td></td>
</tr>
<tr>
<td>Relational terms</td>
<td></td>
</tr>
<tr>
<td>good</td>
<td></td>
</tr>
<tr>
<td>sorry</td>
<td></td>
</tr>
<tr>
<td>ok</td>
<td></td>
</tr>
</tbody>
</table>
In Mandarin, concrete nouns, especially names for kin relations, constitute about 59% of the total nominals. The child uses kinship terms to refer to other people, such as ‘Ma1ma. hao3’ (Mum. good). But he has not acquired the necessary lexicon to refer to his own name or nickname. No instance of self-referring occurs in any context in either of his two languages. Names for kin relations in Mandarin appear to serve as entry points to referential language. His English lexical system, on the other hand, consists of only 2.6% nominals in the first 50 words produced, compared to 97.3% for relational terms and sounds/routines. Actually there is only one kinship term which emerges in English: ‘father’ (two tokens), however it refers to a man in a book only. Other terms for animate and object entities are not produced. There is no record of any other person-referring expressions while the proportion of relational terms and formulaic phrases, as we have seen, is significantly high in his early English. There are no translation equivalents recorded in James’ very early vocabularies, that is, in Volterra and Taeschner’s Stage I (1978). It seems that from very early on, his English referential system develops somewhat differently from his Mandarin.

**Phase 2: Nominal reference to self and other persons  (ages 2;0 to 3;0;07)**

*English*

At ages 2;0 to 3;0;07, James’ Mandarin MLU (in words) is between 1.8 and 3.2. This falls within Brown’s Stages II and III. Over the same time period, his English MLU (in words) is between 1.4 and 1.5, which is within Brown’s Stage I. In phase 2, James’ total vocabulary expands to 347 words. Of these, 41 are English. Although his productive English lexicon is small, this does not hinder him from practising English to himself and to other English-speaking friends. James likes to sing English-language songs and chants and play English-language games by himself. Table 5.4 provides a list of his English vocabulary at this time. Formulaic chunks from songs, chants and games are not included in this list.
Table 5.4  English vocabulary at phase 2  (ages 2;0 - 3;0;07)

<table>
<thead>
<tr>
<th>Category</th>
<th>Count</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>N-location</td>
<td>1(1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>N-object</td>
<td>6(12)</td>
<td>horse</td>
<td>pig</td>
</tr>
<tr>
<td></td>
<td></td>
<td>sheep</td>
<td>dog</td>
</tr>
<tr>
<td></td>
<td></td>
<td>mins</td>
<td>toy</td>
</tr>
<tr>
<td>N-proper</td>
<td>5(11)</td>
<td>Joy,</td>
<td>Thomas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MacDonald[’s]</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Town Hall</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Woolworth[s]</td>
<td></td>
</tr>
<tr>
<td>R-quantity</td>
<td>2(7)</td>
<td>more</td>
<td>one</td>
</tr>
<tr>
<td>Relational</td>
<td>12(25)</td>
<td>naughty</td>
<td>pooh</td>
</tr>
<tr>
<td></td>
<td></td>
<td>yarm</td>
<td>yark</td>
</tr>
<tr>
<td></td>
<td></td>
<td>bi-kiss</td>
<td>bye</td>
</tr>
<tr>
<td></td>
<td></td>
<td>yeh</td>
<td>no</td>
</tr>
<tr>
<td></td>
<td></td>
<td>yes</td>
<td>cuddle</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>bi-cuddle</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>weewee</td>
</tr>
<tr>
<td>Sound routines:</td>
<td>5(8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Others:</td>
<td>10(17)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total vocabulary:</td>
<td>41(81)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Nominals:</td>
<td>12(24)</td>
<td>29%</td>
<td>29%</td>
</tr>
<tr>
<td>Total Relational Terms:</td>
<td>14(32)</td>
<td>34%</td>
<td>34%</td>
</tr>
</tbody>
</table>

Note: N stands for nominal and R for relational. Square bracket stands for unpronounced sound.

Compared to phase 1, English nominals at phase 2 have increased from 1 to a total of 12 types. Out of these, 2 are proper names for humans. He used ‘Joy’ to call his younger sister when he was 2;7 and ‘Thomas’ to refer to his friend. Kinship terms are not used. Names are not used in self-reference although he understands that his English name is James since outside the home context he is addressed as James, to which he responds. The pronominal terms have not emerged yet. Even in his third
year the proportion of nominals in his English does not reach 30%. However, if we put the relational terms and formulaic phrases together, these constitute more than 50% of his English lexical repertoire.

In sum, at phase 2 James starts to use English proper names to refer to a non-English speaker but does not yet refer to himself in English.

**Mandarin**

In terms of the development of person reference, James’ Mandarin presents a different picture. At phase 2, James’ Mandarin vocabulary increased from 58 to 306 words and self-referring forms emerged in his nominal content. The child’s nickname ‘Er2er’ (‘son-son’), which is used by his grandmother, emerged at 2;2 when he uttered ‘Er2er yao4’ (Son-son want) in a context where he wanted to have a lolly. ‘Er2er’ is mainly associated with his desire or need in a given context (52% of tokens). At 2;4, James started using his official Chinese name ‘Auchee’ to refer to himself while at the same time still using the nickname ‘Er2er’ to refer to himself. However, only 8% of its use is related to verb ‘yao’ (want). ‘Auchee’ is combined with various verbs and serves in three syntactic positions even in its early use, namely as subject, object and possessive. It seems that ‘Auchee’ is linked with broader activity and functions as request, descriptive state, claim of ownership and self-identification while the function of ‘Er2er’ is related more to intimate and personal desires and needs. The following examples illustrate this point. The following instances were recorded immediately after Er2er appeared at 2;2:

“Er2er ji1ji zhou3” (“Sonson self walk”/ I walk by myself. (2;2;26)

Note: “ji1ji”/self is James’ own pronunciation, the adult sound should be ‘zi4ji3’

“Er2er wo1wo” (“Sonson wo1wo”/My music cassette) (2;2;27)

“Er2er shui4jiao4” (“Sonson sleep”/I sleep) (2;3;16)

“Er2er yao4 deng1” (“Sonson want lamp”/I want the lamp) (2;3;23)

“Da4 yang4, er2er yao4, ma1ma mai3”

(“big sheep, sonson want, mum buy” (2;3;16)
I want big sheep, Mum buy it for me.

Two months later, at 2;4, James was recorded using ‘Auchee’ mainly in the following two situations:

(1) James used ‘Auchee’ to respond to adult questions which themselves used ‘Auchee’ to refer to James. Below is an example taken from an attempted transcription using CHILDES (MacWhinney, 1995):

@Participants: JMS James Child, YIN Ying Grandma
@Date: 16-APR-1996
@Situation: James comes back from a stroll with Dad
@Language: Mandarin

*YIN: Auchee gan4 shen1 me qu4 le?  
(“Auchee do what go P.P”/ What have Auchee done?)
*JMS: Auchee bu4 bu.
(“Auchee walkwalk”/ I have a walk. [bu4bu is a reduplicated coined intransitive verb taken from disyllabic word san4 bu4/ ‘have a stroll’, the standard answer should be ‘San4 bu4 le’/ Have a walk +Perfective Particle])

*YIN: Auchee ji4 ji2 zou3 de?  
(“Auchee self walk Q”/ Did Auchee walk by yourself?)
*JMS: Auchee zuo4 zai4 che1 li3, ba4 ba tui1 Auchee.
(“Auchee sit in pram adjunct, Dad push Auchee”/ Auchee sits inside the pram, Dad pushes Auchee. The mature answer should be ‘Wo3 zuo4 zai4 che1 li3, shi4 ba4 ba tui1 wo3 de’/ I sit inside the pram, it is Dad who pushes me.)

Another example occurred at 2;6;13, when James’ mother asked him: “Auchee, ji3 dian3 le?” – “Auchee, what time Particle”/Auchee, what’s time now?, James answered: “Auchee mei2 dai4 zhong1.” – “Auchee not wear clock” /I don’t wear watch. The mature answer should be “Wo3 mei2 dai4 biao3.” (I not wear watch – I don’t wear a watch). Although James misused zhong1 clock for biao3 watch, he could provide more information in response to an open question than mere ‘yes’ –or
‘no’ answers at Brown’s Stage III. However, his pronominal system has not yet emerged.

It seems that the use of ‘Auchee’ is partly triggered by adults mentioning or reminding of this proper name. However, the following examples present a different picture.

(2) In a spontaneous speaking situation, the proper name ‘Auchee’ is discerned to be associated with bad behaviour/experiences, demands/requests, descriptive state, claim of ownership, self esteem, own ability and self-identification. While ‘er2er’ at this stage is still widely used but seems to be confined to subjective kinds of uses, to show his emotions, sentiments and intimate needs, for example.

2;5;18:
“Auchee lin1”
(“Auchee hold” /Auchee can hold [the bucket])

2;6;15:
“Auchee zi4ji zou3”
(“Auchee self walk” /Auchee can walk by myself)
“Auchee zi4ji chi1”
(“Auchee self eat”/ Auchee can eat by myself)
“Auchee zi4ji e1shi3”
(“Auchee self poo-poo”/Auchee can poo-poo by myself)
“Auchee zi4ji weewee”
(“Auchee self weewee”/Auchee can weewee by myself)
“Auchee zi4ji mai3 nappy”
(“Auchee self buy nappy”/Auchee can buy nappy by myself)

2;7;02:
“Auchee he12 dao4 shui3”
(“Auchee drink not succeed water”
/Auchee cannot succeed in drinking water [for the bottle is covered with a cap])
“Auchee hai2 yao4 ping2guo3”
(“Auchee still more want apple”
/Auchee still want more apple [after having some apple])

The following conversation (also transcribed using CHILDES) serves as a good example of the less subjective, more objective contexts in which James used *Auchee* to refer to himself:

@Participants: JMS James Child, DAD Yun Father, MOM Ruying Mother
@Date: 1-JUL-1996
@Situation: James experienced a smack from his daddy
@Language: Mandarin

*DAD:* Auchee, jin1wan3 ba1ba gan4 ma2 da3 ni3?
(Auchee tonight daddy do Q smack you
– Auchee, why did daddy smack you tonight?)

*MOM:* Er2er, jin1wan3 ba1ba gan4 ma2 da3 ni3?
(Sonson tonight daddy do Q smack you
– Sonson, why did daddy smack you tonight?)

*JMS:* Auchee nao4. Auchee bu4 teng1 hua4,  
(Auchee make trouble. Auchee not listen reason,

ba4ba ba3 Auchee guan1
Daddy TP Auchee shut)

zai4 hei2 wo1zi li3 le. Mei2you3 deng1.
(in dark room adjunct P. Not have light )

/Auchee made trouble. [Since] Auchee did not listen to the reason,  
Daddy shut Auchee in a dark room. There was not light [in the room].)

In James’ reply in the above exchange, he chose to use ‘Auchee’ after being supplied with two of his proper names ‘Auchee’ and ‘Er2er’ by adults. He could have modeled his mother’s previous mention of his nickname ‘Er2er’, but he decided to
use ‘Auchee’ to report on his bad behaviour and bad experience. This may indicate that the child has begun to make a distinction between his social role as ‘Auchee’ and his family role as ‘Er2er’.

At this time, his use of ‘Er2er’ is still mainly associated with emotions, likes or dislikes, and personal needs. For instance, at 2;6;01, James patted his tummy and said: “Er2er da4 bao3” (“Sonson big full”/Sonson is very full). The standard adult version would be “Wo3 hen3 bao3 le” – I very full + Perfective P. This expression shows his pride in having a big full tummy. Another instance of his use of “Er2er” at around this time occurred when he pointed to the medical centre and uttered: “Er2er da3 zheng1.” – “Sonson have injection”. What he evidently intended to express is, in adult Mandarin: “Er2er da3 zheng1 de di4fang1” (“Sonson have injection’s place”/This is the place where I had my injection). While the place ‘de di4fang1’ is referred to with his body language via a pointing gesture, he omits this head noun phrase in his utterance. His focus is on the personal experience of painful shots so he chooses to use the emotional self-referent ‘Er2er’ (Sonson) and to express the relative clause in a declarative way ‘Sonson have injection’. When he wants to show help and affection, he chooses to use ‘Er2er’ (Sonson). For example, at 2;6;25, James saw Mum boiling some water and knew Mum was going to have tea. He said: “Ma1ma he1 cha2ye4, er2er na4.” (“Mum drink tea, sonson take”/Mum [want] to drink tea, sonson takes [the tea leaves out]).

The differentiation in proper name usage between ‘Auchee’ and ‘Er2er’ is indicative of the child’s increasing ability to express linguistically his own attitudinal commitment or emotion by means of the choices in self-reference. Generally, both ‘Auchee’ and ‘Er2er’, as self-referential terms, can be used as carriers of individual attitude and emotion. It seems that ‘Er2er’ (sonson) carries implications of personal –intimacy. The connotations in ‘Er2er’ of positive attitudes and emotions imply attitudinal or emotional closeness. ‘Auchee’, on the other hand, expresses a non-personal intimacy which indicates a degree of attitudinal and emotional distancing. This is an interesting finding which deserves further investigation because there is no report of such kind of function specification of two self-names in child language literature as far as I know.
Table 5.5 Summary of the form-function mapping of self-referential terms ‘Er2er’ and ‘Auchee’ (2;0 to 3;0;01)

<table>
<thead>
<tr>
<th>Form</th>
<th>Age range</th>
<th>Referent</th>
<th>Function</th>
<th>Example (gloss)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Er2er</strong> (son-son) [23]</td>
<td>2;2 – 2;11;17</td>
<td>Self as speaker [21] Self as possessor [2]</td>
<td>Volitional (needs/desire)</td>
<td>Yao4 (want) [12] 52%</td>
</tr>
</tbody>
</table>

Note: Words in parentheses represent the English gloss. Numbers in square brackets represent the number of tokens.

As for his other person-referring expressions, James refers to other persons mainly using Chinese kinship terms, in both addressee and non-participant contexts. Kinship terms used frequently by James in phase 2 include *Ma1ma* (mum), *Ba4ba* (dad), *Mei4mei* (sister), *Di4di* (brother), *Po2* (grandma), *Wai4gong* (grandpa), *Yi2* (auntie), and *Titi* (friend). In regard to his personal pronoun development, the Mandarin pronoun forms ‘wo3’ (I/me/my), ‘ni3’ (you) and ‘ta1’ (it/he/she) appear only sporadically at phase 2 and are produced in an imitating way, as in greeting routines, for example.

In sum, phase 2 represents an important stage in James’ development of self-reference. At phase 2, James starts to use proper names such as his nickname ‘Er2er’ and his Chinese name ‘Auchee’ to refer to himself. He uses kinship terms to refer to others; only later does he use linguistic forms other than names to refer to himself.

**Phase 3: Emergence of first person pronominal reference alongside other self-referential expressions (3;0;07 to 3;2;09 to 4;0)**
This section describes James’ multi-word period in Mandarin and English during which first person pronoun reference emerges in both languages. In Mandarin, James’ syntactic combinations grow steadily, in contrast to his English. At age 3;0;07, James exhibited an average MLU (in words) of 3.20, indicating that he was in Brown’s Stage IV. Three months later, at 3;3, his MLU (in words) had risen to 4.5, placing him at Brown’s Stage V. At 4;0, his MLU (in words) reached 5.5, that is, beyond Stage V. A noteworthy characteristic of James’ multi-word combinations at phase 3 is that most of them build on his previous two-word types, with the incorporation of an additional element. For example, the two-word combination noun + modifier was then lengthened with an extra element.

In English, James went through a period when he only produced single word utterance or formulaic utterances. This lasted from shortly after age 1;7 until 3;7;01. At age 3;0;07, James exhibited an average MLU (in words) of 1.4, indicating he was in Brown’s early Stage I. In the course of the following three months, his MLU (in words) remained the same. But three months later, at 3;7;01, his MLU (in words) rose to 3.0, indicating that he had moved to Brown’s Stage II. After that, James’ MLU (in words) in English was never less than 2.0. In the course of the following three months his MLU (in words) rose to 3.5, indicating that he had moved to Brown’s Stage III. At 4;0, his MLU (in words) was 4.0, placing him at Brown’s Stage V. In his English syntactic development at phase 2, James produced unanalysed multi-word combinations which he had originally learned as unanalysed units, rather than producing more relational terms and formulaic phrases. At phase 3, his nominal lexicon expanded to include three more proper names and more kinship terms, compared to phase 2. His nominal productive usage covered a similar range of kinship terms as his Mandarin, including Mummy, Daddy, Grandma, Baby and Joy. Almost every Mandarin kinship term he acquired at phase 1 has an equivalent in his English at phase 3. His multi-word combinations, however, appeared not to be built up from individual items already present in his single word vocabulary. His person pronoun reference in English illustrates this point, as explained below.
Figure 5.1 shows that from ages 2;2 to 3;0;07 James used nominal forms of self-reference like his nickname and proper name when he was a speaker. He broke through into nominal expressions of self-reference with first person pronoun ‘wo3’ at age 3;0;07 when he suddenly uttered “Wo3 chou4” (“I stink”) at a time he urgently needed a change of nappy. Curiously, perhaps, his first pronoun emerged out of an emergency situation. From the onset of the first person pronoun wo3, it was used productively and was combined freely with various verbs in a range of constructions. Table 5.6 presents the form-function mapping of wo3 at phase 3.

Even after wo3 emerged, nominal forms of self-reference ‘Er2er’ and ‘Auchee’ are not supplanted. In the period from 3;0;07 to d 3;8;22, all three forms co-existed. However, there is some fluctuation in frequency of usage of these three forms. For instance, ‘Er2er’ was not used for 3 months (2;11;17 – 3;2;16) while ‘Auchee’ was intensively used. ‘Auchee’ dropped out of James’ usage one month earlier (at 3;8;22) than ‘Er2er’ (at 3;9;08). ‘Wo3’ was finally established as a sole form for self-reference after 3;9;08. Some examples of the process of the emergence and acquisition of ‘Wo3’ as a speaker-referential term are given in Table 5.6.
Figure 5.1: Self-referring and emergence of word 1,031 (1:07:00 – 1:11:14)
Table 5.6 The Emergence of Mandarin Wo3 (1PS)

<table>
<thead>
<tr>
<th>Age</th>
<th>Example</th>
<th>Gloss</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>3;0;07</td>
<td>“Wo3 chou4”</td>
<td>I stink</td>
<td>Speaker</td>
</tr>
<tr>
<td>3;1;01</td>
<td>R: “Shi4 Auchee ma?” &lt;br&gt;“Wo3 shi4.”</td>
<td>R: “Is Auchee?”  &lt;br&gt;A: “I am.”</td>
<td>Speaker</td>
</tr>
<tr>
<td>3;1;11</td>
<td>“Wo3 wan2 yi1 xia4”</td>
<td>I play a while</td>
<td>Speaker</td>
</tr>
<tr>
<td>3;1;16</td>
<td>“Wo3 bu2 hui4 chuan1”</td>
<td>I don’t know how to put on</td>
<td>Speaker</td>
</tr>
</tbody>
</table>

Note: 1PS stands for first person pronoun singular form.

English

Table 5.7 illustrates the emergence of English first person pronoun forms. Nearly every form experienced a period of formulaic usage. All these forms have their roots in unanalysed phrases. This seems to support Pine and Lieven’s (1993, 567) finding that the acquisition of unanalysed phrases facilitates the transition from single- to multi-word speech. For example, as mentioned in Chapter 4, the first appearance of ‘my’ was situated in the pattern ‘My name is X’. Such an example reflects a process whereby a phrase is initially segmented as a unit, but is subsequently reanalysed as a result of regularities perceived by the child in other similar words or phrases, resulting in a flexible, lexically defined formula which can be extended to similar situations.
Table 5.7 The Emergence of English Mine, I, Me and My

<table>
<thead>
<tr>
<th>1 PS^1</th>
<th>Age</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>mine</td>
<td>3;0;14</td>
<td>Y: “Don’t play”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A: “mine. mine”</td>
</tr>
<tr>
<td></td>
<td>3;7;03</td>
<td>A: “It’s-mine. lolly.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>“It’s-mine. Don’t touch.”</td>
</tr>
<tr>
<td></td>
<td>4;0;15</td>
<td>A: “This is not mine. Mine in garage”</td>
</tr>
<tr>
<td>I</td>
<td>3;4;22</td>
<td>A: “how-I-wanna what-you-are…”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A: “I’m a-li-teapot…”</td>
</tr>
<tr>
<td></td>
<td>3;6;01</td>
<td>A: “I want toilet”</td>
</tr>
<tr>
<td>me</td>
<td>3;5;20</td>
<td>A: “Scuse- me. Scuse- me ”</td>
</tr>
<tr>
<td></td>
<td>3;6;25</td>
<td>A: “Mine, don’t touch-me”. (his lolly)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>R: “You should say ‘don’t touch it’”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A: “don’t touch”.</td>
</tr>
<tr>
<td>my</td>
<td>3;6;09</td>
<td>A: “What’s your name? My name is James”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z: “What’s mei4mei’s name?”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A: “My name is Joy.”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z: “What’s daddy’s name?”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A: “My name is Zhang Yun”.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Z: “What’s mum’s name?”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A: “My name is mummy.”</td>
</tr>
</tbody>
</table>

*1PS stands for first person pronoun singular while A stands for James.

James used English kinship terms and proper names to refer to other persons other than himself, e.g., Mummy, Daddy, Grandma, Baby, and Joy. This is totally different from his approach to Mandarin self-reference.

In sum, James’ expression of self-reference begins with nominal forms in Mandarin, but with a pronoun in English. He never uses his own names to refer to himself in English although he understood his English name James by the age of 2;0.

^1 Note: 1PS stands for first person pronoun singular form.
5.5 Discussion

By tracing the development of the bilingual child's early lexical systems, it seems that the early noun advantage (Gentner & Boroditsky, 2001) does show up in this bilingual child but only in Mandarin, while his English vocabulary displays significantly different word types and a different proportional distribution.

An early predominance of names for objects and individuals and a later increase in the proportion of relational terms is well reported for the monolingual acquisition of English as a first language (Woodward & Markman, 1989). Nouns predominate also in early comprehension, as well as in production (e.g., Macnamara, 1972; Nelson, 1973). A recent study by Gentner and Boroditsky (2001) on a division of dominance continuum concludes that the claim of an early noun advantage holds up well cross-linguistically.

The review by Genter and Boroditsky (2001) indicates that there is a strong early noun advantage even in languages with verb-friendly input characteristics such as Mandarin (see Tardif, Shatz, & Naigles, 1997). The present Mandarin-English bilingual child study suggests that James' stronger language, Mandarin, develops like a normal first language in monolingual children with an early noun advantage. Concrete nouns, especially names for kin, constitute 30% of the total early vocabulary. Such kinship terms appear to serve as entry-points to referential language. However, as noted above, this noun advantage phenomenon does not exist in his weaker language, English.

His English lexical system consists of only 2.6% nominals in the first 50 words produced. Even in the third year the nominal share in English does not reach 30%. However, if we group together the relational terms and formulaic phrases, these constitute more than 50% of his English lexical repertoire. This 'division of labour' between the two language systems indicates two principal routes in James' early lexical development: one follows referential words (this happens with Mandarin); the other follows context-bound and social-pragmatic words (English).
indicates that the child may utilize two different internal representations when he first begins to acquire words in each of the two languages. These may be grouped as "prototypes" and "event representations" following Barrett (1989, 1995).

James’ MLU in the two languages and the content of his lexicon in each language suggests that English is his weaker language over the time interval from 1;7 to 3;7. This coincides with a crucial time in his development of personal pronouns in each language. How does the weak language, then, achieve entry into pronominal reference? Is there any interdependent relationship between the two languages in this area?

At 2;2, the child starts referring to himself in Mandarin by his own nickname and refers to other persons by their kin terms. However, at that time, the child has no proper names or kinship nouns as resources to refer to other persons in English. How does the child start referring to other persons in English? Which approach or strategy does he adopt?

As documented in L1 literature, the first person singular pronoun emerges in Chinese children sometimes before 2;0 with appropriate use by 2;8 - 2;10 (Erbaugh, 1992; Xu & Min, 1992). Parallel pronominal forms emerge, in English L1 children, at about 1;6 - 2;0 (Brown, 1973) with mastery by 2;10 (Oshima-Takane, 1992). The similarities in the development of personal pronouns in Mandarin and English (monolingual) L1 acquisition are remarkable: time and order of emergence, and even the route to the acquisition of personal pronouns. Clearly, the formally simpler Mandarin pronominal system does not appear to accelerate, or delay, pronoun emergence.

However, James' pronominal development appears to follow clearly distinct routes in his two languages. In Mandarin, he at first refers to himself using his nickname and own name, and then uses these together with the first person pronoun singular form wo3. The present study shows that in bilingual L1 acquisition, first and second person pronominal reference can emerge significantly (about one year) later than monolingual children. Furthermore, while the tendency for children to use their own
names or nicknames in their first references to self is well documented for European languages (Tanz, 1980; Chiat, 1986; Budwig, 1989; Deutsch, 2001), and also reported for Chinese (Tseng, 1987; Xu & Min, 1992) and even in a bilingual Norwegian and English child (Siri) (Lanza, 1997), in my data name use in self-reference appears in Mandarin but not in English. Moreover, the co-existence of two kinds of name uses in self-reference which serve different functions in usage has never been reported in either the monolingual or the bilingual literature. On the other hand, in English James appears to skip the stage of using nominals to refer to himself and other persons, which is one of the characteristics of early monolingual English speech (Radford, 1986, 20). At the emergence of self-reference, James cuts directly, and categorically, to the use of English personal pronouns (mine, me, I, my) without errors. For instance, with regard to pronoun case, there is not a single instance in James’ English data of an accusative pronoun being inappropriately used as the sentence subject. James demonstrates consistent, adult-like case-marking contrasts with "I - me - mine".

Thus it seems that this Mandarin-English bilingual child adopts a different approach or strategy to the personal reference system in each language: an analytic (bottom-up) approach in Mandarin but a synthetic (top-down) approach in English.

### 5.6 Concluding Remarks

The systematic analysis in this chapter of developmental routes and changes in the contextual use of pronouns and proper names reveals how the child who, initially, has difficulty in using personal pronouns eventually masters their correct usage. The analysis may provide insights into the theoretical understanding of the mechanisms by which children learn personal pronouns. It also contributes to the understanding of the role of the weaker language for bilingual children. For instance, the bilingual child might attempt a different strategy to utilize the limited resources available to achieve a target-like production in the weaker language.
It seems that the formal simplicity of the Mandarin pronominal system does not accelerate the emergence of pronouns while the more complex English pronominal forms do not hinder acquisition. Interdependent developmental effects are also not evident. The error-free development of the English pronoun forms, such as the case distinctions between *mine, me, my,* and *I,* seems to support Meisel’s hypothesis (1990, 18): that bilinguals tend to focus more on formal aspects of language and are therefore able to acquire certain grammatical constructions faster and with fewer errors than many or most monolinguals. In addition, individual differences in approaching certain aspects of language may play a role as well, such that children who pay more attention to forms and accuracy will make fewer formal errors in production.

The data also shows that the child seemed to acquire self-reference early, and then pronominal systems in a language-dependent manner from early production (at 2;0) onwards. He appeared to follow an analytic (bottom-up) route for Mandarin and a synthetic (top-down) route for his English pronoun development. Further, the child’s preferred usage of proper names to refer to persons in Mandarin indicates that the potential effect of input patterns on the child’s language use: after all, Mandarin and English use different socialization practices for referring to the child and to family members.

Thus I believe that this research sheds some light on how the child builds up language representations for the two language systems. It also exemplifies the complexity of a child’s early development of form-function mapping for two languages when growing up in a bilingual context.
6 The Acquisition of Personal Pronouns  
(Mandarin-English)

6.1 Introduction

In this chapter, the developing role of personal pronouns in child language will be discussed. Bresnan (2001, 4) proposes that what universally characterizes a pronoun are its referential role and functions, not its phrase structure category.

Pronouns can be identified crosslinguistically by their semantic, information-structural, and morphosyntactic properties. They are generally definable as basic anaphoric expressions characterized by systematically shifting reference to persons within the utterance context.

The acquisition of personal pronouns entails control of a range of pragmatic, semantic, syntactic and morphological distinctions (Chiat, 1986). Every pronominal form represents a convergence of such distinctions. In acquiring pronouns, the child must isolate each pronominal form, establish that there are conditions under which it is appropriate to identify individuals in terms of their speech role (speaker, addressee and non-participant), and match each isolated pronominal form to the specific speech role it designates. The child must also determine the syntactic distribution of the form, and any further semantic features which it entails. Furthermore, successful pronoun use involves not only the choice of pronoun forms, but also considerations of discourse context. In addition, although the choice of pronoun forms is universal (it is determined by speech roles), how native speakers manage the reference is language-specific. For instance, unlike English, which uses lexical pronouns extensively in managing reference and uses null pronouns in highly restricted circumstances, Mandarin prefers nouns, names, or ellipsis to pronouns. A successful bilingual child must acquire the knowledge and abilities to make rapid decisions about the form of expressions used to refer to entities within the domain of the
ongoing discourse in two language systems. However, it is not clear just how much of the interpersonal situation the child is aware of, how children come to understand their own speech roles, or what part this awareness plays in their acquisition of language. Besides, it is unclear when and how they reach each stage of pronominal development, or what resources they bring to the task. The process of bilingual children’s pronominal development in production is little understood. This study will make a contribution to this area.

Mandarin and English are considered to be two typologically very distinct languages. For a bilingual child, there is one more hurdle to overcome, that is, the child, as well as having to develop a pronominal system in two languages, also has to differentiate the two pronominal systems in terms of their language-specific usages. The present study of pronominal development in a bilingual child could offer a systematic comparative analysis to distinguish developmental mechanisms from language specific peculiarities, and monolingual Mandarin or English children’s pronominal development from Mandarin–English bilingual pronominal development. However, this study will examine only certain aspects of this complex process for a Mandarin-English bilingual child. It will explore the route which the child takes to map forms of personal pronouns to their functions within two language systems. The following research questions will be examined:

1. How and when do Mandarin pronominal forms emerge in productive use, for a Mandarin-English bilingual child?
2. How and when do English pronominal forms emerge in productive use, for a Mandarin-English bilingual child?
3. How does a bilingual child work out the semantic and pragmatic functions of pronouns in the two pronominal systems?
4. Are there any systematic errors in the course of development of the two pronominal systems?
5. Does a bilingual child take the same route as a monolingual child to map the forms of personal pronouns to their functions within the two language systems?
6. How and when does a bilingual child manage to differentiate the two different pronominal systems in Mandarin and English on the basis of their exposure to two pronominal systems in context?

First, the semantic and pragmatic properties of pronouns will be examined since they have been the basis for predictions about pronoun development and have directed investigations into children’s pronouns in previous research. Second, the typological features of Chinese/Mandarin which are relevant for the study will be outlined. Third, results of the findings from studies of children’s pronoun development will be reviewed. Fourth, evidence from James’ pronoun development will be presented. The chapter will conclude with a summary of the present findings and their implications.

### 6.1.1 Features of pronouns

In acquisition, the difficulty which personal pronouns pose to the child lies in their nature as deictic terms. Deictic terms are exceptional expressions in language: their reference is relative to the speaker’s point of view, in contrast to the majority of referring expressions, whose reference is speaker-independent. De Villiers and de Villiers (1974) found that comprehension comes later for deictic terms which require the addressee to shift to the speaker’s perspective (including my-your, as well as this-that, here-there) than for those which assume the listener’s perspective (in front of-behind). In order to use these pronouns correctly, the child must understand the relationship between pronouns and speech roles.

### 6.1.2 Pronouns and their deictic properties

The term ‘deixis’ comes from a classical Greek word meaning ‘pointing’, or ‘indicating’, and has become a cover-term in linguistics for a heterogeneous group of usually grammatical items which ‘relate utterances to the spatio-temporal coordinates of the act of utterance’ (Lyons, 1977, 636). That is, there are various aspects of utterances that are fully explicable only by a consideration of their spatial
or temporal contexts. That is, they are all expressions which serve to direct the hearer’s attention to spatial or temporal aspects of the situation of utterance which are often critical for its appropriate interpretation (Wales, 1986, 401). In other words, to interpret pronouns and other deictic elements, the interpreter needs not only context-independent semantic information but also information which is contingent on an actual (or construed) context. The aspect of the situation/speech event which is critical in this regard is, typically, information about the speaker, but in any case this information must be such as to enable decisions to be made about person and/or place in relation to the utterance. These expressions which we group as ‘deictic’ introduce an explicitly subjective orientation into linguistic classification. They draw attention to the fact that language is acquired and used by people in real situations (Wales, 1986, 401).

Deixis can be realised in several ways: by tense, by case marking, by referring back to a previous utterance, or by referring to the understood knowledge shared by the speaker and hearer. Huxley (1970, 143) states that pronouns express the notion of person, which is part of the notion of deixis. Persons, represented either by nouns or pronouns, must have deictic or locating features with respect to the utterance. So, for instance, looked at purely from a grammatical point of view, I, you and he are personal pronouns, and they form a closed class. The appropriate choice of one of them in an utterance, however, depends on the assessment by the speaker of information other than the appropriate structural position for the items. He/she has to decide among other features what the relevant speech roles are in order to choose the correct usage of each forms, e.g. I, the speaker; you, the listener; he, the person spoken of. Adults have an implicit knowledge of the system of pronouns, and consequently their thinking about it may be too simplistic and general. The child does not. He/she is only presented with individual instances of use in particular linguistic and nonlinguistic environments, and from these he/she must draw out the complexities of non-egocentric references, distributional classes and classes such as gender, case and number in English, among others. It is therefore quite difficult to imagine how the child begins to determine the connecting thread among all these circumstances to discover the particular conditions of referential use, and how he/she encodes this knowledge. Though mostly ‘small’ terms, their use, like most things in
language when properly analysed, requires extensive and subtle analysis by the child. In the present study, under personal pronouns, I will examine the set of personal pronouns used by James in his personal pronoun development of English and Mandarin, such as for speaker/hearer and third-person reference (I/me, you, he/she, etc.), the possessive determiners (my/your/his, etc. followed by a noun), and the possessive pronominals (mine/yours/his, etc.) to see how the child works out the conditions of their usage in a conversational context.

Pronouns designate speech roles in a conversational context. Speaker, addressee and non-participant (one that is neither speaker nor addressee) are the core pronominal concepts. The role of speaker, encoded in the 1st person pronominal forms wo3 (I/me), wo3 de (my/mine) in Mandarin, I, me, my, mine in English, is distinguished from the role of addressee, encoded in the 2nd person forms ni3 (you), ni3-men (you-plural), ni3-de (your/yours), ni3men-de (your/yours-plural) in Mandarin, you, your, yours in English. Both are distinguished from the 3rd person forms ta1 (he/she/it, him/her/it), ta1-de (his/her/its), ta1-men (they/them), talmen-de (their/theiris) in Mandarin, he, him, his; she, her, hers; it, its in English, which identify non-participants and which are distinguished from each other in terms of gender or animacy.

Plural pronouns encode combinations of these speech roles. In Mandarin, men is the generic suffix to be attached to any form of the singular pronouns to form plural forms. The 1st person plural forms wo3men (we/us), wo3men de (our/ours) in Mandarin, we, us, our, ours identify any combination of individuals which includes the speaker. The 3rd person plural forms ta1men (they/them), talmen de (their/theiris) in Mandarin, they, them, their, theirs in English identify any combination which includes non-participants only, i.e. includes neither speaker nor addressee. As Huxley (1970, 146) notes, for the three ‘persons’ of the plural: we, you, they, the pattern of meaning is also more complicated than is shown in grammars of many languages. We is not I and I, something is added to I; this addition can be either you; or one of he, she, it or they. This gives two possible types of we: the inclusive [+you] and the exclusive [+he, she, it, they]. In either case since I is the invariant element and refers to the originator of the discourse, it is also the
predominant element. The plural of you is also complicated. You plural can mean you who are here + you (singular or plural) who are also here or you who are here + (some other) not present person or persons. They is left as the only pronoun which just increases the number of he, she, or it. There have been various analyses of these pronominal distinctions in terms of semantic features (e.g. Postal, 1966; Ingram, 1971; Li & Thompson, 1976). A number of developmental studies have looked to such analyses in English as well (e.g. Huxley, 1970; Waryas, 1973; Deutsch & Pechmann, 1978).

6.1.3 Pragmatic constraints on the use of pronouns in Mandarin and English

Chiat (1986, 340) states that pragmatic constraints require that every reference a speaker makes is specified according to its role in the speech act. Where the referent is the speaker or addressee, or includes one of these, the reference is normally pronominal. There are constraints on the circumstances in which a speaker to use non-pronominal forms in reference to herself or her addressee, i.e. to use proper names or other nominal expressions such as John or the man who is speaking. In Dutch, a mother might ask her child: ‘mama doen?’/ ‘mommy do?’, meaning: ‘shall I do it?/ do you want me to do it?’. English, French, Spanish and German have similar forms (information provided by De Houwer). Mandarin shares the similar expression. Nominal references to self or addressee are also used to achieve certain pragmatic effects, such as taking a non-speaker’s perspective. In certain adult uses of pronouns a 2nd or 3rd person’s perspective is taken to act on speech roles. Examples of these taken from Chiat (1986, 354) are:

- You’re an idiot (referring to self from 2nd person perspective)
- I shouldn’t blame yourself (where the 2nd person reflexive has a 1st person antecedent, with the effect of
References to non-participants, on the other hand, need not be pronominal. They can take the form of a fully specified NP (e.g. *John, the boys in the corner*) or a pronoun standing for that NP (e.g. *he, they*), depending on the linguistic and extralinguistic context. Thus, 3rd person references are always marked as non-speaker and non-addressee, but this does not depend on their being pronominal (Bruner, 1975). Besides, Mandarin has its speciality, that is, the acceptance of null pronouns as reference in conversation as has been discussed in chapter 5.

As Lyons (1977, 637) notes, the fact that deictic structures exist in languages at all ‘can only be explained on the assumption that they have developed for communication in face-to-face interaction’. However, there are factors affecting the child’s ability to be aware of the reciprocity of speech roles in the dialogue – that s/he occupies speech roles that can be exchanged with other people. Benveniste (1971) has made a psychologically interesting suggestion about the development of reference, that is, a grasp of reciprocal roles in discourse is the essential prerequisite for deixis of person, place, and time (1971, 217-8). Research shows that children’s understanding of the reversibility of roles, i.e. a reciprocal concept, emerges in action well before it is ever used in formal language (Bruner, 1975; Argyle & Ingham, 1972). This suggests that children do not simply map cognitive concepts of persons onto linguistic concepts of them (see among other Slobin, 1973; Cromer, 1974). Are there any difficulties involved for children in acquiring the linguistic means to refer to the self and other persons in terms of speech roles?

### 6.2 Factors affecting acquisition
Two major factors in the monolingual literature have been proposed as difficulties for children in the acquisition of personal pronouns. First is the semantic concept of the speech roles encoded by pronouns and the shifting point of reference with which pronouns are used. While using pronouns, the child has to shift reference for each speech role s/he occupies. That is, the pairing of lexical form and referent is different for each speech role the child takes on. Determining the referent of a pronoun (in comprehension) or selecting the appropriate pronoun (in production) requires shifting the relationship between referent and pronoun on the basis of who is speaking. The young child’s cognitive egocentrism may preclude this shift (Loveland, 1984). Moreover, the model for correct usage of these pronouns is not directly provided in speech addressed to children (Oshima-Takane, 1985; 1988; 1992; 1999). That is, when a mother speaks to a child, she uses I or me to refer to herself and you to refer to the child if she wants to use pronouns. But when the child speaks, the child must reverse the pronouns. Only in speech not addressed to the child, but overheard, is it apparent that second person pronouns can refer to someone other than the child, and the first and second person pronouns are used reciprocally, with alternating reference based on who is speaking. Oshima-Takane (1992, 112) states that speech addressed to another person plays an important part in children’s discovering the relationship between pronouns and speech roles. Observation of deictic terms such as pronouns which are addressed to the child may not constitute an adequate dataset for easy acquisition.

Input factors may also explain the pronoun-reversing pattern of autistic children (Ricks & Wing, 1975, 207) and the oft-noted pattern of more reversal errors for second person pronouns than first-person forms. Since each of the child’s conversational partners uses first person pronouns in self-reference, the child is frequently exposed to the shifting reference of first person forms. In contrast, unless the child hears and attends to overheard speech, second person pronouns always seem to refer to the child, so there is less evidence for shifting reference. That is why a child might hypothesize that you is another name for self as Clark (1978) and Charney (1980) have noticed. In addition, words whose reference shifts deictically are exceptional among referring expressions, and are not explicitly marked in some languages like English and Mandarin. Thus substantial learning is necessary to
determine which words are deictic (Bellugi & Klima, 1982). Therefore semantic confusion of pronoun reversals does occur in the course of acquisition of some children, although a majority of normally developing children master the correct usage of these pronouns such as first, second and third persons with few errors. This explanation of ‘semantic confusion’ is primarily a competence-based one: pronoun reversals stem from the child’s misunderstanding of the grammatical and semantic rules governing pronoun use. But cases where children consistently reverse pronouns, such as Oshima-Takane’s subject (1992) who consistently reversed pronouns in both comprehension and production over a period of several months, seem relatively rare. More typical is an intermittent, low frequency pattern of errors, suggesting that performance factors may also be at play.

The second factor stems from the fact that for normally developing children, reversals are usually outnumbered by correct usage of pronouns. Dale & Crain-Thoreson (1993) proposed a processing complexity hypothesis. Because deictic shifting is a semantic/pragmatic operation that must be performed during discourse, certain discourse contexts may place a child at higher risk for reversal errors. Thus many pronoun reversal errors may be due to performance limitations, rather than to incorrect semantic hypotheses. According to the processing complexity hypothesis, when sentence production occurs under conditions of high linguistic or cognitive complexity, deictic shifting may simply be omitted, for performance-related rather than competence-related reasons. Few studies have examined the role of context in the occurrence of pronoun errors. It is the examination of the contexts of reversal functionally, semantically and syntactically which leads to the formulation of the processing complexity hypothesis.

However, conceptually, pronoun reversals need not all result from the same process. Reversals produced by autistic children appear to be the result of heavy use of imitation, which in turn reflects an inability to handle reciprocal interaction (Bettelheim, 1967; Fay, 1979). The pronoun reversals of blind children may be primarily due to cognitive rather than semantic factors since the blindness presents an obstacle to the development of a sense of self, which hinders understanding of deictic terms (Fraiberg, 1977). Similarly, reversals may be due to different
processes at different stages of development in normal children’s acquisition of pronouns.

6.3 Order of acquisition and pronoun reversal

Research in monolingual children’s acquisition of personal pronouns has spanned more than nine decades from Cooley (1908), through Huxley (1970) to Oshima-Takane (1999). This chapter will not be concerned with certain morpho-syntactic aspects of the pronoun system, such as the emergence of case, gender and possessive distinctions (Huxley, 1970; Chiat 1981), or anaphora (C. Chomsky 1969; Maratsos 1973; Lust, Loveland and Kornet 1980; Lust, 1981; Tyler, 1983; Reinhart, 1986; Hyams, and Sigurjonsdottir, 1990; McDaniel, and Cairns & Hsu, 1990; Rispoli 1994). Instead, it will consider only certain aspects of children’s pronominal developmental process, namely, the order of emergence and acquisition of personal pronouns, the systematic errors such as pronoun reversal which children make in the comprehension and production of pronouns and the route which children take to develop the set of speech role categories encoded by personal pronouns in monolingual first language development. The studies reviewed will include first language development in English and Mandarin and bilingual first language development whenever possible.

6.3.1 Monolingual first language development: English and other languages

6.3.1.1 Order of acquisition

Several researchers have investigated the rules that children develop in the acquisition of the different personal pronouns by examining the order of emergence of their comprehension and production. Semantic analysis of pronouns and their shifting reference properties has led to the prediction that children will acquire personal pronouns in the order 1st person, 2nd person, then 3rd person (Clark, 1978; Deutsch and Pechmann, 1978). But this prediction is not always borne out by the
naturalistic data in the first language study of the personal pronouns. Diary studies have generally found that English-speaking children employ the 1st person pronoun \textit{I/me} earlier than other personal pronouns (Huxley 1970; Clark 1978). The 2nd person pronoun follows close on its tail. The order of emergence of the remaining pronouns is less well established: \textit{he, she, we, they} are not clearly ordered with respect to one another. Brown (1973) found that the pronouns produced by the three Harvard children at Stage I (MLU 1.75, age about 1;6-2;0) were \textit{I, you, it} and \textit{my}. Brown also points out that these pronouns tended to occur in specific contexts, which matched the distribution of corresponding NPs in the child’s language, for example \textit{it} tended to appear in the same position as inanimate object NPs. Similarly, Angiolillo and Goldin-Meadow (1982) note that \textit{it} tends to occur in post-verbal position. These findings also correspond closely to the findings discussed in Chiat’s longitudinal study of pronoun development in eight English-speaking children (Chiat, 1978), in which children between the ages of 2 and 3 years were observed at least once a week, in naturalistic play situations. Chiat’s observation covered periods varying from 7 months to 2 years. The children were in the process of acquiring pronouns over the period observed. In all but one case, 1st person singular (\textit{I, my, mine}) and 3rd person inanimate (\textit{it}) pronouns were the first to be used in significant numbers. 3rd person pronouns followed, with the gap between the emergence of these pronouns varying widely: in some cases the emergence of 2p and 3p pronouns was almost simultaneous, while in others there was a discrepancy of 6 months. (These and other findings are summarized in Table 6.8 further below).

\textbf{6.3.1.2 Pronoun reversal}

Systematic errors in early child language include the striking phenomenon of pronoun reversal. Pronoun reversal occurs when the child uses a 1st person person pronoun in reference to the addressee and/or a 2nd person pronoun in self-reference, and may make parallel errors for other deictic terms and locatives such as \textit{my/your} and \textit{here/there}. This phenomenon was noted in the literature as early as 1908 (Cooley, 1908; cited in Clark, 1978). Pronoun reversals have been observed not only in the acquisition of spoken languages but also in the acquisition of American Sign
Language, where the pronouns, which have the form of simple points, might be expected to be transparent (Bettelheim, 1967; Fay, 1979). They are reported to occur in congenitally blind children (Fraiberg, 1977; Fay & Shuler, 1980; Andersen, Dunlea & Kekelis, 1983).

Several case studies have reported that normal children also make pronominal errors in the course of acquisition (Cooley, 1908; Bain, 1936; R. Clark, 1974; E. Clark, 1978; Chiat, 1982; Schiff-Myers, 1983; Macnamara, 1986). Most data reported in the literature have been provided from diary studies, except for case studies by Chiat (1982) and Schiff-Myers (1983). Chiat (1982) analysed both comprehension and production data of a normally developing child who confused pronouns, aged 2;4 with an MLU of 5.03. Chiat’s data, however, covered only a short period during the mastery of pronouns (two visits with a 17-day interval) and data on earlier stages were lacking. Schiff-Myers (1983) covered a longer period of study (three visits over five months) for a normally developing child who started with pronoun reversals and progressed to correct pronoun usage. These case studies by Chiat (1978) and Schiff-Myers (1983) are important because they are the only studies which have provided pronoun reversal data beyond anecdotal summaries. However, systematic studies with larger samples of normal children have shown that only a small proportion of them exhibit this sort of error, suggesting that pronominal errors are not a common phenomenon among normal children (Sharpless, 1974; Strayer, 1977; Charney, 1980a, b; Chiat, 1981; Oshima-Takane, 1985).

6.3.2 Three hypotheses

As for the patterns of pronoun acquisition, three main hypotheses have been proposed for children’s initial assumption about the meaning of the personal pronouns in the literature: the speech-role hypothesis, the name hypothesis, and the person-role hypothesis. The speech-role hypothesis states that a majority of children grasp the correct meaning of pronouns from the outset because the relationship between pronouns and speech roles is salient. Consequently, confusion between the meaning of different person pronouns and pronoun reversals (e.g., substitution of first person pronouns (1p) for second person pronouns (2p) or vice versa) is
predicted to be rare in the initial stages of pronoun acquisition. Evidence supporting
the speech-role hypothesis has been reported for comprehension (Sharpless, 1974;
Clark, 1978; Chiat, 1981). Chiat (1981) has proposed that the inconsistency of
individual children, the relative infrequency of reversal errors in all studies, and
e specially the high level of comprehension accuracy generally observed constitute
evidence for a perspective-shifting explanation for the child’s deliberate use of
reversals to shift mental perspective. She suggests that most children, like adults,
understand the deictic quality of pronouns. However, also like adults, they may
choose to ‘violate’ the system in order to shift perspective, as in saying ‘what you
have done now?’ referring to the self.

According to the name hypothesis (Clark, 1978), a major difficulty for a number of
children is the realisation that pronouns shift referent with every change of speaker in
a conversation. Based on case studies, Clark noticed that at early stages some
children may ignore the shifting reference of pronouns and treat them like proper
names, resulting in highly systematic patterns of pronoun reversals (e.g. 1p = a
particular person such as the mother, 2p = child).

When both comprehension and production knowledge have been assessed
(Sharpless, 1974; Strayer, 1977; Charney, 1980; Chiat, 1982; Loveland, 1984;
Oshima-Takane, 1985, 1992; Legerstee & Feider, 1986; Oshima-Takane & Oram,
1991), only one study (Oshima-Takane, 1992) provides evidence for the name
hypothesis. In this case study, the subject consistently understood and said you
to refer to himself, and systematically comprehended and produced I to refer to his
mother, indicating that he was treating you as a name for himself and I as a name for
his mother. In the same vein, the work of Petitto (1987) on children learning
American Sign Language showed you/me alternations that may be interpreted as
giving evidence for the name hypothesis. Girouard, Ricard & Décarie (1997)
conducted a longitudinal study at two month intervals on the acquisition of first,
second, and third person pronouns in 12 French-speaking and 12 English-speaking
children aged from 1;6 to 3;10. The results partially supported the name hypothesis.
When only production data are considered, case studies have reported consistent
(Van Der Geest, 1977; Schiff-Myers, 1983) and inconsistent (Cooley, 1908; Bain,
1936; Chiat, 1982; Schiff-Myers, 1983) pronoun reversals for 1p and /or 2p. But systematic investigations with larger samples of children have indicated that pronominal reversal is a rare phenomenon in normal children’s speech in English, German, Spanish, and French (Shipley & Shipley, 1969; Charney, 1980; Chiat, 1981, 1986; Loveland, 1984).

A third hypothesis, the person-role hypothesis, was proposed by Charney (1980) who suggested that as children participate in dialogues, they learn the pronouns which refer to themselves before they master the pronouns which refer to others. This hypothesis predicts that, in each speech role, the pronoun referring to the child will be mastered first. Their pronouns are therefore ‘person-in-speech-role-referring’, in contrast to the ‘speech-role-referring’ pronouns of adult language which refer to any individual occupying the appropriate speech role. The evidence for a stage at which 1st and 2nd person pronouns are persons-in-speech-role-referring is twofold. First, Charney found that the order of acquisition of 1st and 2nd person pronouns differed according to the child’s speech role: in each role, the child initially learned the pronoun which referred to herself, e.g. she produced my (referring to herself) before your but comprehended your (referring to herself) before my. Secondly, performance on particular pronouns was sometimes inconsistent: 1st person pronoun were sometimes produced before being understood. As Charney has argued, her hypothesis ‘leads to the counter-intuitive notion’ that correct production of 1p embedded in undifferentiated forms will precede their comprehension; and 2nd person pronouns were always understood when the child was addressee before they were produced or understood when the child was non-addressee. According to Charney, there is evidence that children develop person-in-speech-role-referring pronouns, treating pronouns as labels for their own role in the communication situation.

Charney (1980) and other researchers (Strayer, 1977; Macnamara, 1982; Loveland, 1984; Legerstee & Feider, 1986) have presented some evidence to support the person-role hypothesis. In general, the comprehension results indicated that 2p was understood either before or at the same time as 1p. Loveland (1984) noticed that 1p forms were often used in unanalyzed forms (see also R. Clark, 1974; Sharpless,
1974; E. Clark, 1978) before they were correctly comprehended, whereas 2p were understood several sessions before they were produced. Legerstee & Feider (1986) reported evidence for the person-role hypothesis from a sample of French-speaking children. All of these studies showed that 1p always appeared in children’s speech before 2p.

Although some data on the comprehension and production of 1p and 2p do support the person-role hypothesis, other results undermine it, especially results relating to the comprehension of third person pronouns when children are in a non-addressed condition.

Genesee (2000), among others, proposed that research on child bilingual acquisition can contribute to general theories of acquisition. By tracing the development of 1p, 2p and 3p, the first goal of the present study is to test the validity of the three main hypotheses that have been proposed in the study of personal pronouns in first language acquisition by tracing the development of personal pronouns in bilingual first language acquisition: Mandarin and English. The inclusion of 3p, which has often been neglected, would shed some light on the debate. According to the speech-role hypothesis, pronominal confusion is predicted to be rare. In contrast, evidence for the name hypothesis requires systematic patterns of pronoun reversals. Support for the person-in-speech-role hypothesis demands that 1p be the first pronouns acquired when children are speakers, 2p when children are addressed listeners, and 3p when children are non-addressed listeners.

Before proceeding to the examination of the above three hypotheses, the developmental patterns of pronouns in monolingual first language Mandarin and bilingual studies are reviewed.

### 6.3.3 Monolingual first language development: Mandarin

Most studies on pronoun acquisition have been conducted with children speaking European languages. Only a few studies have been done on the emergence of personal pronouns in Mandarin-speaking children. Naturalistic data from Mandarin
Chinese reveal a common pattern in terms of order of acquisition and errors. Hsu (1987) reports that the first person singular pronoun  wo3 ‘I’ appeared around 1;10, the second person singular pronoun  ni3 ‘you’ emerged around 2;0, followed by the third person singular pronoun (2;1). Tseng (1987) offers further information on the order of emergence: the first person singular pronoun occurred before or at the same time as the second person singular pronoun, and the latter occurred before or at the same time as the third person singular pronoun. Hsu (1987) further provides information on the emergence of plural pronouns: the first-person plural pronoun  wo3men ‘we’ came into use around 2;4, the second-person plural pronoun  ni3men around 2;8, and the third-person plural pronoun  ta1men at approximately 3;0.

Xu and Min (1992) described order of emergence or productive use in a similar way. Wo3 ‘1st sing’ was produced at 1;7 and 2;0,  ni3 (2nd sing) at 1;9 and 2;2 while  ta1 (3rd sing) was produced at 2;0 and 3;3 (see also Li, 1995). Around age 2;6, Chinese children occasionally confused pronominal ‘shifters’, that is, they made pronoun reversals. They would say  wo3 bao4 ‘I carry [you]’ instead of  bao4 wo3 ‘[you] carry me’ (Chao, 1973, 25; Erbaugh, 1982, 406-409; Zhu, Chen, et al., 1986, 124).

On the whole, the methods used in the research into the acquisition of Mandarin children’s pronominal development are not described in detail. In particular, the emergence and acquisition criterion are not clearly stated so the results are confusing. Table 6.8 (see section 6.6.1.3 below) further illustrates this point.

6.3.4 Bilingual first language development

In the literature on bilingual first language acquisition, pronominal development has not been systematically studied. To our knowledge, a handful of works have discussed limited aspects of bilingual children’s acquisition of personal pronouns (De Houwer, 1990; Lanza, 1997; Meisel, 1990, 1994). De Houwer (1990) provided a detailed study on how a Dutch-English bilingual child acquired the intricacies of the Dutch and English gender systems. Lanza (1997) examined a Norwegian and English bilingual child’s directionality of mixed utterances in her use of pronouns.
Meisel (1990) and Kaiser (1992) approached this issue from a different perspective. They investigated the acquisition of French clitic pronouns and found that the emergence of subject clitics corresponded to the development of INFL and the object clitics were base-generated under the \( V^o \)-node making them appear to be part of the lexical category verb.

### 6.4 Theoretical and empirical appraisal

The data on order of emergence have served as the basis for understanding the relative complexity of pronouns for the child, on the assumption that an earlier acquired distinction is a less complex one. These data should have provided fairly detailed descriptive information about normal pronoun development. But the naturalistic data currently available seem to suggest that semantic complexity does not override other factors in determining acquisition, since the order of acquisition does not correspond to the order of complexity or the pattern of relationships in semantic analyses of pronouns. Furthermore, the question about whether there is a general order of acquisition of personal pronouns, across comprehension and production, remains unresolved.

The systematic errors children make in comprehension and production of pronouns have been informative in two ways. The absence of errors where one might expect them on the basis of theoretical analysis of the pronoun system indicates that aspects of pronouns which are linguistically complex may not be psychologically complex. This may tell us something about the child’s construction of pronominal concepts or factors which determine the development of pronoun systems. The errors that the child does make are more specifically informative, for they alone allow us to investigate any difference between child and adult use of pronouns. Analysis of pronoun errors, then, goes beyond descriptive data and promises to give us some insight into how pronominal concepts emerge. But the current work is limited to children speaking European languages: English, German and French for monolingual acquisition, and French, Dutch, German and Norwegian combined with English for bilingual acquisition.
It is not clear that the order and error patterns for pronouns acquisition which these researchers examined are the only important ones. Nor is it clear that these order and error patterns would play the same role in bilingual situations. In monolingual pronoun studies, languages like French, Spanish, German and English are closely related, both diachronically and synchronically. Chinese, as a Sino-Tibetan language, differs significantly from Indo-European languages, in both its phonological and its grammatical structures (e.g. in the use of lexical tones, its morphemic monosyllabicity, and its lack of inflectional morphology). Thus, the order and error patterns found with European monolingual children may not necessarily be found with Mandarin Chinese – English bilinguals. A complete picture will emerge only if we examine various pronoun developments across diverse as well as similar languages. More detailed longitudinal work across languages is needed to reveal any general developmental process when acquiring personal pronouns as well as the types of errors children make in the course of acquisition. As Oshima-Takane (1992, 129) states:

In order to fully understand the causes underlying pronominal errors, however, future research should analyse what type of linguistic input children receive and process when learning personal pronouns as well as the types of errors they make in the course of acquisition. Furthermore, a systematic analysis of developmental changes in the contexts in which children produce correct and incorrect pronouns as well as proper names may reveal how children who confuse personal pronouns eventually master the correct usage. Such research would make a significant contribution to our theoretical understanding of the mechanisms by which children learn personal pronouns. It would also provide important insights into the problems of autistic children who persistently make pronominal errors.
6.5 An overview of the Chinese and English pronominal systems

A description of Mandarin and English systems in first person reference was provided in 5.2 in Chapter 5. In this chapter, the system of Mandarin person pronouns is further specified. There are two distinctive linguistic characteristics in modern Chinese/Mandarin adult person reference that are worth noticing. First, Chinese/Mandarin personal pronouns, considered as a purely linguistic system, appear rather simple compared to those in English and other European languages. For instance, "wo3" is the only form for the first person singular in nominative, accusative, or dative case. The second person singular is "ni3" and the third person singular is "ta1". Both of these share the same syntactic functions as "wo3". The only case that is marked is when a personal pronoun takes the genitive case. It is then that a genitive/possessive marker "-de" is often added. In other words, all case forms are neutralized in Chinese personal pronouns. Each personal pronoun may add a plural marker "-men" to become plural. Since Mandarin has no case distinction, we would not expect case errors to appear in the speech of a Mandarin-English bilingual child. Case errors can be found in English monolingual children who use "my", "his" and "me", "him" in subject position (see Huxley, 1970).

The other distinctive linguistic characteristic is that null subject is part of the adult norm in modern Chinese. Therefore, a null self-reference is grammatically acceptable in Chinese. It is also important to note the fact that null pronouns occur not only in subject position but also commonly in object and possessive positions.

Table 6.1 presents an overview of the Mandarin and English person pronominal systems. This table includes material from Table 1 under 5.2 in chapter 5.
Table 6.1 Overview of the Mandarin and English pronominal systems

<table>
<thead>
<tr>
<th>Pronoun</th>
<th>Mandarin</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Feminine</td>
<td>Masculine</td>
</tr>
<tr>
<td>1st person</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominative/Subjective</td>
<td>wo3</td>
<td>I</td>
</tr>
<tr>
<td>Accusative/Objective</td>
<td>wo3</td>
<td>me</td>
</tr>
<tr>
<td>Possessive/Genitive</td>
<td>wo3 de</td>
<td>my</td>
</tr>
<tr>
<td>1st person plural</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominative/Subjective</td>
<td>wo3men</td>
<td>we</td>
</tr>
<tr>
<td>Accusative/Objective</td>
<td>wo3men</td>
<td>us</td>
</tr>
<tr>
<td>Possessive/Genitive</td>
<td>wo3men de</td>
<td>our/ours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(attributive/independent)</td>
</tr>
<tr>
<td>2nd person</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominative/Subjective</td>
<td>ni3</td>
<td>you</td>
</tr>
<tr>
<td>Accusative/Objective</td>
<td>ni3</td>
<td>you</td>
</tr>
<tr>
<td>Possessive/Genitive</td>
<td>ni3 de</td>
<td>your/yours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(attributive/independent)</td>
</tr>
<tr>
<td>2nd person plural</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominative/Subjective</td>
<td>ni3men</td>
<td>you</td>
</tr>
<tr>
<td>Accusative/Objective</td>
<td>ni3men</td>
<td>you</td>
</tr>
<tr>
<td>Possessive/Genitive</td>
<td>ni3men de</td>
<td>your/yours</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(attributive/independent)</td>
</tr>
<tr>
<td>3rd person /animate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominative/Subjective</td>
<td>ta1</td>
<td>she</td>
</tr>
<tr>
<td>Accusative/Objective</td>
<td>ta1</td>
<td>her</td>
</tr>
<tr>
<td>Possessive/Genitive</td>
<td>ta1 de</td>
<td>her/hers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(attributive/independent)</td>
</tr>
<tr>
<td>3rd person /inanimate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominative/Subjective</td>
<td>ta1</td>
<td>it</td>
</tr>
<tr>
<td>Accusative/Objective</td>
<td>ta1</td>
<td>it</td>
</tr>
<tr>
<td>Possessive/Genitive</td>
<td>ta1 de</td>
<td>its</td>
</tr>
<tr>
<td>3rd person plural</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nominative/Subjective</td>
<td>ta1men</td>
<td>they</td>
</tr>
<tr>
<td>Accusative/Objective</td>
<td>ta1men</td>
<td>them</td>
</tr>
<tr>
<td>Possessive/Genitive</td>
<td>ta1men de</td>
<td>their/theirs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(attributive/independent)</td>
</tr>
</tbody>
</table>

In short, the Mandarin pronominal system is very simple. It has no animacy and gender distinctions with fewer case marking. Mandarin prefers nouns, names, or ellipsis to pronouns, so pronouns are used less frequently than in English due to differing pragmatic constraints.
In addition, in Mandarin there are constraints on the use of third person forms: *ta1* singular and *ta1men* plural. As explained in Chapter 5, on the whole, the Mandarin pronominal system is simpler than its English counterpart. There are no animacy gender distinctions, fewer case marking, no honorifics, and no familiar-polite variants. *Wo3 xi3huan1 ta1* can be glossed as ‘I like him/her/it’; *ta3 xi3huan1 wo3* equates to ‘he/she/it likes me’. Yet, covert complexity arises because 3rd person *ta1* sounds very non-idiomatic even in referring to animals. As Li and Thompson (1981, 134) stress, the Mandarin pronouns refer primarily to persons. The third person pronouns are rarely used to refer to animals and even more rarely to refer to inanimate entities, though such uses do occur because of the influence of English. It is ungrammatical to use *ta1* as an equivalent of English *it* for an inanimate in subject position for the first mention of an item. Describing a papaya with ‘it [is] really sweet’ *ta1 hen3 tian2* is unidiomatic. The plural suffix *–men* is even more strongly human, so *ta1men hen3 tian2* ‘they [are] really sweet’ is worse still. *Ta1* is tolerated as a dummy pronoun in object position in informal speech.

Further, the grammar of *ta1* is strongly controlled by verb usage. Statives sound odd with inanimate subjects, but active verbs sound worse. Null subject is preferred, even in the case of English expletive sentences. Inanimate subjects should not be pronouns, but rather a noun or a demonstrative plus a noun classifier, as in *zhe4-ge* ‘this CLASS: general’ (this one), *na4-ge* ‘that CLASS: general’ (‘that one’). Subject ellipsis is very extensive.

### 6.6 Results

The present section aims to trace the process of the bilingual child’s pronoun acquisition in his two languages, Mandarin and English, by evaluating knowledge of 1st person pronoun (1p), 2nd person pronoun (2p) and 3rd person pronoun (3p) as the child expresses the speech roles of speaker, addressee and non-participant. Note that I shall examine 3p in its deictic function, e.g., in relation to the speech event in which it is spoken, but not in its anaphoric function, e.g., as a substitute for or as
coreferential with a previously mentioned noun. Lyons (1977) clearly distinguishes these two functions of 3p.

The pronoun production data are drawn from a total of 1646 intelligible utterances between age 3;0 and 4;0, from recording session 31 to 65 when James started to produce pronouns. An additional 552 intelligible utterances taken from age 4;0 and 4;4;01 from recording session 66 to 80 were used for a brief examination of the emergence of English 3rd person masculine/feminine pronouns. Cross-checking by the investigator and a bilingual assistant of 35 transcripts between age 3 and age 4 found 98% agreement on pronoun identification and 97% agreement on adjacent linguistic context.

The results are based on two kinds of evidence: (1) relative order of emergence and productive use for 1p, 2p and 3p depending on speech roles; (2) performance patterns for 1p, 2p and 3p, which show the developmental process of form-function mapping of a pronoun and possible errors involved in each of the two languages. Comparisons will be drawn with reports on the language productions of monolingual children whenever possible. We shall examine each finding in turn.

6.6.1 Order of emergence of pronouns and productive use

In monolingual studies on pronoun acquisition, utterances such as songs and routines that contain pronouns are normally discarded in data analysis (Charney, 1980; Chiat, 1981). The present study includes this kind of data when it occurs in James’ spontaneous speech production mainly because they are intelligible. Chunks and units are identifiable. Songs and rhymes excluded from Chapter 5’s analysis are due to their indefinable segments and unintelligible utterances. In Chapters 4 and 5, we found that James adopted a different strategy to approach vocabularies and syntactic structures in his Mandarin and English, therefore it can be seen that inclusion of this source of data can not only open up a perspective to trace the origin of the bilingual child’s pronominal development, but also make it possible to explore whether he employs similar strategies in acquiring the pronoun systems of the two languages,
especially when English is still the weaker language in this period of his linguistic development.

For this study, emergence was defined as James’ first recorded spontaneous production of the pronominal form. Imitated utterances were taken into account only if they are not pure echos of adult greeting rountines.

As for productive use, a criterion adopted from Charney (1980, 518) was used to determine the order in which consistently correct 1p, 2p and 3p appeared in the child’s speech. A pronoun form (wo3, I, etc.) was considered to have a consistently correct use when (i) it was only used correctly or (ii) it was used correctly and incorrectly but the correct uses passed certain independence criteria and the incorrect uses did not. These independence criteria indicated that the pronoun functioned as an independent linguistic unit and not only in rote phrases: the pronoun form had to appear in at least two different syntactic contexts, at least one of which also occurred in combination with a different word, either a noun/pronoun or a verb/adjective. The productive use of a pronoun form can also be called acquisition of a pronoun form.

6.6.2 Mandarin

The order of emergence of consistently correct pronouns in Mandarin is shown in Table 6.2 with the child’s age and Brown’s Stage indicated, followed by examples of usage and their English gloss.
Table 6.2 The order of emergence of Mandarin pronouns

<table>
<thead>
<tr>
<th>Order</th>
<th>Pronouns</th>
<th>Age/Stage</th>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
</table>
| 1     | ta1      | 2;10;07   | G: “ta1 zen3me le?”  
  
  *A: “ta1 wan2. ta1” | G: “How is he?”  
  
  A: “He play. he”  
  
  (ta1 refers to a doll) |
| 2     | wo3      | 3;0;07    | A: “wo3 chou4” | A: “I stink” |
| 3     | ni3      | 3;2;09    | A: “gei3 ni3” | A: “give you” |
| 4     | wo3de    | 3;2;12    | A: “zhe4 wo3de” | A: “this my/mine” |
| 5     | ni3de    | 3;2;16    | G: “zhe4 shi4 wo3de.”  
  
  A: “zhe4 bu2 shi4 ni3de” | G: “This is mine”  
  
  A: “This is not yours” |
| 6     | wo3men   | 3;3;18    | A: “zhe4 fei1ji1 wo3men yiyang4” | A: “This plane we the same” |
| 7     | wo3mende | 3;7;19    | R: “ni3 zai4 jia1 kan4 shu1 ao”  
  
  A: “wo3men zou3 wo3mende” | R: “you stay home to do reading”  
  
  A: “we go ours” |

*A stands for James.

The order of emergence was 3p singular ta1, then 1p singular wo3 and 2p singular ni3 at 2 month intervals; the last one was 1p plural wo3men occurring at a one-month interval after the appearance of 2p singular. These pronoun forms made their appearance within Brown’s Stage III and Stage V. Note that possessive forms: wo3-de, ni3-de and wo3men-de all appeared later than their corresponding nominative/accusative forms, which happen to be bare stems in Mandarin.

There was a period of sporadic uses of 1p, 2p and 3p singular at ages 2 and 3. It was just at that period of time that James used his own nickname and name to refer to himself (see Chapter 5). The utterances were 1 token of 1p singular, 12 tokens of 2p singular and 3 tokens of 3p singular. However, all of the 16 utterances of the three person pronoun forms, wo3, ni3 and ta1, occurred in an imitative way in greetings. James simply followed adults’ articulation in an echoing way. The syntactic frame
pronoun + hao3 (pronoun + good) was adopted to greet any interlocutor. Table 6.3 provides form and function mapping of three personal pronouns between age 2 and 3.

**Table 6.3 Form and function mapping of personal pronouns (2;0 – 3;0)**

<table>
<thead>
<tr>
<th>Form</th>
<th>Age range</th>
<th>Referent</th>
<th>Function</th>
<th>Example (Annotation)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wo3 (1st sg) [1]</td>
<td>2;5;17</td>
<td>None</td>
<td>Greeting routine</td>
<td>Wo3 hao3 (I good)</td>
</tr>
<tr>
<td>Ni3 (2nd sg) [12]</td>
<td>2;3;16 2;5;17</td>
<td>None</td>
<td>Greeting routine</td>
<td>Ni3 hao3 (you good)</td>
</tr>
<tr>
<td>Ta1 (3rd sg) [3]</td>
<td>2;3;24 2;5;17</td>
<td>Doll</td>
<td>Imitation</td>
<td>Ta1 hao3 (he good).</td>
</tr>
</tbody>
</table>

The number in square bracket indicates tokens of a type. Sg stands for singular.

It is discernable in Table 6.3 that the echo of the three pronouns (1p, 2p and 3p singulars) happened at around the same time (age 2;3;16 – 2;5;17). However, five months later, these three pronoun forms emerged at different rates. It is worth mentioning that it seems that, contrary to the monolingual data where the first person singular emerged first, followed by second person singular, then the third person singular inanimate, James took a different route to break through from nominal reference to person to pronominal one.

In particular, the third person singular form ta1 appeared in his first use of personal pronouns. Note that his first pronoun production did not stem from the formulaic frame Pronoun + hao3 that he used five months before. Table 6.4 shows clear lexical variation in that pronouns were combined with various previously acquired verbs or stative verbs, e.g. ku1/ “cry”, chou4/ “stink”, and gei3/ “give”. Moreover, the first appearance of ta1 occurred in a restricted domain, e.g., in referring to a doll in playtime. For example, at recording session 38 when James was 2;10;07 there were four occurrences of ta1, two of which referred to a doll in a story-telling time and the other two to non-human animate, a little cat, in a video watching time with his grandmother:
Table 6.4 Examples of emergence of ta1

<table>
<thead>
<tr>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>38. A: “ta1 ku1 le.”</td>
<td>38. A: “He/she (the little cat) cries.”</td>
</tr>
</tbody>
</table>

*Numbers indicate recording session number.

We will return to the detailed discussion of James’ expansion of ta1 usage later in the patterns of his pronoun production. Two months later, James broke out into his first person pronoun wo3 in Mandarin: wo3 chou4/ “I stink” (3;0;07). The first appearances of ta1 and wo3 appeared in nominative position, which reflects the adult input frequency and adult norm for use of ta1, e.g., adults produced 30% ta1 (11 out of 33 utterances) in a five minute story-telling activity in session 37 of. Another two months later, the second person singular ni3 happened to emerge in accusative position: gei3 ni3/ “give you” (3;2;09), which also reflects adult input norm and frequency since Mandarin is a pro-drop language and ni3/you in nominative position is normally omitted in a face-to-face conversation due to its obviously recoverable information content. One and half months later, at age 3;3;18, the first person plural wo3men appeared in a situation when James saw a plane flying in the sky and compared it with his own toy plane at home. He uttered zhe4 fei1ji1 wo3men yi1yang4/ “this plane we the same”, in which he omitted the comparative conjunction ‘gen1’ and nominalising marker ‘de’, (the adult-like expression would be ‘zhe4 fei1ji1 [gen1] wo3men [de] yi1yang4’). Wo3men in James’ expression contained inclusive meaning. Four months later at age 3;7;19 when he produced the possessive form of first person plural wo3men-de in NP contexts, the data shows that James already had a full command of 1p plural in either an inclusive or exclusive context. An example of order 7 in Table 6.2 illustrates this point (see Table 6.5). This conversation occurred when James’ mother (R) told his father that she was going to take James (A) out to let the father have space to do his PhD reading:

This conversation occurred when James’ mother (R) told his father that she was going to take James (A) out to let the father have space to do his PhD reading:
Table 6.5 Example of use of wo3men at age 3;7;19 taken from Table 6.2

<table>
<thead>
<tr>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>R: “ni3 zai4 jia1 kan4 shu1 ao”</td>
<td>R: “you stay home to do reading”</td>
</tr>
<tr>
<td>A: “wo3men zou3 wo3mende”</td>
<td>A: “we go ours”</td>
</tr>
</tbody>
</table>

The rest of the plural personal pronoun forms such as ni3men (you), ta1men (they/them) are not captured in the recording of the present study.

In sum, James’ personal pronoun development in Mandarin speech follows the following order: singular forms precede plural forms, within singular forms, 3p ta1 emerges first followed by 1p wo3 then 2p ni3 at intervals of up to two months. Furthermore, if we define productive usage as where a lexical element is used with more than one form of a specific verb or stative verb (type) -- a criterion adopted from Meisel (1990, 258) -- we observe that the order of emergence of pronouns in James’ Mandarin corresponds to the order of his productive use of these forms within Stage III and Stage V.

6.6.3 English

James produced his first English personal pronoun ‘mine’ at almost the same age (3;0;14) as he uttered the Mandarin counterpart wo3 (3;0;07), although his English MLU at that time was only at Brown’s Stage I while his Mandarin was already at Stage III. Table 7 provides the order of emergence of English pronoun forms between age 3 and 4. James’ age and Stage are presented with examples and notes, which explain either the utterance context or later forms of utterances. If we look at the emergence forms only without considering their contexts and speech role functions, the English pronouns emerge in the order mine, your (singular), I, me, my, it and you (singular). As for plural forms, only one instance of we was recorded at 3;4;22 when James pretended to make a call to a friend “Hello, I’m Ben. We are moving”. It was not possible to determine whether this instance was a formulaic expression or a productive use since there was no other data to substantiate it. There were no errors of reversals of I and you or confused pronominal “shifters/reversals”
observed in the entire corpus. Moreover, there were no instances of 3p personal pronouns recorded between age 3 and 4. This could be due to our data sampling limitation. But if we examine the recording context carefully, we discern that even though the obligatory non-participant context was provided, James preferred specifying 3rd person animate referents with non-pronominal NPs. This option is not available for 1st and 2nd person reference in adult English.

Here I would like to take a little more space to address the issue of emergence of 3rd person masculine/feminine singular pronouns in English since it is related to our discussion of gender distinctions in this bilingual child, although the study of 3rd person pronouns is beyond the scope of our present focus of data analysis (from 1;7 to 4;0). At later recording sessions between age 4;0 and 4;5, there were 13 instances of English 3p masculine/feminine singular produced. At age 4;2;03 (Stage V), she and he appeared at recording session 73, in which two instances of she referred to Joy (James’ younger sister) while he to James’ friend (a little boy) in a non-addressing context. The following conversation between James’ mother R and James A illustrates this point:

R do you want water?
A she want (referring to Joy)
R Joy, you want water
A she want
R does he want water? (referring to James’ newly made friend)
A he want

It appears that the non-participant speech role function of 3p pronouns in English was established from the very start of their use. James was observed to use he sporadically. There were 12 instances of she in recording sessions 74 (age 4;2;15), 79 (4;3;22) and 80 (age 4;4;01). She was always used in nominative position and combined with various verbs although James did not use verb agreement with the third person singular subject consistently, e.g. “She want that. I don’t like it” (4;2;15), “She has a turn” (4;3;22), “She make it noisy” (4;3;22), “She don’t like big. She like it.” (4;3;22). However, there are no instances of case and gender errors in our data. The lack of gender errors could be attributed to the restricted recording
environment. James always played with his younger sister Joy and sometimes one other little girl from the neighbourhood so he did not have much chance to talk about *he*. James normally used proper names to refer to his male peers Thomas, Peter, Oscar and so on, as in “*Mum, Oscar want water*”. As for pronoun case, there is not a single instance in our English data of an accusative pronoun being inappropriately used as the sentence subject, one of the characteristics of the early patterned speech period of his monolingual counterparts (Huxley, 1970, 147-154; Radford, 1986, 20).

Table 6.6 *The order of emergence of English pronouns between age 3;0 and 4;0*

<table>
<thead>
<tr>
<th>Order</th>
<th>Pronouns</th>
<th>Age/Stage</th>
<th>Example</th>
<th>Note</th>
</tr>
</thead>
</table>
| 1     | mine     | 3;0;14    | Y: “Don’t play”  
A: “mine. mine” | |
| 2     | your     | 3;3;03    | A: “shou3 jiao4 shenme?”  
R: “jiao4 Hands”  
A: “wash- your- Hands”. |  |
| 3     | I        | 3;4;22    | A: “How-I-wanna what-you-are…”  
A: “I-m a-li-teapot…”  
A: “I want toilet” | |
| 4     | me       | 3;5;20    | A: “Quse- me. Quse- me ” | at 3;6;25, “don’t touch-me” produced |
| 5     | my       | 3;6;09    | A: “What’s your name? My-name is James.” | ask a guest |
| 6     | it       | 3;7;03    | A: “It’s mine. lolly.”  
“It’s mine. don’t touch.” | at 4:0, “put in it. Then don’t touch it” produced |
| 7     | you      | 3;9;26    | A: “Do-you- try this? Do-you-try book?” | |

Table 6.6 summarises a similar phenomenon to Table 5.8 in Chapter 5, which illustrates the emergence of English first pronoun forms. Nearly every form of English pronouns experienced a period of formulaic usage except ‘mine’. If we carefully examine these pronouns according to the independence criterion set in the beginning of this section 6.6.1, a different picture emerges: the order of emergence of pronouns in James’ English does not correspond to the order of James’ productive
use of these forms within Stage I and Stage V. Table 6.7 presents the order of James’ productive use of English pronouns between age 3;0 and 4;0;02. In Table 6.7, James’ age and Stage are supplied with examples of pronominal utterances, semantic referent and the semantic/pragmatic function of each pronoun used at that time. Here ‘productive use’ or ‘acquisition of a pronoun’ again means that James’ production of pronouns passed the criterion of syntactic independence. The pronoun was used and functioned as an independent linguistic unit, not just in rote phrases. It is worth noticing that although these pronominal forms were used spontaneously in Table 6.7, their semantic and pragmatic functions were very limited in an adult way and were entirely context-bound, e.g. *mine* was used to claim ownership of a toy or thing, which is typically child-like and different from the adult use of *mine* as description of ownership in an NPs context: “*Mine* is here.” We will turn to details of form and function mapping in the child’s production patterns in the next section. Table 6.7 shows clearly the order of productive use of pronouns in James’ English between age 3;0 and 4;0;02: *mine, I, me, your, you, it and my*. Interestingly, the acquisition of these pronouns spread across Brown’s Stage I till Stage V almost evenly. *Mine* was produced at Stage I while *I* and *me* were acquired at Stage II. While Stage III and IV witnessed the acquisition of *your* and *you*, Stage V saw the development of *it* and *my*.
Table 6.7. The order of productive use of English pronouns between age 3;0 and 4;0;02

<table>
<thead>
<tr>
<th>Order</th>
<th>Pronouns</th>
<th>Age/Stage</th>
<th>Example</th>
<th>Referent</th>
<th>Function</th>
</tr>
</thead>
</table>
| 1     | mine     | 3;0;14    | Y: “Don’t play”  
         |          | Stage I   | *A: “mine. mine.” | Speaker       | Claim of ownership        |
| 2     | I        | 3;6;01    | A: “I want toilet.” | Speaker | Volition                  |
| 3     | me       | 3;7;03    | A: “Don’t touch me. Don’t push me.” | Speaker | Affecting                 |
| 4     | your     | 3;10;07   | A: “Put book on your hat”  
         |          | Stage III - IV | A: “This your finger one. Come on.” | Addressee | Emphasis                  |
| 5     | you      | 3;11;14   | A: “You try this.”  
         |          | Stage IV   | A: “You get this?” | Addressee | Speech role              |
| 6     | it       | 4;0       | A: “Put in it. Then don’t touch it.” | Non participant (inanimate) | Deictic |
| 7     | my       | 4;0;02    | A: “This is my Joy.” | Speaker | Description of ownership |

*A stands for James the informant.

6.6.4 Comparisons with monolinguals

There have been three major studies of Chinese personal pronoun acquisition in speech production, Tseng (1986), Hsu (1987) and Xu (1992). Their results are provided in Table 6.8. However, these studies are not much more than general descriptive reports of chronological development since, like many other Mandarin Chinese studies on pronouns, they do not supply MLU measures, do not adopt acquisition criteria and do not describe the children’s general syntactic development. For these reasons, comparisons with data from Mandarin-speaking children can only be tentative.

Some of the results in Table 6.8 reflect what we have previously discussed in Chapter 5. Therefore, I will explain only the related points. As documented in the L1 literature, and also confirmed in Table 6.8, the first person singular pronoun emerges in Chinese children sometime before 2;0 with appropriate use by 2;8 - 2;10. The second person pronoun follows the first person within an interval of between
one week and several months (see the review in Erbaugh, 1992; Xu & Min, 1992). Parallel pronominal forms emerge in English L1 children at about 1;6 - 2;0 (Brown, 1973), and are mastered by 2;10 (Oshima-Takane, 1992). Third person singular pronoun such as English *it* and Mandarin *ta3* are reported in both languages to be acquired after the first person singular pronoun and second person singular pronoun. The literature agrees that the order of the rest of the personal pronouns is not straightforward and that they are not fully established till 5;0 or even 6;0 dependent upon the specific language a child is acquiring (Zhu et al., 1986). The similarities in the development of personal pronouns of 1p, 2p, and 3p singular in Mandarin and English (monolingual) L1 acquisition are remarkable in terms of the timing and order of emergence, and even the route to the acquisition of personal pronouns. Clearly, the formally simpler Mandarin pronominal system does not appear to accelerate, or delay, pronoun emergence. Does our bilingual data resemble the monolingual data? If not, what is the reason? Is there any manifestation of systemic interdependent development in this area, that is, the influence of one language on performance in the other?
### Table 6.8 Order of emergence of personal pronouns in monolingual children: Mandarin and English

<table>
<thead>
<tr>
<th>Proponents</th>
<th>English</th>
<th>Mandarin</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>I &amp; me 1;6 – 2;3</td>
<td>wo3 (1st sing) 1;8 - 2;0</td>
</tr>
<tr>
<td>you (sing)</td>
<td>you 2;0 – 2;8</td>
<td>ni3 (2nd sing) 2;0</td>
</tr>
<tr>
<td>he, she, we, they</td>
<td>it 2;7</td>
<td>ta1 (3rd sing) 2;1</td>
</tr>
<tr>
<td>my</td>
<td>my 2;4</td>
<td>wo3men (1st plu) 2;4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ni3men (2nd plu) 2;8</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ta1men (3rd plu) 3;0</td>
</tr>
<tr>
<td>Term used:</td>
<td>emerged</td>
<td>employed</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Sing indicates singular; plu stands for plural while plus for plurals.

If we compare the emergence of pronouns in James’ speech with his monolingual peers, we find that he lags behind by nearly one year both for Mandarin and English. But if we take into account his performance patterns of these pronouns and the age range or Stages in which the correct form-function relationships of their use is achieved, it is clear that his pronoun acquisition in both his languages falls within the normal range of language development. In particular, by Stage V, James has mastered most of the pronominal usage in both languages to the level of his monolingual counterparts. (The later section 6.6.1.5 will discuss this point further.) At present, if we focus on comparing James’ order of pronoun acquisition with
monolingual data, we find similarities and differences. As for Mandarin, the order of acquisition of James’ pronouns is *ta1* 3p singular, *wo3* 1p singular, *ni3* 2p singular, then *wo3de* 1p singular possessive, *ni3de* 2p singular possessive and *wo3men* 1p plural and *wo3mende* 1p plural possessive. This pattern where *ta1* 3p singular comes first is not in line with the monolingual Mandarin data. However, with a close examination of the context and function of use of *ta1*, we might gain more understanding of the deviant order of James’ pronominal development. In the first language literature on Mandarin children’s pronominal development, there are discrepancies between the criteria for emergence and productive use in first language development and that used in the present study of the bilingual first language acquisition, as can be seen from various undefined terms listed in the last row of Table 6.8: ‘appeared’, ‘emerged’, ‘produced’, ‘acquired’ and ‘mastered’. It is not clear whether the researchers were talking about appearance of pronominal forms only or correct use of pronominal form and function mapping. At this point, we might not be able to clarify this issue. However, if we retain the *independence* criterion set in the introduction of section 6.6, we might have a tentative interpretation of the mismatch between the order of pronoun acquisition in this bilingual child’s Mandarin and the order of acquisition in the previous Mandarin data.

Note that James’s pronominal development follows a path of self-referring using two of his own names *Er2er* and *Auchee* sequentially and then concurrently. Both the Mandarin and English literature as well as a bilingual Norwegian and English study have documented the phenomenon of children’s use of their own name to refer to themselves. However, no previous research has reported sequential and then concurrent existence of two names for self and their referential functions in a communicational context. On the one hand, the protracted use of self-names between age 2;2 and 3;9;08 might have masked the development of James’ pronouns. On the other hand, this period could have served as a receptive learning period for James to observe pronoun usage and identify the speech role function of pronouns in either speech with pronouns addressed to him (in an addressed context) or in overheard speech with pronouns addressed to others (in a non-addressed context). It is obvious that the apparently deviant order in the child’s Mandarin pronominal
development where third person pronoun 3p comes before 1p and 2p can be interpreted as implying that the 3p is not necessarily the difficult pronoun to produce when the child reaches 2;10;07 at Stage III. Its semantic features and referential functions in one domain such as referring to a doll in a non-participant role can be acquired before or simultaneously with the 1p and 2p. So we might propose that the three pronouns are understood at about the same time, which is in line with Chiat’s speech-role hypothesis (1986).

If we compare the order of acquisition of James’ English pronouns with monolingual data, a striking matching pattern with Brown’s subjects appears. For James, the order of acquisition in productive use of pronouns is: mine, I, me, you, your, it and my. Brown (1973, 210), on the other hand, reports that in Stage I, at 1;6-2;3 years of age, the three American children in his sample produced the personal pronouns in the sequence I, you, it and my, even though Brown did not include mine, me and your in his investigation.

The results suggest that linguistic complexity does not override other factors such as language specific factors, input, and pragmatic constraints. As De Houwer (1990, 234) also noticed, formal complexity of linguistic forms is not in itself a determining factor in acquisition. Rather, given the need for the linguistic expression of a particular meaning, the input frequency of a particular form A relative to that of a competing form B within a particular language may play a decisive role in determining which of the two forms is the first to appear in a child’s language production. Lanza (1997, 325) further stressed the importance of input: “bilingual development will be the result of the interplay of various factors including the amount of input as well as the type of input”. Zhu and Li (2005) also state that it is generally assumed that more input in a particular language, either at the macro-community level (e.g., living in a community with a clearly dominant language) or at the micro-interactional level (e.g., conversational exchanges with parents and other care-givers) leads to faster development, more frequent use and higher proficiency in that language. The results of this study can be interpreted as evidence for the existence of some general underlying developmental mechanisms in pronoun acquisition. The input and language specific factors also play a role in facilitating
the process of pronoun development. For example, James produced *ta1* 3p singular in referring to a doll in a story-telling context, in which grandmother (a monolingual Mandarin speaker) always used *ta1* to refer to characters of animals, human beings and dolls in the books. The first appearance of *ta1* clearly reflects the adult input frequency and the adult norm for use of *ta1* as well.

Besides, reasons for James’ protracted use of proper names for self-reference in Mandarin are more likely to be related to the types of interactions that James entered into with his Mandarin interlocutors. Earlier, in Chapter 5, we noted that the Chinese cultural preference is that within the Chinese family, names and kinship terms often substitute for personal pronouns to address oneself and others, especially in interaction with children. In James’ case, the recorded conversation shows that all the family members used proper names most of time to address him. His grandmother used *Er2er*, his mother used both *Er2er* and *Auchee*, and only his father called him *Auchee*. Thus, the Mandarin pronominal input which James received from the family in an addressed context is relatively infrequent. Therefore, James’ use of the adult norm of proper names for self-reference is not surprising. What is surprising is how James eventually breaks into pronominal person reference from nominal reference given that the use of fixed terms of proper names appears to fulfill his communicative needs at that time. Close examination of the conditions of James’ first use of pronouns might enable us to pinpoint, under constant conditions across various measurement occasions, the transition from nominal to pronominal reference together with nominal person references. James’ first use of a pronoun was the 3p singular *ta1*. At age 2;10;07, he produced *ta1* in utterances *ta1 wan1. ta1...* “he play. he...” and *ta1 kul .../* “he cry...” in which the first *ta1* refers to a doll in a book and the second one to a little cat on television. Although dolls and animals are non-participant animate entities in a communicative situation, neither of them are real human beings. In addition, *ta1* is associated with action verbs expressing a change of state such as *wan1/play and kul/cry*. The child’s attention is not on the particular person being referred to but on the action being produced like ‘playing’, ‘cried’, that is to say, not on who did what but on what happened. This analysis of *ta1* suggests that pronouns may initially be acquired in limited contexts with limited expressions. Children might start using person pronouns not as specific referring
expressions, but as a contextual referring expression, as part of expressions about what is happening, which encode actions being produced, or a change of state being effected. Thus, the emphasis is placed on actions being effected or demanded, not on who did what or on a descriptive event. Moreover, in James’ case, the correct meaning of the third person pronoun singular has been understood right from the beginning: 1 referred to a non-participant. Although 1 in its first use could be interpreted as a case where James imitated grandma’s use of 1 in the whole expression, I would argue that if the child did not understand that the expression 1 “he cries” refers only to a non-participant, he may misuse this expression to refer to the action of himself or an addressee. Since the child did not misuse this expression, he must have been sensitive to the fact that the whole expression 1 “he cries” referred only to the non-participant’s action even though he did not know that the word 1 means the non-participant. As Oshima-Takane (1988, 97) assumed, when children spontaneously ‘imitate’ utterances of others, they impose an interpretation on the expressions, whether or not this interpretation is correct and whether or not they understand that each word in the utterance has an independent meaning. In order to imitate correctly others’ use of third person pronouns in association with a particular action in a particular context, the child might have already known that the whole utterance (containing third person pronouns) referred only to the non-participant’s action. Later, the appearance of the 1p singular 3 lends support to this point. 3 occurred out of a sense of emergency at 3;0;07 when James wanted a change of nappy. He uttered 3 “I stink” to focus on the state of ‘stink’ and demand immediate action. Later instances of 3 are mainly in conjunction with volitional and action verbs: 4/ “am”, 2/ “give”, 2/ “play”, 2/ “cannot put on”, 4/ “want” to express either internal states, assert volition or demand an action be done. Lanza (1997, 154) also found the function of a control act in her bilingual informant Siri’s use of I. In the monolingual literature, Budwig (1989, 1990) has demonstrated that young children acquiring American English attempt to link specific first-person pronominal forms with various semantic units and pragmatic goals. The form-function patterns noted in the children’s use of first-person pronominal forms involve ‘a cluster of related notions concerning agency and control’ (Budwig, 1990, 129). Budwig (1989, 273) claims that I tends to be used in utterances expressing the children’s internal states and
intentions, utterances ranking low in agentivity, in contrast to the use of my which link up with utterances in which the child acts as a prototypical agent bringing about a change of state. These analyses and discussions suggest that semantic and pragmatic factors could motivate the child to break into personal pronominal reference. Language-specific features and input frequency could serve as additional factors to shape the order of emergence of pronominal use in certain contexts. In English, James follows a developmental route to the pronominal system which is similar to monolingual English children.

In conclusion, James’ order of acquisition of pronouns in Mandarin and English are all independently traceable to Mandarin and English respectively: there is no need to invoke influence from the other language in order to explain similarities and differences in their development in the developing bilingual child.

6.6.5 A comparison between Mandarin and English

There is no manifestation of systemic interdependence in terms of transfer. In Genesee’s words (2000, 169), transfer consists of the incorporation of a grammatical property of one language into the other. If we compare the order of acquisition in James’ pronominal development in Mandarin with his pronominal development in English, there is not much in common in terms of age, Stage and emergence. No major cross-linguistic over-generalisations or under-extensions can be discerned. For instance, the Mandarin possessive marker –de was never transferred to be used in occurrence with English nominative pronouns; therefore, I-de, you-de and it-de never occurred. Nor were English pronominal form and function mapping features ever transferred to Mandarin. Thus, for example, James used the Mandarin equivalent ta1 to refer to animate entities only. In addition, after the emergence of ta1 at 2;10;07 when utterances with ta1 were all in subject position, 14 tokens of the early use of ta1 (100%) between 3;2;12 and 3;2;19 invariably occurred in subject position, which adhered highly to the pragmatic constraints on Mandarin usage of ta1.
In contrast to Mandarin *ta1*, James’ English inanimate pronoun *it* emerges earlier (at age 4;0) than the other 3rd person forms (at age 4;2;03). *It* is then used in greater numbers. When *it* appears first, it occurs as part of unanalysed phrases, which the child has acquired as a whole, such as *it’s* mine (age 3;7;03), *it’s* broken, etc. Then, *it* starts to appear in the same position as inanimate object NPs such as “put in *it*, don’t touch *it*”, which corresponds to Brown’s monolingual data (1973) as well as Lanza’s findings for her Norwegian-English bilingual child Siri’s use of *it* (1997, 111). As found by Angiolillo and Goldin-Meadow (1982), *it* tends to occur in post-verbal position in James’ early usage of *it*. Moreover, James only ever used *it* to refer to inanimate entities. However, it is important to note that James consistently followed English (non pro-drop) syntactic rules: English strictly requires a subject such as expletive subject *it* even if one is not needed semantically, while Mandarin is a null subject (or pro-drop) language and prefers zero anaphora in many contexts (Huang, 1984; Chen, 1992).

Further, a comparison of the developmental process of pronoun emergence and productive use in James’ two languages shows that he employed different strategies to approach Mandarin and English. This parallels the strategies he adopted to tackle the lexicons and syntactic structures of these two languages, namely a more analytic approach in Mandarin and a synthetic one in English. In Mandarin, the order of emergence of pronouns happens to correspond to the order of productive use. We might remember that three months prior, there is an imitative/echoing period, namely a greeting pattern *Pronoun + hao3*. Later development, however, shows that the emergence of each pronominal form does not result from this imitating pattern. These emergent pronouns are all combined with various previously acquired vocabulary items. As for his English, still the weaker language at this period of development, the picture is different: the order of emergence of pronouns does not match the order of their productive use. The discrepancy lies in the period of formulaic usage of almost all the pronouns except *mine*. Although we can not discount *mine* as a formulaic usage since *mine* appeared in Stage I, that is in the one word stage, and did not co-occur with any other element, if we take context into account, we discern *mine* was uttered by itself with several tokens in various contexts. Therefore, we take it to be a productive utterance. The rest of pronouns in
Table 6.6 have all experienced a slot-pattern formulaic process to reach the order of productive use in Table 6.7. Details of developmental process of each pronoun will be illustrated in the next section 6.6.6.

In conclusion, the data shows certain quantitative and qualitative differences between James’ two languages in pronoun acquisition. The analysis suggests that the same strategies employed in other areas of James’ bilingual development are carried over to approach pronouns in Mandarin and English. Besides, the different distributional patterns of 3p singular (ta1 and it) and form-function relationships of pronoun usage in James two languages demonstrate that James’ pronominal development proceeds in a language-dependent manner.

### 6.6.6 Production patterns of each pronoun

**Mandarin**

To trace the emergence of James’ pronouns, it may be useful to refer back to his early pronominal use of proper names. Chapter 5 discussed the process of James’ development of nominal self-reference to 1st singular pronouns. In this section, we will focus on the major developmental process of each pronoun from Table 6.8 to Table 6.18 between age 3;0 and 4;0 and the developmental errors involved in the process, namely, the reversals of personal pronouns, and possible explanations.

**Wo3 (1st person singular):**

There were 79 tokens of identifiable ‘wo3’ recorded in the entire corpus. Wo3 experienced five phases of development in terms of reaching an adult-like use of form and function relationships:

I. Function-restricted use alternating with nominal self-referents; (3;0;07 – 3;1;17)

II. Confusion with 2p; (3;1;17 – 3;2;02)

III. Resolving confusion; (3;2;09 – 3;2;12)
IV. Phasing-out nominal self-referents; (3;2;14 – 3;9;26)

V. Adult-like use. (3;10;07 – 4;0;0)

Recalling the discussion of concurrent use of form and function difference of Er2er, Auchee and Wo3 in Chapter 5, the form-function mapping of nominal self-reference was as follows: Er2er and Auchee between age 3;0;07 and 4;0 mainly carried over their roles from age 2;0 and 3;0 to function more divergently toward the direction of Er2er as personal and intimate self whereas Auchee as descriptive and social self. Table 6.8 provides evidence to this claim. 70% of Er2er was associated with verbs expressing personal needs or experiences such as chi1/eat, kan4/see, yao4/want and meng4/dream. 44% of Auchee was expressed in the context of self-identification and activities involving social self whereas the rest of the uses of Auchee were related to identifying boys in picture books or TV. (James tended to call any boy in a book Auchee for a certain period of time.) James’ (A) spontaneous talk with his mother (R) at age 3;2;18 illustrates this point:

R      po2 na3 zou3 le a. ni3 zai4 zhao3 shen2me?
       (grandma has taken away. what are you looking for?)

A      Auchee zhao3 er2er de. Auchee zhao3 er2er de
       (Auchee looking for Er2er’s {painting}.
       Auchee looking for Er2er’s {painting}.)

R      ni3 zhao3 ni3 zi4ji3 de hua4 a
       (you looking for your own painting?)

A      en
       (yes)

The distinctive functions of Auchee and Er2er were clearly reflected in A’s sentence containing both Auchee and Er2er: Auchee zhao3 er2er de/ “Auchee looking for Er2er’s {painting}”.
Table 6.9 Mandarin

Age 3;0;07 – 4;0;0
Form and function mapping of nominal self-reference

<table>
<thead>
<tr>
<th>Form</th>
<th>Age range</th>
<th>Referent</th>
<th>Function</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Er2er</td>
<td>3;2;16 – 3;9;08</td>
<td>Speaker [35]</td>
<td>Personal [26] 70%</td>
<td>chi1 (eat), kan4 (see), yao4 (want), meng4 (dream)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self as possessor [3]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auchee</td>
<td>3;0;07 – 3;8;22</td>
<td>Speaker [33]</td>
<td>Social [17] 44%</td>
<td>I. Self-ID: 1.Any boy (3;02;16) 2. Himself (3;06;09) II. Social-self: A: “Auchee zha3 er2er de {hua4}.” (Auchee look for er2er’s {painting}).</td>
</tr>
<tr>
<td>(Chinese name) [47]</td>
<td></td>
<td>Possessor [3]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self identification [2]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Er2er was not used for 3 months (2;11;17 – 3;02;16) while Auchee was intensively used. Numbers in square brackets indicate tokens of the type.

In section 6.6.1.1, we have taken *ta1 and *wo3 as examples and discussed the possible reasons for James to change from exclusive use of nominal referents to pronominal ones. The previous analysis suggested that pronouns might initially be acquired in limited contexts with a limited function. Phase I of ‘*wo3’ in Table 6.10 recaptured this point.

Table 6.10 Examples of Phase I ‘*wo3’

<table>
<thead>
<tr>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>31*, *wo3 chou4</td>
<td>31. I stink.</td>
</tr>
<tr>
<td>34. *gei3 *wo3 wan2 yi1 xia4..</td>
<td>34. Let me play for a while.</td>
</tr>
<tr>
<td>35. *wo3 yao4 jin4 lia2.</td>
<td>35. I want to come in.</td>
</tr>
<tr>
<td>35. *wo3 bu2 bui4 chuan1.</td>
<td>35. I don’t know how to put on.</td>
</tr>
</tbody>
</table>

*All the numbers indicate recording sessions.

The above examples (in Table 6.10) taken from Phase I demonstrated that ‘*wo3’ was first employed to function as a demand of action. Phase I shows that ‘*wo3’ was used in a functionally different way from Auchee and Er2er, although three of the
self-referring forms coexisted till 3;9;08. It is worth noticing that all the utterances of ‘wo3’ in Phase I were semantically and syntactically correct. ‘Wo3’ was used to refer to speaker, the child himself. There was one instance of ‘wo3’ referring to addressee.

In Phase II (3;1;17 – 3;2;02) at age 3;2;02 when 2nd person singular pronoun ‘ni3’ emerged, there appeared a temporary period of confusion: the shifting reference of ‘ni3’ with ‘wo3’ as speaker. The following conversation at age 3;2;02 exemplifies this point. The situation was when grandmother (G) pointed to a mess of mashed biscuits on the sofa and blamed James (A):

<table>
<thead>
<tr>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>G Auchee. zhe4 shi4 ni3 gao3 de ba?</td>
<td>G Auchee. this is what you did?</td>
</tr>
<tr>
<td>A en</td>
<td>A yes</td>
</tr>
<tr>
<td>G Ni3 shuo1 zhe4 shi4 ni3 gao3 de</td>
<td>G you say this is you did</td>
</tr>
<tr>
<td>A Ni3 gao3 de</td>
<td>A you did</td>
</tr>
<tr>
<td>G Shuo1 “Wo3 gao3 de”</td>
<td>G say “I did.”</td>
</tr>
<tr>
<td>A Po2 gao3 de</td>
<td>A Grandma did</td>
</tr>
<tr>
<td>G Enhn. shuo1 “Wo3 gao3 de”</td>
<td>G Not right. say “I did”.</td>
</tr>
<tr>
<td>A Wo3 gao3 de</td>
<td>A I did</td>
</tr>
</tbody>
</table>

Table 6.11 shows that when the confusion occurred, it was difficult for adults to correct the wrong usage of ‘wo3’ and ‘ni3’, because the model for the correct use of personal pronouns is not directly given in speech addressed to children. In such speech, children observe that second person pronouns always refer to themselves and first person pronouns refer to the person who is speaking to them. The reader may recall when he first used ‘wo3’, James produced consistently correct utterances containing ‘wo3’. It was apparent that the incorrect pronouns (reversals of 1p and 2p) occurred only after the child had acquired one pronominal reference (1p singular) and began to acquire another new pronominal form (2p singular).

The question arises: how can the child sort out the correct usage of 1p singular and 2p singular? Phase III (age 3;2;09 –3;2;12) provides a possible answer. 1st person
singular possessive form ‘wo3de’ emerged at 3;2;12 in an arguing situation in recording session 38: two boys were fighting over for a book, they both uttered “wo3de” repeatedly to claim ownership of an object. The following argument between TiTi (T) and James (A) depicted the use of ‘wo3de’:

T  zhe4 shu1. wo3de. bu4 shi4 ni3de
   (this book. mine. not yours.)
A  zhe4 wo3de
   (this mine.)
T  zhe4 wo3de
   (this mine.)
A  zhe4 wo3de
   (this mine.)
T  zhe4 wo3de
   (this mine.)
A  zhe4 wo3de.. wo3 zhao3 Po2 qu4. Po2
   (this mine. I go to find grandma {to help me}. Grandma.)
G  ai. zen3me le?
   (ye. what happened?)
T  zhe4 shu1. wo3 de
   (this book. mine.)
G  Er2er, hao3 hai2zi, ting1 hua4. TiTi shi4 ke4ren2. Ni3 ying4gai1 gei3 ta1.
   (son-son, good boy, listen to me. TiTi is a guest. You should give him.)
A  shi4 wo3de
   (is mine.)

It seems that the entry of 1st person possessive form ‘wo3de’ helped James sort out the confusion: the pronominal reversals of 1p and 2p, that is, utterances in which the speaker referred to himself as ni3/“you” or to the addressee as wo3/“I”. Peer-play may create the above competitive situation in which a peer resorts to the use of pronoun such as wo3de/ “mine/my”; James soon copies his behaviour. Children who interact with peers are exposed to a different speech input than with parents. The interplay of peer effect with the state of the child’s own developing system at this
particular time makes it clear that this different speech input leaves traces that become apparent during the transition towards the target language. Notice that when grandmother persuaded James from giving up the book, grandma used 2nd person and 3rd person pronouns in one utterance ni3 ying4gai1 gei3 ta1/ “you should give him”, which could have triggered James’ pronominal reversals, however, James stood square on his ground as well as in his correct choice of pronominal form ‘wo3de’ in his answer: shi4 wo3de/ “is mine”. It seemed evident that the peer effect in a conflict argument situation helped him sort out the confusion between pronominal forms ‘wo3’ and ‘ni3’. We understand that the origins of pronominal reference in child language is of course not the only one concerned with the peer effect on the development of personal reference. When peers as well as adults interact in natural circumstances, children can be provided with dyadic speech from the outside (as spectators). Such observational opportunities as well as participant situations can provide a model of shifting references in personal deixis, which could promote the correct use of pronouns in personal references.

James’ first use of ‘wo3de’ referred to alienable possession and was centered on the volitional function of possession such as claim of ownership, which was different from adult use of descriptive function of possessive personal references. This finding is consistent with a study by Deutsch and Budwig (1983) in which alienable possession appeared to be the first semantic domain in which pronominal expressions occurred in child language. James’ use of ‘wo3de’ also suggests that progression in the transition from child language to target language is domain-specific. Obviously children do not suddenly discover the rules inherent in a target language at some point in development, but they grow stepwise into an adult-like use of personal deixis from an egocentric, speaker-based vantage point (cf. Clark, 1978).

Phase IV (3;2;14 – 3;9;26) concerned the fading out of nominal self references. Er2er phased out of production at age 3;9;08, which was a month later than Auchee that was dropped at age 3;8;22. Figure 2 in Chapter 5 demonstrates that James’ uses of Er2er and Auchee dropped significantly. During a three month period (between age 3;2;20 and 3;5;29), Er2er appeared 11 times while Auchee had only 4 occurrences in 300 utterances. Wo3 increased its frequency by 47 tokens,
comprising 59% of 79 total utterances of ‘wo3’. Besides, all the occurrences of ‘wo3’ referred to the speaker and they were used correctly in various adult-like syntactic positions. The following examples in Table 6.12 were taken directly from computer-sorted transcribed samples:

### Table 6.12 Examples of Phase IV ‘wo3’

<table>
<thead>
<tr>
<th>Recording Session</th>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>42</td>
<td>wo3 yao4 xiao3 bing3gan1/niu2na1i3/ling1.</td>
<td>I want little biscuit/milk/to carry</td>
</tr>
<tr>
<td>42</td>
<td>wo3 gao3.</td>
<td>I do</td>
</tr>
<tr>
<td>44</td>
<td>ye3yu3 you3, ye3yu3 mei2you3. wo3 zha03 zha0 kan4.</td>
<td>Maybe have, maybe not, I have a look</td>
</tr>
<tr>
<td>44</td>
<td>wo3 ma3shang4 jiu4 lai2 ji.</td>
<td>I immediately just come</td>
</tr>
<tr>
<td>45, 46</td>
<td>wo3 lai2 le.</td>
<td>I come</td>
</tr>
<tr>
<td>46</td>
<td>wo3 ma3shang4 jiu4 chuan1 hao3 le.</td>
<td>I soon wear ready</td>
</tr>
<tr>
<td>46</td>
<td>jiao3 wo3 gan4 shen2 me?</td>
<td>call me for what</td>
</tr>
<tr>
<td>46</td>
<td>wo3 na3 zhi1 dao4</td>
<td>how I know</td>
</tr>
</tbody>
</table>

Phase V (3;10;07 – 4;0;0) involved situational performance limitations. During this one month and three week period, there were 12 recorded instances of ‘wo3’. Out of these only 2 instances were related to pronoun reversal errors, the rest were all correct utterances of ‘wo3’. The two examples of errors suggest that James did not make pronoun reversal errors systematically. Moreover, James’ pronoun reversal was not consistent. Reversed pronouns are always noted to occur alongside correct usage. This is a similar phenomenon to that reported in diary studies (Cooley, 1908; Jespersen, 1922) and a case study (Chiat, 1982). Examples from James’ data at age 3;10;07 at recording session 61 in Example D illustrates the point. James used 1st and 3rd person pronouns incorrectly:
Table 6.13 Examples of Phase V ‘wo3’

<table>
<thead>
<tr>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Session 61: James (A) doesn’t like his sister Joy doing poo in front of him. He complains to his father (Z) and mother (R).</td>
<td></td>
</tr>
<tr>
<td>A  bu2 yao4. bu2 yao4 gei3 wo3 e1.</td>
<td>A: no. don’t want give me poo.</td>
</tr>
<tr>
<td>A  bu2 yao4. bu2 yao4 gei3 ta1 e1. hao2 chou4</td>
<td>A: no. don’t want give her poo. Very stink.</td>
</tr>
<tr>
<td>R  bu2 yao4 ta1 zai4 ni3 mian4 qian2 e1. shi4 bu2 shi4?</td>
<td>R: don’t want her to poo in front of you. Right?</td>
</tr>
<tr>
<td>A  en</td>
<td>A: ye.</td>
</tr>
</tbody>
</table>

In this conversation from Table 6.13, after first uttering *bu2yao4 gei3 wo3 e1*/ “don’t want give me poo”, James might have been aware of the incorrect use of ‘wo3’ and immediately repaired it to *gei3 ta1*/ “give her” in the same syntactic frame. What he really wanted to express was ‘*bu2yao4 ta1 zai4 wo3 mian4qian2 e1*’ (don’t want her to poo in front of *me*), a pivotal construction\(^4\), in which James was required to place two pronominal forms in different syntactic positions in one utterance, namely, 3\(^{rd}\) person pronoun ‘ta1’ in pivot position and 1\(^{st}\) person pronoun ‘wo3’ in a prepositional phrase. In such a case, when James’ sentence production occurred under conditions of high linguistic complexity and cognitive demand, deictic shifting might have been partially expressed, which resulted in the cited pronominal errors. Moreover, within the same recording session 61, we find the correct form-function mapping of 1\(^{st}\) person pronoun ‘wo3’ used together with 2\(^{nd}\) person pronoun ‘ni3’ in the same turn in a conversation with his father Z in Example Table 1.14:

\(^4\) The defining characteristic of the pivotal construction is that it contains a noun phrase that is simultaneously the subject of the second verb and the direct object of the first verb. That is, the noun phrase functions as a “pivot” relating the two verbs. See Chao’s discussion (1968) in section 2.13, pages 124-129.
Overall, in James’ case, reversals are outnumbered by correct usage of pronouns. Thus James’ incorrect pronominal usage at this phase can be interpreted as performance limitations rather than a competence-related incorrect semantic hypothesis. Because deictic shifting is a semantic/pragmatic operation that must be performed during discourse, certain discourse contexts may place a child at higher risk for reversal errors. This explanation is also in line with Dale and Crain-Thoreson’s (1993) proposed processing complexity hypothesis. According to the processing complexity hypothesis, when sentence production occurs under conditions of high linguistic or cognitive complexity, deictic shifting may simply be omitted, for performance-related rather than competence-related reasons.

In sum, James’ usage of ‘wo3’ experienced five developmental phases of form-function pairing between age 3;0;07 and 4;0. By age 4;0, most of James’ uses of ‘wo3’ were target-like, although there were a few occasions when he demonstrated difficulty in shifting pronominal reference. Such cases were mainly due to performance limitations rather than semantic confusion of speech role functions of personal pronouns. Table 6.15 summaries the development of ‘wo3’:

### Table 6.14 Examples of use of ‘wo3’ and ‘ni3’

<table>
<thead>
<tr>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>Z ba3 shu1 fang4 zai4 dou1 shang4 gan4 shen2me?</td>
<td>Z put book on the head, for what?</td>
</tr>
<tr>
<td>A wo3 jiang3 yin1yu3, ni3 ye3 yao4 jiang3 yin1yu3</td>
<td>A I speak English, you should speak English as well.</td>
</tr>
<tr>
<td>Z all right</td>
<td>Z all right.</td>
</tr>
</tbody>
</table>
Table 6.15 Mandarin

Age 3: 3;0;07 – 4;0;0
Development of form and function pairing of Wo3 (1\textsuperscript{st} sg) /79/\ *

<table>
<thead>
<tr>
<th>Emergence or fading-out of other pronoun forms</th>
<th>Age range</th>
<th>Referent</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>3;0;07 – 3;1;17</td>
<td>Speaker [9]</td>
<td>Producing action effect</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Echo [1]</td>
<td></td>
</tr>
<tr>
<td>Emerge: Ni3 (2\textsuperscript{nd} sg)</td>
<td>II</td>
<td>Speaker [2]</td>
<td>Confusion ni3 = wo3 as speaker (input problem)</td>
</tr>
<tr>
<td>3;2;02</td>
<td>3;1;17 – 3;2;02</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Emerge: Wo3-de (1\textsuperscript{st} sg. poss.)</td>
<td>III</td>
<td>Speaker [8]</td>
<td>Possessive form’s entry helps sorting out confusion</td>
</tr>
<tr>
<td>3;2;12</td>
<td>3;2;09 – 3;2;12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fading out: Er2er</td>
<td>IV</td>
<td>Speaker [47]</td>
<td>Speech role</td>
</tr>
<tr>
<td>3;9;08</td>
<td>3;2;14 – 3;9;26</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Auchee</td>
<td>V</td>
<td>Speaker [10]</td>
<td>Correct speech role</td>
</tr>
<tr>
<td>3;8;22</td>
<td>3;10;07 – 4;0;0</td>
<td>non-participant [2]</td>
<td>Performance limitations: difficulty in deictic-shifting</td>
</tr>
</tbody>
</table>

*Numbers in square bracket indicate frequency of a pronoun form.

Ni3 (2\textsuperscript{nd} person singular):
There were 60 tokens of identifiable ‘ni3’ recorded in the entire corpus. Ni3 experienced three phases of development before reaching an adult-like use of form and function relationships:

I. Non-shifting use of referent; (3;2;02 – 3;2;19)
II. Deictic use; (3;2;21 – 3;10;07)
III. Expanding use. (3;11;07 – 4;0;0)
Table 6.17 presents the development of form and function pairing of James’ usage of ni3 (2\textsuperscript{nd} person singular). Age ranges are provided with their corresponding phases. Referent and function are specified with some examples and glosses.

Phase I recorded the emergence of ‘ni3’ at age 3;2;02. During this period, James produced 6 utterances containing ‘ni3’. They were all well formed utterances. However, on close examination of the contexts, we discover that in 4 of them ‘ni3’ refer to the child himself, as speaker, in a functionally incorrect way, e.g. gei3 ni3/“give you”, actually the child wanted a toy to be handed to him so he should have said gei3 wo3/“give me” instead. Another instance occurred when James’ mother said bye-bye to James at the entrance of the child care centre. James reminded his mother to ask his daddy to pick him up, and James said to his mother: ba4ba lai2 jie1 ni3/“Daddy come to pick you up”, actually what he wanted to express was ba4ba lai2 jie1 wo3/“Daddy come to pick me up”. The inappropriate uses of ‘ni3’ all had their roots in the adult input. Adults always used ‘gei3 ni3’ to hand in food to James or to each other. In the latter case, James simply copied his father’s expression ba4ba lai2 jie1 ni3/“Daddy comes to pick you up” whenever his father saw him off to the childcare centre and said goodbye to him. At the same time, he did produce correct form and function mapping of ‘ni3’ in utterances, e.g. wo3 xi3huan1 ni3/“I like you” when James showed affection for his mother at age 3;2;02; da3 ni3/“hit you” when James threatened to hit his mum at 3;2;12. The inconsistent production of 2\textsuperscript{nd} person singular pronoun suggests that the child has realized the adult speech-role-referring function of ‘ni3’ so he could sometimes produce it correctly but he has not yet controlled the addressee-only-referent usage. As a result he produced more incorrect (reversed) ‘ni3’ than correct ones. Given that the speech role functions of pronouns are entailed by any intentional use of language – since every utterance implies a speaker and an addressee – perhaps it is not surprising that children, whose earliest use of language is intentional, already recognise the speech roles that implies. The reversed ‘ni3’ mirrored the child’s spontaneous imitation of adults’ models as well as directly copying the addressee’s perspective. The finding is in line with Chiat’s (1985, 353) claim that there is no evidence that children who make this error have problems with distinguishing speech roles from the individuals who occupy them, or with identifying pronominal forms with speech roles. Further, to
identify the context in which this phenomenon occurred we found in James’ case that it only took place when James had acquired one pronominal form ‘wo2’ (1p sg) and then began to acquire another pronominal form ‘ni3’ (2p sg), as mentioned before in the earlier discussion of ‘wo3’ in this section.

It is interesting to note that ‘ni3’ appeared only in object position in all the utterances at this phase of the child’s language development, which reflects the adult norm. The reason for that is that Chinese is a null subject language; ‘ni3’ can be omitted in daily conversation when the 2nd person addressee is obvious. Normally, when questions are being raised in a dialogue, if the referent is directed to the addressee, ‘ni3’ does not need to be addressed. Thus the chances of the child hearing ‘ni3’ in subject position in the input are even fewer than in the case of 1st person singular ‘wo3’. Therefore, it is not surprising that James produced ‘ni3’ first in object position in utterances.

Phase II (3;2;21 – 3;10;07) witnessed an increased and correct use of ‘ni3’ over 48 occurrences. The appropriate form-function mapping of ‘ni3’ in 46 spontaneous utterances indicates that James has control over the speech-role function of ‘ni3’ as addressee. Even the incorrect instances which occurred in Phase I have been sorted out, e.g. in session 47 (at age 3;5;05) a dialogue was recorded between James’ mother (R) and James (A) when they were playing with a ball passing it to each other:

Table 6.16 Example of Phase II ‘ni3’

<table>
<thead>
<tr>
<th>Example F</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>R er2er. lai2. wo3men lai2 da3 qiu2 ba</td>
<td>R Sonson. Come on. let’s play the ball.</td>
</tr>
<tr>
<td>A ai. gei3 ni3</td>
<td>A ye. give you.</td>
</tr>
<tr>
<td>(he threw the ball out)</td>
<td></td>
</tr>
<tr>
<td>A gei3 wo3</td>
<td>A give me.</td>
</tr>
<tr>
<td>(James uses gestures to indicate R to throw the ball to himself)</td>
<td></td>
</tr>
<tr>
<td>R gei3 ni3</td>
<td>R give you.</td>
</tr>
<tr>
<td>A gei3 ni3</td>
<td>A give you.</td>
</tr>
<tr>
<td>(he threw the ball to mum)</td>
<td></td>
</tr>
<tr>
<td>R aao</td>
<td>R woops</td>
</tr>
<tr>
<td>A gei3 wo3</td>
<td>A give me</td>
</tr>
<tr>
<td>(he wants the ball)</td>
<td></td>
</tr>
</tbody>
</table>
Table 6.16 shows clearly that James has a good command of the deictic features of 1st person singular ‘wo3’ and 2nd person ‘ni3’ in an addressing context. Moreover, his uses of ‘ni3’ were combined with various verbs in utterances and also occurred in adult-like positions, e.g. ni3 shi4 zai4 shang4ban1/ “you are at work” addressing his father on the phone (3;6;01); ni3 qu4 mai3 dong1xi1/ “you do shopping” when asking his mother (3;7;19).

In Phase III (3;11;07 – 4;0;0), there are 6 instances of ‘ni3’ recorded and all of their uses are adult-like. James expanded the deictic usage of ‘ni3’ for the purpose of personification. James purposefully adopted a third person’s perspective to tell a story in a picture book. He performed a dog’s role to tell a cat:

“Xiong2mao1, xiong2mao1, ni3 bu2 neng2 lai2. Wo3 bu4 xi3huan1 ni3.” (little cat, little cat, you cannot come. I don’t like you) (3;11;07).

By then, James can be said to have mastered the speech role referring function of 1st person and 2nd person pronouns. The analysis shows that the child is extremely sensitive to the different perspectives within the communication situation, as well as to the individual participants within it.
Table 6.17 Mandarin

Age 3: 3;0;07 – 4;0;0

Development of form and function pairing of Ni3 (2nd sg) [60]

<table>
<thead>
<tr>
<th>Age range</th>
<th>Referent</th>
<th>Function</th>
<th>Example</th>
<th>Gloss</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td></td>
<td>*Non-shifting</td>
<td>37. wo3 xi3huan1 ni3.</td>
<td>37. I like you.</td>
</tr>
<tr>
<td>3;2;02 – 3;2;19</td>
<td>Speaker</td>
<td>reference</td>
<td>38. gei3 ni3.</td>
<td>38. give you.</td>
</tr>
<tr>
<td></td>
<td>Addressee</td>
<td>[2]</td>
<td>41. ba4ba lai2 jie1 ni3 (wo3).</td>
<td>41. dad comes to you (me) up.</td>
</tr>
<tr>
<td>II</td>
<td></td>
<td>Speech role</td>
<td>Session 63: Xiong2mao1, xiong2mao1, ni3 bu2 neng2 lai2.</td>
<td>Little cat, little cat, you cannot come.</td>
</tr>
<tr>
<td>3;2;21 – 3;10;07</td>
<td>Addressee</td>
<td>[46]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Song</td>
<td>[2]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>III</td>
<td></td>
<td>Speech role</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3;11;07 – 4;0;0</td>
<td>Personification</td>
<td>[2]</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Addressee</td>
<td>[4]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*It seems that James spontaneously adopts imitating approach to 2nd pronoun acquisition

In sum, the 2nd person singular pronoun ni3 went through three phases to reach adult-like usage in form-function relationships. James started with spontaneous imitation of the adults’ model and thus produced more incorrect non-shifting utterances referring to the speaker together with fewer correct ones referring to addressee, then moved to the correct (target) speech role referring production. Finally, James went beyond the deictic use of ‘ni3’ and employed ‘ni3’ for personification to achieve a perspective-shifting function that is to represent the addressee’s perspective and which produces different pragmatic effects.

Ta1 (3rd person singular):

There were 33 tokens of identifiable ta1 recoded in the entire corpus between 3;0;07 and 4;0;0. Ta1 experienced four phases of development before reaching an adult-like use of form-function relationships:
I. Domain-restricted usage; (3;2;12)
II. Referent-expanding usage; (3;2;16)
III. Reference-shifting difficulty; (3;2;19)
IV. Adult-like usage. (3;7;09 – 3;11;07)

Table 6.19 presents the development of form-function pairing of James’ usage of *ta1* (3rd person singular). Age ranges are provided with their corresponding phases. Referent and function are specified with some examples and gloss.

Phase I saw the emergence of *ta1* at age 3;2;12 to refer to non-participant roles. James’ domain-restricted production of *ta1* in story-telling and TV-watching contexts in this phase has been explored in section 6.6.1.3. We will focus next on James’ step-wise developmental changes in his use of *ta1* towards adult-like form-function relationships in the later phases.

In Phase II (age 3;2;16), *ta1* moved one step forward from referring to dolls and animals to referring to humans in books. This happened just four days after the emergence of *ta1*. Four recorded instances of utterances containing *ta1* referred to ‘a boy’ and ‘a girl’ respectively in book-reading time. Meanwhile, the use of *ta1* in referring to animals remained and two instances were recorded in the same book-reading time. *Ta1* was placed in subject position in all utterances, which was different from James’ uses of English *it*, which was placed always in post-verbal object position.

In Phase III (age 3;2;19) there is one recorded instance of *ta1* referring to a real-life human being. Interestingly, this human was James himself, referring to in a perspective-shifting way. Session 41 contains a conversation between James’ mother (R), grandmother (G) and James discussing a lolly, a favourite of James’. In the beginning, R and G were talking to each other, but when the topic of lolly popped up, James cut in suddenly in Table 6.18:
It was clear that James comprehended that *tal* in the adults’ dialogue referred to himself, a 3rd person human who was also a non-participant in the dialogue. It would have been appropriate if the child used the speaker’s perspective to intervene ‘*wo3 chi1*’ / “I eat” instead of adopting a third person’s perspective to respond as *tal chi1* / “He eat”. However, it was understandable that under rapid on-line speech constraints James simply modeled the adult’s perspective to produce an urgent response and was unable to shift the pronominal references from 3rd person to 1st person. There were two instances of similar non-reversal uses, e.g., James asked grandmother: “*tal ba4ba dao4 na3 qu4 le*” (he daddy went where/ the meaning in English: “where was his daddy?” It was a well-formed Mandarin sentence except James did not shift referent from 3rd person singular *tal* to 1st person singular *wo3*. This kind of perspective-shifting utterances all have their roots in the adult input. At dinnertime, James often heard grandmother talking to his mother and asking the same question about his father’s movements. As a result, when he himself wanted to know the whereabouts of his father, James simply copied the same sentence with non-reversal of the personal pronoun.

In Phase V (3;7;09 – 3;11;07), James’ uses of *tal* became adult-like. 20 tokens of *tal* were recoded and none of them deviated from the adult norm of form-function relationships. Out of the 20 instances of *tal*, 2 referred to dolls, 10 to animate entities and 8 to human beings, and all of them were non-participants in the communicative situation. The data demonstrate that James has now mastered the deictic features of *tal* usage.

In sum, James’ uses of *tal* were first acquired in a domain-restricted way, then moved step-by-step to expand semantic domains of uses and finally achieved an
adult-like form and function mapping. Pronominal reversals did occur in Phase III, mainly in speaker’s role when ‘wo3’ should be used, but James employed an adult’s 3rd person role to use ta1 to refer to himself. However, the inconsistent production of incorrect speech-role referring ta1 all had their traces in the adult input.

In comparison with monolingual children, Xu and Min (1992, 343) report a similar development of ‘ta1’ in the speech production of five 0;5 – 3;5 year old and 28 3;0 – 4;0 year old Mandarin Chinese children. Their data show that children first used ta1 to refer to dolls and animals in either picture books or toys at around age 2;0. Seven to ten months later, they employed ta1 to refer to real-life humans but also produced incorrect ta1-referring utterances with deictic shifting problems. Three months later at around 3;3, Chinese children indicated that they had started sorting out the correct usage of non-participant speech role function of ta1. It is worth noticing that in the literature on English monolingual development, 3rd person natural gender pronouns go through a similar developmental process to reach adult-like form and function mapping (although Mandarin ‘ta1’ has no gender distinction). Evidence from Charney’s (1980, 525) very thorough examination of person pronoun development suggests that in the production data from 21 English girls at age 1;6 – 2;6 there was a definite developmental order of ‘her’ in reference to dolls, then in anaphoric reference to people, then in deictic reference to non-participants. James’ data also confirmed that the earliest uses of Mandarin 3rd person were in referring to dolls. In this regard the data from James have similarities with those for monolingual Mandarin as well as English children.

Therefore, it seems to be the case that the learning of the correct uses of form and function relationships of 3rd person singular proceeds in a piecemeal fashion in monolingual children, as it does for James.
**Table 6.19 Mandarin**

Age 3: 3;0;07 – 4;0;0

Development of form and function pairing of *Ta1* (3rd sg) [33]*

<table>
<thead>
<tr>
<th>Age range</th>
<th>Referent</th>
<th>Function</th>
<th>Example</th>
<th>Annotation</th>
</tr>
</thead>
<tbody>
<tr>
<td>III 3;2;19</td>
<td>Human in real life [1] Speaker [2]</td>
<td>Reference-shifting difficulty: Ta1 = Wo3</td>
<td>Session 41: non-addressee situation (R &amp; G are talking about A’s lolly) R: zhe4 ta1 hai2 chi1 bu4 chi1? (talking to G) G: tang2. ta1 bu4 chi1 le A: ta1 chi1 (wo3 chi1) Session 41: A asks grandma: “ta1 ba4ba dao4 na3 qu4 le”. A asks G.</td>
<td>R: this (lolly) he wants or not? G: lolly. He doesn’t eat any more. A: he eats. (he refers to himself) Session 41: A asks grandma: “he daddy gone where?” (he refers to himself)</td>
</tr>
</tbody>
</table>

*Numbers in spare brackets indicate tokens of the type.*
Almost all the English pronoun forms in Table 6.7 have their roots in unanalysed phrases in Table 6.6. The major developmental process of each pronoun in Table 6.7 between age 3;0 and 4;0 is as follows.

Mine:

Only 5 instances of ‘mine’ were recorded between age 3;0 and 4;0. After 4;0, more instances of ‘mine’ were noticed. It is important that we expand our data analysis of ‘mine’ half a month beyond age 4 so as to have a clear picture of the child’s use of ‘mine’. ‘Mine’ went through two phases of development:

i. Use in a restricted function; (3;0;14)
ii. Approximation of target-like form and function mapping. (4;0;15)

James was discerned to first produce Mine (3;0;14, Stage I) to claim ownership when the toy he was playing was to be taken away. Half a year later we found that his use of mine was still restricted in the function of claiming ownership, e.g. “Mine, don’t touch it” (3;6;25, Stage II). It was until 4;0;15 that mine was used with an adult-like function: description of ownership in a deictic sense. Example:

A: “This is not mine. mine in garage.” (4;0;15, Stage V)

(This camera is not mine. My camera is in the garage).

I:

There are 20 tokens of ‘I’ recorded in the data. The data between age 3;5;05 and 4;0 confirm that ‘I’ experienced three phases of developmental process:

i. Formulaic patterns; (3;5;05)
ii. Productive use with limited functions; (3;6;01)
iii. Acquisition with target-like form-function relationships. (4;0)
‘I’ was first recorded at 3;5;05 in songs like “Twinkle-winkle little star, how-I-wonder what-you-are..”, “I’m a little-teapot...”. Two instances of ‘I’m’ were captured later on in the same recording session at 3;4;22 when James pretended to call an English friend. Strangely he did not use his own name James. Instead he adopted a fake name Ben to refer to himself: “Hello, I’m Ben.” His use of I’m cannot be discounted as being a formulaic phrase taken from a frame I’m + X. There is not enough evidence to suggest that at this stage he has used I in a productive way. It was not till 3;6;01 when enough evidence shows up then we can decide that James employed I productively. If we remember in Chapter 5, when James urgently needed a change of nappy in a Mandarin context, he uttered the Mandarin first person pronoun in wo3 chou4/ “I stink”, which was surprisingly clear. The same emergency situation happened again when James urgently needed to go to the toilet in an English context when he was playing with an English-speaking friend. He shouted: “I want toilet”. From that day on till 4;0, we recorded 16 tokens of I combined with various English verbs. Examples:

A: “I want water” (3;7;01)
A: “I want toilet” (3;7;03)
A: “I want biscuits” (3;7;19)
A: “I don't know” (3;8;09)
A: “This book, I found” (3;11;07)
A: “I want orange juice. I want some orange.” (3;11;14)
A: “I get seven” (4;0)
A: “I go to the toilet”. (4;0)

It can be noted that 55% of I-utterances were combined with verb want, which suggests that I was first confined to a volitional function and serves as a control act. Moreover, I always occupied the subject position in the entire I corpus. At 4;0 in Stage V, I began to co-occur with more varieties of verbs. Its use of form-function relationships became target-like.

Me:
There are 9 tokens of *me* recorded. *Me* went through two phases:

i  Formulaic usage; (3;5;20)

ii  Adult-like usage. (3;7;03)

Formulaic usage of ‘me’ appears quite early in the following situations:
When James wanted other people to give way, he said:
A: “’Scuse-me, ‘scuse-me”. (3;5;20)

Another time James was angry about a toy being taken away,
A: “Don’t touch-me.” (Meaning: don’t touch my toy) (3;6;25)
After his mum corrected him ‘It’s “don’t touch it”, not “don’t touch-me”’, James
dropped the pronoun and used ‘don’t touch’ instead.

Around 3;7;03, James’ production of ‘me’ approximated the target use, e.g.,
A: “Don't touch me. Don’t push me”. (3;7;03)

Your:
11 tokens of ‘Your’ were captured in the recording. ‘Your’ development also
experienced two phases:

i  Formulaic usage; (3;3;03)

ii  Adult-like usage. (3;10;07)

‘Your’ first appeared in a fixed phrase at 3;3;03 in Stage I. It was in a Mandarin
context; James asked his mother what the Mandarin term *Shou3/hands* was called in
English. When he heard the English term ‘hands’, he was prompted to use the
associated phrase ‘wash your hands’ since he heard this phrase everyday at the
English day care centre. James and mother started the conversation as follows:

A: “shou3 jiao4 shenme?” (A: “Hands called what?”)
R: “jiao4 Hands”    (R: “called Hands”)
A: “wash- your- Hands”. (A: “wash your hands.”)
The distinctive English pronunciation of the noun ‘hands’ may have triggered the switch and association of an English familiar phrase. In an investigation of language contact among adult German-English bilinguals in Australia, Clyne (1967, 1972) noted the occurrence of what he refers to as ‘trigger words’, that is, words which belong to, or rather appear to belong to, both of the bilingual’s languages, for example, proper names. These trigger words could provoke a more or less unconscious switch from one language to the other. Saunders (1988) noticed some occurrences of triggering in his bilingual sons’ switching although these did not occur often. In James’ case, trigger words could result in associative fixed phrases that contained pronominal forms.

Age 3;10;07 witnessed a change in James’ use of ‘your’: a transition from formulaic phrases to a productive usage. ‘Your’ began to combine with various nouns in different constructions as in the examples at age 3;10;07 below:

“Put book on your hat.”

“Put on your hat. Sit down!”

“This your finger one. Come on.”

The data shows that the use of ‘your’ is error-free and always adult-like. It is syntactically correct and semantically and pragmatically appropriate. The addressee speech-role function is established right from the beginning.

You:

The appearance of ‘you’ was similar to ‘your’ in a formulaic phrase at age 3;9;26. There were 21 tokens of ‘you’ in the entire third year corpus. 65% of the occurrences of ‘you’ were produced at 4;0. Like ‘your’, ‘you’ experienced a change from phase i to phase ii:

i   Formulaic usage; (3;9;26)

ii  Adult-like usage. (3;11;14)
In the first phase, James adopted a fixed pattern: Do-you-try + X to produce a request/inquiry concept encoding the whole situation with addressee ‘you’ contained in it.

“Do you try book?”
“Do you try lolly pop?”
“Do you try this?”

In the second phase starting at 3;11;28, it can be seen that ‘you’ was isolated from the fixed phrase and also from the unanalysed whole and operated as an independent unit to pick out the addressee. The following examples illustrate this point:

A: “Catch you.”
A: “You got this? You got that? Put on the tissue.” (3;11;28)

90% of ‘you’ in the entire corpus by age 4 occurred in subject position, however, there were two instances in object position, e.g. “catch you”. There was no instance of ‘you’ being used in possessive and other positions. The use of ‘you’ is both semantically and formally adult-like and does not exhibit any influence from Mandarin. The following transcription using CHILDES conventions contains James’ alternative use of ‘you’ and ‘your’ at age 4;0, which fits the linguistic and communicative contexts of the three relevant utterances perfectly.

@Participants: JMS James Child, MOM Ruying Mother
@Date: 14-DEC-1997
@Situation: James is with MON at night
@Language: English
*MOM: I am going to wash my face, brush my teeth.
*JMS: You brush your teeth. You wash your face.
*MOM: Are you going to brush your teeth?
*JMS: No. You brush your teeth.
This lends further evidence to the claim that James’ English 2nd person singular pronoun formation is guided from within the English system rather than from within the Mandarin one.

It:
Only 5 tokens of ‘it’ occurred in the entire recording sessions between age 3;0 and 4;0. If we examine the data beyond age 4;0, we find that the frequency of usage of ‘it’ increases to 41 tokens. ‘It’ followed a process of transition from phase i of formulaic usage to phase ii of productive use.

i  Formulaic usage; (3;7;03)
ii  Adult-like usage. (4;0)

At age 3;7;03 in Stage II, James produced: “It’s mine. lolly.” as well as “It’s mine. don’t touch.” when he tried to claim ownership of an object. Although the syntactic position and meaning of ‘it’ fit the context perfectly, ‘it’ was not used as an independent linguistic unit. ‘It’ was embedded in ‘it’s mine’ as a formulaic phrase in whole expressions which focused on a claim or relation in which different inanimate entities are involved, rather than on reference to particular inanimate entities.

By 4;0 ‘it’ could be claimed to have achieved the status of an independent linguistic unit and a deictic function to refer to non-participant inanimate entities.

A: “put in it. Then don’t touch it.” (4;0)

After age 4;0;02, utterances of ‘it’ were used in alternation with English demonstratives such as ‘this’ and ‘that’. Each use of them operated within the boundaries of English pronominal form-function relationships, although James’ English grammar at this stage was still undergoing improvement. A CHILDES adopted transcription serves to illustrate this point:

@Participants: JMS James Child, MOM Ruying Mother
@Date: 18-DEC-1997
@Situation: James is playing buying and selling
@Language: English

   How much is it? One dollar? Two dollar?
   Mummy, big one? (Mummy, do you want a big item?)
   Mummy, jingle bell? One jingle bell or two jingle?
   (jingle bell refers to Christmas cards with Santa Claus on them)
   Put in it, then don’t touch it. (it refers to an envelope)
   Stay there. I go to the toilet.
   More jingle bell. You get this jingle bell. Not this one. You get that.
   You get some this? No, you get some that? How much that?

*MOM: Three dollars.
*JMS: What that?

%COM: JMS put MOM’s money into his cashier machine, then gave
MOM a plastic bag.
*MOM: What’s that?
*JMS: Put that in this. (put the cards in the bag)
   Thomas? (Do you want a Thomas train?)

*MOM: How much?
*JMS: Ten dollar.
   You get some ball? (Do you want some balls?)

*MOM: Yes.
*JMS: Shen3me ball? (Which colour of the ball do you want?)

%COM: In Chinese the question should be ‘Shen3me yan2se4 de qiu2?’ -- what colour’s the ball. After realising that MOM couldn’t understand
him, JMS rephrased his question.
*JMS: You get some blue? (Do you want some blue balls?)

@end

‘It’ always referred to inanimate entities and was mainly placed in post-verbal
position as we discussed in section 6.6.1.3. There was no instance of ‘it’ being
placed in a non-adultlike position and being used in an idiosyncratic way. The
later appearance of other 3rd personal pronouns such as ‘she’ and ‘he’ have been explained in section 6.6.1.3 as well.

My:
There were only 4 tokens of ‘my’ in the entire corpus through to age 4;0. Like the previously mentioned English pronouns, ‘my’ went through the same period from phase i of formulaic usage to phase ii of productive use:

i Formulaic usage; (3;6;09)
ii Productive usage. (4;0;02)

‘My’ was first contained in a formulaic phrase: My name is X at age 3;6;09, which we have discussed in Chapter 5. Here I reiterate the example adopted from the transcription using CHILDES conventions. A conversation between James and his father is as follows:

@Participants: JMS James Child, DAD Yun Daddy
@Date: 22-JUN-1997
@Situation: James is playing with DAD and Joy
@Language: English

*DAD: What’s your name?
*JMS: My name is James.
*DAD: What’s mei4mei’s name? (what’s your younger sister’s name?)
*JMS: My name is Joy.
*DAD: What’s Daddy’s name?
*JMS: My name is Yun.
*DAD: What’s Mummy’s name?
*JMS: My name is Mummy.

At 4;0;02 James began to isolate ‘my’ and pick out the speaker only after it had been acquired in a fixed frame encoding the whole conceptual relationships. Even so, James’ first productive use of my contains the possessive meaning ‘I have’, which is
an under-extension of adult-like usage of my. For example, at 4;0;02 James came back from the child care centre and told his father in Chinese the following event:

“Jin1tan1 wo3 dui4 you4eryuan2 de xiao3 peng2you3 shuo1 wo3 you3 mei4mei.”

Today I to child care centre’s little friend tell I have younger sister/
(Today I told the friend in the child care centre that I have a younger sister)

“Ni3 zen3mo shuo1 de?” his father asked.

you how told particle

/(How did you tell?)

“Wo3 shuo1 ‘This is my Joy’”. answered James.

I said ‘this is my Joy.’

Two days later at 4;0;04 (17/12/97), James produced two utterances with unambiguous ‘my’ in an adult-like form and function relationship in an English context:

“Look, my truck! I want make my truck blue.”

Although we do not have sufficient utterances to testify that James’ use of ‘my’ at this stage of development is fully adult-like, the data shows makes it appear likely that his productive use of ‘my’ is progressing to an approximate adult-like use.

In sum, first, almost all of James’ English pronominal development experienced a period of formulaic usage except ‘mine’. Since ‘mine’ was produced at the one-word stage (in Stage I), ‘mine’ could also have had a formulaic use, like the rest of the pronouns, but we do not have enough evidence to disambiguate the status of mine. Second, it appears that the use of the 1st pronouns of ‘mine’, ‘I’, ‘me’ and ‘my’ experienced a context-bound period (also see Budwig, 1989, 1990), in which a restricted mapping of form-function relationships predominated. For example, ‘I’ was initially mainly used with the verb ‘want’ to serve a volitional purpose and involve a goal of action. However, third, the rest of the personal pronouns did not
share the same developmental change from a restricted use of form and function mapping to a broader adult-like usage. The data show that James adopted the adult-like form and function relationships of the 2nd person and 3rd person pronouns right after their formulaic phases. Further, the data indicate that in Stage V, the bilingual child has not only mastered most of the English singular personal pronouns with correct use of form and function mapping of these pronouns but also mastered their complex linguistic distinctions such as the semantic distinction marking person (1p, 2p, and 3p), the morphological distinction marking possession (my and your), and the syntactic distinction marking case (I-my-me, you-your-you). There was no instance of errors in the use of case or possession in our data. For example, ‘she’ was always placed in subject position. James produced ‘it’ much earlier than ‘she’ and ‘he’ and used ‘it’ more frequently than the feminine and masculine forms. In addition, the absence of errors in the use of ‘it’ and the ‘she/he’ pairs (with ‘it’ never applied to humans and ‘she/he’ never to inanimates) may be related to the absence of other forms to express the same functions, both within the adult model and within the child’s own developing system. De Houwer (1990) found a similar phenomenon in her study of the acquisition of ‘it’ and ‘she/he’ by the Dutch-English bilingual child Kate. De Houwer discussed the relationship of input and acquisition and hypothesised that the acquisition of many morphological elements is highly dependent on the interaction between absolute and distributional frequencies of certain forms in the input and the state of the child’s own developing system at any particular time (1990, 140-141). James’ acquisition of ‘it’ and ‘she/he’ lends support to this hypothesis. Moreover, the English data from James for the acquisition of natural gender in pronouns are similar to those reported in studies of children acquiring English, in terms of the relatively late occurrence of the masculine and feminine pronouns. His correct use of ‘she’ to refer to his younger sister Joy and another girl resembles at least one monolingual case study (Fletcher, 1985) in that not all monolingual English children start out by using inappropriate gender assignments. The little English girl that Fletcher reported on never made any errors in her choice of natural gender pronouns (reviewed in De Houwer, 1990, 143-144). In his use of gender pronouns, then, James behaves very much like at least one monolingual child and one bilingual child.
On the whole, although his use of other aspects of English pronouns is adult-like, James’ plural forms of English pronouns are still immature even up to Stage V at 4;0. At the age of four and even four years and six months, James is still very much in the middle of learning the intricacies of English gender and plural systems in pronouns.

6.7 Summary

Now we are in a position to summarise the findings concerning order of acquisition and production patterns in this bilingual child’s pronoun development. As for the order of acquisition, it seems that:

1. The set of personal pronouns do not emerge in productive use in a clear-cut order. James starts off with a subset of pronouns which do not appear to constitute a natural class. For Mandarin, they are 3rd person singular, then 1st person singular, followed by 2nd person singular. In English, they are 1st person singular and inanimate 3rd person singular, followed by 2nd person singular.

2. These pronouns tend to occur in specific contexts, rather than in their full adult distribution. In Mandarin, pronouns are first used in a restricted form-function pairing pattern, e.g. 1st person singular ‘wo3’ is first employed to function to demand action; 3rd person singular ‘ta1’ is first produced to refer to dolls. In English, almost all of the pronouns make their appearance in stereotyped, unanalysed phrases which encode the relationships involved in events and states as a whole, e.g. 1st person ‘my’ contained in ‘My name is X.’

3. Sporadic use of pronouns often precedes more systematic and frequent use.
4. Though pronouns may be sporadic or limited in their distribution when they first emerge, confusions between different personal pronouns rarely occur. In particular, the speech-role properties of pronouns are recognized right at the emergence of these pronouns. Inconsistent production errors do occur, but only under certain predictable conditions. The child is prone to make non-shifting referent errors when he has acquired one pronoun form and is beginning to acquire a second one. Another case is when the child simply adopts an adult’s speech role to copy adults’ use of pronouns under high linguistic and performance demand. In my data such errors occur only in one of his languages, that is, in Mandarin pronominal development.

Comparing the two languages and monolingual development, James’ patterns of pronominal performance suggest the following:

1. While the developmental process of ta1 is in line with the L1 acquisition of ta1, ta1 emerges first, earlier than wo3 and ni3. This does not match L1 research findings. However, the early appearance of ta1 occurs in a restricted domain (such as referring to dolls at story-telling time). Moreover, the child uses ta1 consistently to refer to animate entities and uses it frequently in subject position. This coincides with adult use.

2. Unlike Mandarin, for James' development of pronouns in English, there is no nominal self-reference stage before the emergence of personal pronouns.

3. When English 1st singular and 2nd singular appear, there is no pronoun-reversal problem. There is no form and function confusion stage.
4. As for pronoun case, there is not a single instance in our English data of an accusative pronoun being inappropriately used as the sentence subject, one of the characteristics of the early patterned speech period (Radford, 1986, 20). The child demonstrates a consistent case-marking contrast with “I – me – mine”.

5. The child uses *it* to refer to inanimate entities only and follows English (non pro-drop) syntactic rules: English strictly requires a subject such as expletive subject *it* even if one is not needed semantically while Mandarin is a null subject (or pro-drop) language and prefers zero anaphora in many contexts (Huang, 1984; Chen, 1992). This is consistent with De Houwer (1990, 141) who also observed the same usage in her bilingual Dutch-English child Kate.

In sum, the present study shows that for the bilingual child first and second person pronoun reference emerges significantly (about one year) later than for his monolingual Mandarin and English counterparts. Further, his development of personal pronouns in English seems to be error-free and seems to proceed with no apparent difficulty, while his Mandarin personal pronouns go through three difficult stages: nominal self-referring, speech role referring confusion in 1st singular and 2nd singular pronouns, and a later stage of performance limitation in perspective shifting reference for 1st person singular, 2nd person singular and 3rd person singular pronouns. Further, the previously mentioned strategic approaches in Chapters 4 and 5 are observed to be apparent in James’ handling of the two pronoun systems as well: an analytic approach in Mandarin but a synthetic one in English, for example, in initial formulaic usage of almost all the English pronouns in James’ case.

### 6.8 Concluding Remarks

The systematic analysis of developmental changes in the contexts in which the child produces both correct and incorrect pronouns as well as proper names reveals how the child who at first produces incorrect personal pronouns eventually masters the
correct usage. This systematic analysis provides insights into the theoretical understanding of the mechanisms by which children learn personal pronouns. For instance, the close appearance of three forms of personal pronouns after age 3, especially the observation that in Mandarin 3p comes first than 1p and 2p indicates that semantic complexity does not override other factors in determining acquisition, since the order of emergence does not correspond to the order of complexity or to the pattern of relationships in semantic analyses of pronouns, e.g., 1p first, 2p second then 3p. The results seem to support Chiat’s speech role hypothesis, namely, that the bilingual child seldom confuses different persons with each other or confuses pronominal categories with non-pronominal categories. In other words, the bilingual child has no problem with the speech role function of pronouns. Reversals in production were rare in the initial stages of pronoun acquisition and occurred only in identifiable contexts. This might indicate that for this bilingual child, pronouns were comprehended correctly before being produced, although we do not have comprehension data to substantiate this claim. The phenomenon of reversals in this bilingual child is a complex one, which is not due simply to linguistic or cognitive immaturity or to imitativeness as Clark’s ‘person hypothesis’ or Charney’s ‘person-in-speech role hypothesis’. There are only a few instances of reversals in this bilingual child’s pronoun development but they are all in Mandarin not English. A close examination of the reversal patterns in the conversational contexts reveals that reversals may be due to different processes at different stages of development in normal children’s acquisition of pronouns, e.g., reversals may reflect that the newly entered pronoun form competes with the old established pronoun form and has not been stabilised, such as the reversals of 2p with 1p at the time when 2p has just emerged. Later reversals are likely to occur under high linguistic and performance demands. A close analysis of the contexts in which the bilingual child acquires 1p, 2p and 3p in pairs of two syntactically and pragmatically different languages (e.g., Mandarin and English) could throw light on how children assign meaning to these forms. The data suggest that syntactic, pragmatic and input factors are all involved in influencing the speed and smoothness with which personal pronouns are learnt in language production. For example, peer input provides the opportunity for the child to observe shifting person reference in other dyads; further, the confrontational input
is a facilitating factor to direct the attention of the child to both the form and the function of personal deixis.

The error-free development of the English pronoun system might further lend support to Meisel’s hypothesis (1990, 18) that bilinguals tend to focus more on formal aspects of language and are therefore able to acquire certain grammatical construction faster and with fewer errors than many or most monolinguals.

The data also show that the child seemed to be acquiring pronominal systems in a language-dependent manner from early production onwards (1;7). However, Zhu and Li (2005) caution us that separate development of the bilingual child’s two languages does not necessarily mean that the two languages of the bilingual child are developing in the same way or at the same speed. The present study shows that the Mandarin-English bilingual child appeared to follow a trial-and-error way in Mandarin which happens to be the stronger language of this bilingual child, and an error-free route in the pronoun development of his English, which happens to be the weaker language. In addition, the previously mentioned strategic approaches in Chapter 4 and 5 are observed to be apparent in James’ handling of two pronoun systems as well: an analytic approach in Mandarin but a synthetic one in English. The differences in preference for particular processing strategies to approach the pronominal systems in the two languages may make the linguistic development of this bilingual child seem quite different in his two languages. This study attempts to uncover how individual preferences in mode of processing affect these developmental processes in regards to pronominal development.

The present in-depth case study provides a realistic account of the processes in pronominal development. This research on the bilingual child’s pronominal development allows us to pay attention to general and the particular developmental processes at the same time. Thus, the combination of the state of the child’s own developing system at any particular time and his/her sensitivity to certain forms in the input explains why common trends can go hand-in-hand with patterns of individual variation.
I hope that this research helps shed some light on how the child builds up language representations for the two language systems as well as on the complexity of a child’s early development of form-function mapping in two languages when growing up in a bilingual context.
7 Conclusion and Implications

7.1 Introduction

In this thesis I have presented the findings of the case study in terms of its possible empirical and theoretical implications. In this chapter I will summarize those findings in the context of their possible implications for the study of language acquisition study in general (7.3) and for the study of bilingual acquisition in particular (7.2). The chapter concludes with a discussion of implications and directions for future research (7.4).

7.2 Implications for bilingual language acquisition

7.2.1 Separate Development Hypothesis vs. Fusion Development Hypothesis

Studies of bilingual first language acquisition have been dominated by the question of whether children acquiring two languages simultaneously start out with one fused linguistic system that later separates into two, or whether they have separate systems from the very beginning. Most of the studies have traced the simultaneous acquisition of Indo-European language pairs by children from families in which the parents practise a one person, one language strategy of interaction with their child. My case study consists of the speech data of a bilingual child from the onset of speech at 1;7 until 4;6. This case study investigates a particular type of bilingual child who is in context-bound situations. In reality, this type of bilingual child is the representative of the majority of children in immigrant families. Among these families, separate language patterns as well as code-switched ones are common practice. Moreover, this study examines the issue of the Separate Development
Hypothesis vs. Fusion Development Hypothesis in typologically distinct and genetically dissimilar language pairs, namely Mandarin and English.

In Chapter 4, in order to test the validity of the Separate Development Hypothesis, the issue of subject realisation and word order patterns was addressed in the context of the general syntactic development of the bilingual child (James) in his two languages. The major findings of this study are that James’ word order patterns followed a strong \{S\}VO order which reflects the basic syntactic rule of Mandarin. In addition, there were no major qualitative differences between James’ use of Mandarin word order and that of his monolingual Mandarin-speaking peers. In English, James consistently used subject in declarative sentences and there was hardly an instance of null-subject sentences in his data. James’ developmental route coincides qualitatively with monolingual English data in areas such as the acquisition of word order, the appearance of determiners in noun phrases, and the realisation of prepositional phrases, even in adverbial complementation.

To summarize, James’ most common clause structure in Mandarin for the whole period under study was –V(O), with the verb marked for aspect without an overt subject. In the case of his other language, English, his preferred structures were SVO and SVC, with few inflections marked in lexical verbs. There is no trace of transfer of pro-drop knowledge from Mandarin to English; subject realisation is categorically present in James’s English. It is apparent that James follows language-dependent development in these areas of syntax.

Moreover, the finding that the word order patterns in James’ main clauses did not depart from those used by speakers of either of his languages, whether children or adults, is of the utmost significance. It is indicative that James’ use of word order developed separately for each of his two languages. James’ differential use of subjects in Mandarin and English provides support to Valian’s (1991) finding that monolingual English-speaking children use subjects more frequently than monolingual Italian-speaking children. It is also parallel to Ingram’s (1992) finding that his English-speaking subject, Sophie, produced subjects much more often than his Japanese-speaking subject, Yuko. It is also comparable to Juan-Garau and Pérez-
Vidal’s (2000) finding that their bilingual child, Andreu, produced subjects in English much more often than in Catalan.

Berman and Weissenborn (1991) report similar findings with respect to the issue of subject realisation or absence. They report early development of adult-like subject realisation among their 17 monolingual French-, German- and Hebrew-speaking subjects. (These languages all differ in subject realisation.) Berman and Weissenborn also emphasize the continuity in word order acquisition between child and endstate grammars. The idea is supported by the rarity of straightforward word order errors they encounter, a finding also paralleled in this present study. De Houwer (1990), who looks at word order in general without touching upon the question of null subjects, reaches a similar conclusion for Kate, a Dutch-English bilingual child. De Houwer concludes that the acquisition of word order patterns that are different in the two adult systems proceeds in a language-dependent manner with no major cross-linguistic overgeneralisations or under-extensions. She takes this as evidence that the Separate Development Hypothesis, which was found to be of great relevance in the area of morphology, also holds in a crucial area of syntax (De Houwer, 1990, 280). Given that James has a strong pro-drop tendency and that it is in the language James developed at an earlier age (Mandarin), one could have expected to find an overgeneralisation of the Mandarin –V(O) pattern to English with an accompanying under-extension of the SV(O) pattern in the latter language. Yet this did not occur at any point in the child’s development. In fact, the pattern of data suggests the absence of any major influence of one language on the other. In other words, James seemed to be acquiring word order patterns which are different in the Mandarin and English adult systems, in a language-dependent manner. He appeared to follow separate routes in his syntactic development in each language.

How could this happen? The explanations are provided by De Houwer (1990, 281) where an early syntactic mode of processing, also emphasized by other researchers (Meisel, 1986), is at the core of early word order differentiation in English and Dutch: “It is partially because the child attends to the purely formal aspects of the input that she is able to produce two closed language systems from very early on.” We may speculate that the bilingual child’s sensitivity to specific features of
languages might be the main force for him/her to differentiate/separate his/her two languages. Even if separate and code-switched inputs co-exist in his/her linguistic environment, the bilingual child’s sensitivity to the contextual information in the separate and code-switched inputs might contribute to his/her analysis of the different linguistic data.

In Chapters 4, 5 and 6, I addressed bilingual acquisition strategies, an area which has been relatively neglected in the literature to date. Bilingual acquisition strategies are important factors which may contribute to the separation of the analysis and representation of bilingual children’s two languages. In Chapter 4, James’ development in English showed a slot-and-frame/top-down approach in comparison to his item-by-item/bottom-up construction in Mandarin. It is suggested that this is not very different from the approaches of monolingual children since James’ Mandarin-speaking counterparts are reported to employ an item-by-item approach to multi-word combinations (Erbaugh, 1982) whereas his English-speaking counterparts are observed to adopt these two approaches to break into multi-word combinations (Pine & Lieven, 1993). In tracing James’ nominal and pronominal development in Chapters 4 and 5, we found that this Mandarin-English bilingual child adopted dissimilar approaches or strategies to the personal reference systems and pronoun systems in his two languages: an analytic approach in Mandarin but a synthetic approach in English. In my view, his two distinct approaches to his two languages reflect the complementary functions of his two languages in different contexts, e.g., separate uses of languages with separate though complementary values, domains of activity and everyday situations. His top-down approach to English as his weaker language does not render the claim tenable that the bilingual child makes use of the syntactic structures of the stronger language when creating sentences in his/her weaker language. In addition, the bilingual child pools his resources in order to meet the demands of communication, thus the nature of the actual context for the bilingual child’s speech affects the child’s processing and use of the two languages (also see Lanza, 2000, 134). This further demonstrates that the bilingual child has an ability to push the limit of his/her linguistic competence without either mixing his/her two languages or transferring his one language to the other.
In sum, our analysis of data clearly shows that the Separate Development Hypothesis bilingual process which is designed for the one-parent-one-language condition in the morphosyntactic area is also applicable to the type of bilingual child who has context-bound exposure patterns and uses two acquisition strategies to represent his two typologically distinct languages.

7.2.2 The interaction of two languages

We have demonstrated that in the area of syntax, the bilingual child James developed his two languages in distinct, language-dependent ways. Chapters 5 and 6 provided evidence that there are no interdependencies or transference effects manifested in the areas of nominal self-reference and pronominal reference. As discussed in Chapter 2, however, the issue remains that as discussed by Zhu and Li (2005) among others, similarities between bilingual and monolingual acquisition do not necessarily mean (i) that the two languages a bilingual child is acquiring develop in the same way or at the same speed, or (ii) that the two languages a bilingual child is acquiring do not influence and interact with each other. Thus, the child’s two languages can be differentiated but each can still show influences of the other language.

There are four types of differences manifested in this bilingual child’s language development in the areas of syntax, transition from nominal reference to pronominal reference, and pronominal development. They are as follows:

*Flexibility differences:*

In Chapter 4, the data revealed that James experimented with more varied types of possible target word orders than his monolingual peers in Mandarin. For example, he explored the most possible patterns in Mandarin: -VO, SV, SVO, OV, and SOV. In the area of topicalization, James’ use of OSV is much earlier (age 2;3;16, MLU2.3) and relatively error-free in comparison with his monolingual Mandarin-speaking peers. Erbaugh (1982) reports that the variant orders emerged only at later
stages of Mandarin children’s development. His flexibility in the use of word order within the range permitted in the adult language shows an early sensitivity to surface cues to the underlying structure. His English at the same age period displayed less variation in finite verb forms, relatively few instances of auxiliaries and modals, and a limited range of fixed patterns of interrogatives and negatives compared to monolingual English data in children of the same age. James’ lesser exposure to English and the different demands in the contexts of his English language use may have led him to choose a different strategy to approach English, which may have resulted in his rigidity in English use. Meisel (1989, 25) has analysed two German-French bilingual children’s word order patterns, starting with Stage II, having an MLU around 1.75. He found SVO was largely predominant in both languages, from the multi-word phase through all of the period investigated. Word order is thus markedly less variable than in the speech of monolingual French and German children. The word order patterns from Meisel’s study (1989) resemble James’ word order patterns in English while James’ Mandarin displayed more flexibility in word order.

Rate differences:

It is worth noting, however, that James’ rate of acquisition was different from that of monolingual children in some areas of development if chronological age is the yardstick used. In addition, his two languages did not proceed at the same rate either. In Chapter 4, we found that James’ syntactic development in English lagged approximately one year behind his development in Mandarin language. James’ development in English similarly lagged about one year behind that of his monolingual English-learning peers. Chapter 6 displayed that his person pronoun development was later in both English and Mandarin (around one year behind) compared to the respective monolingual peers.

Route differences:

The availability and use of translation equivalents in a context-sensitive way have been considered as important evidence as to whether the bilingual child has fusion
lexicon or dual lexicons in Stage I (single word stage) (see Quay, 1995; Deuchar & Quay, 2000). Researchers found translation equivalents available in bilingual children even at age 1;10, even in those children whose researchers claimed that a bilingual child must go through a fusion lexicon in Stage I, e.g., Leopold’s daughter Hildegard, and Volterra and Taeschner’s informants Lisa and Giulia (Genesee, 1989; Quay, 1995). In Chapter 5, we observed that James had no translation equivalents in his lexicons in Stage I. His vocabularies with English and Mandarin targets have distinct distributional and compositional contents. In Mandarin, concrete nouns, especially names for kin relations, constitute about 59% of the total nominals. Names for kin relations in Mandarin appear to serve as entry points to referential language. His English lexical system, on the other hand, consists of only 2.6% nominals in the first 50 words produced, compared to 97.3% for relational terms and sounds/routines. Actually there is only one kinship term which emerges in English: ‘father’ (two tokens), however it refers to a man in a book only. Other terms for animate and object entities are not produced. There is no record of any other person-referring expressions while the proportion of relational terms and formulaic phrases, as we have seen, is significantly high in his early English. There are no translation equivalents recorded in James’ very early vocabularies, that is, in Volterra and Taeschner’s Stage I (1978). However, his uses of Mandarin and English vocabularies are context-sensitive, that is, his lexicons function in complementary distribution by domains, e.g., Mandarin for daily routines at home but English for book reading, outings, etc.. The composition and use of James’ lexicon suggest that the non-availability and non-use of the translation equivalents in a bilingual child does not indicate that the child has a fusion lexicon in Stage I. In other word, translation equivalents may not be good evidence to argue for dual lexicon systems in early bilingual first language acquisition.

Chapter 6 showed that the order of pronoun acquisition in James’ Mandarin neither resembled his pronoun acquisition in English nor matched the data of his monolingual peers, in which the third person pronoun 3p emerged first while the first and second pronouns come later. Furthermore, Chapter 5 and 6 provided evidence that James’ nominal person reference and pronominal reference was learned by trial-and-error in Mandarin (which happened to be James’ stronger language) while his
nominal person and pronominal reference was error-free in English (his weaker language). For example, the co-existence of two forms of self-reference in Mandarin, using self names according to a functional specification of uses, has never been reported in either Mandarin or English monolingual data. The analysis of James’ data throws doubt on the generalisation of Schlyter’s findings (1993, 305): “This indicates that the stronger language in a bilingual child is exactly like a normal first language in monolingual children, whereas the weaker language in these respects has similarities with a second language.” My analysis revealed that the bilingual child attended to the interplay between formal and functional aspects of pronoun acquisition. The error-free process of James’ pronoun acquisition in English lent support to Meisel’s hypothesis (1990, 18) that bilinguals tend to focus more on formal aspects of language and are therefore able to acquire certain grammatical construction faster and with fewer errors than many or most monolinguals. Finally, individual differences in the degree of ‘cautiousness’ in each child may play a role as well, such that the child who prefers formal accuracy to fluency may wait until he or she feels confident to produce target forms accurately.

Differences in language acquisition strategies:

As discussed in Section 7.2.1, the strategic approaches previously mentioned in Chapters 4 and 5 are observed in James’ handling of two pronoun systems. Differences in language processing strategies were also evident in Chapter 6 which demonstrated that James showed an analytic approach in Mandarin but a synthetic one in English. The differences in preference for particular processing strategies for the syntactic and pronominal systems in the two languages may make the linguistic development of this bilingual child seem quite different in his two languages. This study has shown how individual preferences in mode of processing affect these developmental processes in regards to syntactic and pronominal development, e.g., nearly all pronouns went through a formulaic phase in James’ English. This study suggested an interaction between processing mechanisms (which are common to all children) and the structure of the input which different children in different learning contexts are receiving and processing.
7.2.3 Methodological contribution

Researchers in monolingual development have found that there is a strong relationship between the number of patterns which have their origins in unanalysed phrases and the proportion of frozen phrases in the child’s first 100 words (Pine & Lieven, 1993, 568). Like the proportion of common nouns in children’s early vocabularies, Pine (1990) found that the proportion of frozen phrases did not tail off, but in fact significantly increased between 50 and 100 words. The present study has included data in larger chunks, such as formulaic units. This has provided a framework for addressing the continuity and change in development, the relationship between two languages’ differences at the single- and multi-word stages. In the literature on monolingual and bilingual acquisition, researchers are recommended not to count formulaic usage of a child’s language; only productive units are to be considered in investigation of aspects of child’s linguistic development. Thus, in contrast to Bates, Bretherton & Snyder’s claim (1980, 223) that the acquisition of unanalysed phrases early in vocabulary development “leads nowhere”, the present study provides strong support for Barrett’s (1989) distinction between analytic and synthetic routes to multi-word speech, and is able to chart the emergence of the kind of productive positional patterns described by Braine (1976) from initially unanalysed phrases (also see Pine & Lieven, 1993). Moreover, the present approach suggests that the acquisition of frozen phrases may not only help the transition from single- to multi-word speech, but also that the use of such a strategy has an advantage in increasing the bilingual child’s capacity to avoid mixing or transference in his/her language choice and use. This implies that we may need to reassess the unit of analysis for bilingual data: formulaic phrases such as the slot-and-frame patterns which result from a strategy may provide children with crucial distributional information which allows them to be sensitive to language-specific features and to construct categories out of them.
The analysis of James’ formulaic data shows that it is a useful methodological tool for investigating the nature of mechanisms which are central to the normal process of bilingual language development.

7.3 The study of bilingual acquisition contributes to debates about monolingual acquisition

The analysis in Chapter 6 challenged Clark’s name hypothesis (1978) and Charney’s person-in-speech-role hypothesis (1980) by demonstrating that the third person pronoun 3p in Mandarin can be acquired first in domain-specific ways in a bilingual child’s speech data. Although inconsistent errors were observed, there were no systematically misused pronouns in the entire corpus of the bilingual child’s Mandarin and English. This systematic analysis provides insights into the theoretical understanding of the mechanisms by which children learn personal pronouns. For instance, the close appearance of three forms of personal pronouns after age 3, especially the observation that in Mandarin 3p comes first than 1p and 2p, indicates that semantic complexity does not override other factors in determining acquisition, since the order of emergence does not correspond to the order of complexity or to the pattern of relationships in semantic analyses of pronouns, e.g., 1p first, 2p second then 3p. The results seem to support Chiat’s speech role hypothesis (1981; 1986), namely, that the bilingual child seldom confuses different persons with each other and seldom confuses pronominal categories with non-pronominal categories. In other words, the bilingual child has no problem with the speech role function of pronouns. Reversals in production were rare in the initial stages of pronoun acquisition and occurred only in identifiable contexts. This might indicate that for this bilingual child, pronouns were comprehended correctly before they were produced, although we do not have comprehension data to substantiate this claim. The phenomenon of reversals in this bilingual child is a complex one, which is not due simply to linguistic or cognitive immaturity or to imitativeness as in Clark’s ‘person hypothesis’ or Charney’s ‘person-in-speech role hypothesis’. There are only a few instances of reversals in this bilingual child’s pronoun development but they are all in Mandarin, not English. A close examination of the reversal patterns in the
conversational contexts reveals that reversals may be due to different processes at different stages of development in normal children’s acquisition of pronouns, e.g., reversals may reflect that the newly entered pronoun form competes with the old established pronoun form and has not been stabilised, such as the reversals of 2p with 1p at the time when 2p has just emerged. Later reversals are likely to occur under high linguistic and performance demands. A close analysis of the contexts in which the bilingual child acquires 1p, 2p and 3p in pairs of two syntactically and pragmatically different languages (e.g., Mandarin and English) could throw light on how children assign meaning to these forms. The data suggest that syntactic, pragmatic and input factors are all involved in influencing the speed and smoothness with which personal pronouns are learnt in language production. For example, peer input provides the opportunity for the child to observe shifting person reference in other dyads; further, the confrontational input is a facilitating factor to direct the attention of the child to both the form and the function of personal deixis.

In sum, the findings from this study resulted from an investigation into areas of bilingual first language acquisition that were not systematically studied in previous research. The literature review showed that the issues of types of bilinguals, input, context, dominance and the weaker language, and especially acquisition processing strategies, had not been carefully studied in bilingual language separation and interaction. Unlocking the interplay of these factors can also shed light on language acquisition in general. The study on pronoun acquisition demonstrated that in the child’s acquisition of language, the meaning of an utterance for a young child is not drawn exclusively from the utterance but rather the meaning is communicated by an array of environmental and conventionalized features of which the formal structure of the utterance is only one (Olson, 1977, 183). The study further revealed that experiencing different types of input influences the speed and smoothness by which personal pronouns are learned in language production. In addition, different learning contexts provided an opportunity for the bilingual child to utilise his language processing strategies to reach the target form-function mapping of pronouns in his two languages.
7.4 Implications for future study

This study is grounded in a framework that takes the individual person as the basic unit in psychology, which is in line with Stern’s (1927) approach that development is a process of differentiating distinct domains out of a “psychophysical uniformity”. Stern’s position is not at all “modular” in the modern sense. Only in-depth case studies can provide a realistic account of processes ongoing in development. Bilingual children themselves are in control of social variables (Slobin, 1973; Meisel, 1989; De Houwer, 1990). This research strategy allows us to pay attention to the general and the particular developmental processes at the same time.

Bilingual acquisition research cross-fertilizes what is known about general language acquisition. Inclusion of comprehension data in bilingual children’s pronoun acquisition can strengthen the arguments on the three hypotheses concerning the rule children develop in learning pronouns: the name-role hypothesis, the person-in-speech-role hypothesis and the speech-role hypothesis. Investigation of English person pronoun plurals in later development can provide insights into our understanding of pronoun number and case development in extra- and inter-linguistic contexts.

Bilingual acquisition is complex and much remains to be done. There are variations arising from different language combinations and different amounts and kinds of exposure that remain to be explored (Genesee, 2003, 224). Future study should pay more attention to different types and degrees of early childhood bilingualism, which may affect the acquisition of the two languages. Furthermore, studies of two typologically close languages may provide the potential to examine whether the different strategies evident in two typologically distant languages such as Mandarin and English will be present in the same way and to the same degree in other pairs of languages.
Bibliography


Chiat, S. (1982). If I were you and you were me: the analysis of pronouns in a pronoun-reversing child. *Journal of Child Language*, 9, 359-79.


APPENDIX I

Transcription Conventions

1. Enter first the speaker code eg.
   A = informant (A. Auchee/James)
   R = interlocutor (R. Ruying)
   G = interlocutor (G. Grandmother)

2. After typing in the speaker code enter only a tab (i.e. press tab key on the computer’s keyboard). No other characters (only a tab character) are allowed between speaker code and beginning of turn for that speaker. This allows the computer to identify unambiguously each turn and speaker.

   After the first speaker notation and tab are entered, start transcribing what you hear on the tape player. Continue writing on a linear basis from left to right until the end of turn of that speaker. But what is a turn?

   **Turn** here refers to a normally continuing utterance of a speaker (including pauses), until the interlocuter (i.e. the other participant in the interaction) either takes his/her turn where he/she judges to be the end of the first speaker’s utterance or interrupts the first speaker’s utterance in order to take his/her turn.

3. At the end of the turn press the return button (i.e. press return or paragraph key). Then, again (new speaker) speaker notation, tab, turn and return, e.g.

   A what’s your name? my name is James
   Y what’s your daddy’s name?

4. There should be no punctuation marks except for question marks when the speaker appears to indicate a question (e.g. by rising intonation) as in example above.

5. No capital letters except for proper names and the pronoun for the first person singular “I” and the expression OK. e.g.
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   A what’s your name? my name is James
   Y what’s your daddy’s name?

4. There should be no punctuation marks except for question marks when the speaker appears to indicate a question (e.g. by rising intonation) as in example above.

5. No capital letters except for proper names and the pronoun for the first person singular “I” and the expression OK. e.g.
are you OK now?

(notice that there is no capital letter at the beginning of turns and no full stop at the end)

6. Pauses are indicated by one dot (corresponding roughly to a hesitation pause or a pause usually represented by a comma in ordinary writing) or two dots if it is a longish pause (corresponding roughly to a full stop pause in ordinary writing). If there is a pause longer than those two, just write (long pause) in brackets, e.g.

A en. wo3 enn yao4 mei3..enn (long pause)

7. Standardise (i.e. write using always the same string of characters) all discourse/interaction sounds marking, e.g. hesitation (um, uh, unn, erh), confirmation and encouragement (mhm), clarification requests (mm? ern?) and mild surprise (ou, oh). Write numerals in words (not figures).

8. Syllables which cannot be transcribed because the transcriber can not hear or understand them are placed inside round brackets with an (X) for the unclear syllable or word and three Xs for longer stretches (XXX).

9. Also any comment by the transcriber will be enclosed in brackets, e.g.

A this one? (informant pointed to a ball in the basket)

10. Avoid any special formatting whatever in the transcript and make one copy of it (SAVE AS) Text Only (for analysis) and one with numbered turns (for reference). Make backup copy on a different disk.

The following is a short example of a transcription taken from James’ recording session 2 at age 1;8;02.

(A = James, R = Ruying, the mother)

R lai2 huan4 niao4bu4 (Come to change your nappy)
A  no. bi4 yao4. bi4 yao4. (No. Don't want. Don't want.)

R  po2 ne? (Where is grandma?)

A  po2. zai4 jia1.

R  ma1ma ne?

A  e.. e..

R  ern?

A  ma1ma zai4 jia1

R  na Yi2 ne?

A  yi2 zai4 jia1

R  ba1ba ne? ai. ai. ba4ba ne?

A  ern? (XXX)

(adopted from Di Biase, 1998, 29)
APPENDIX II

Typological Differences
between Chinese/Mandarin and English

Chinese/Mandarin is often called an isolating or an analytic language, according to early 19th-century terminology that has yet been supplanted (Comrie, 1989). The Chinese word (zi4, character) is largely coterminous with the morpheme, which cannot be further analysed into components. Word order and word choice vary by independent words rather than bound grammatical morphemes (Norman, 1988, 7-12, 84-87). This key typological feature of Chinese determines that in many ways Chinese is different from a less-isolating, less-analytic language, such as English. For example, grammatical relations in Chinese cannot in general manifest themselves by means of affixes or morphological changes within the word itself, but are often shown by word order and by the use of grammatical particles. For example, in English, a past tense morpheme makes a vowel change between sit and sat, and adds a suffix for looked. The -ed past tense morpheme cannot function as a full word and is phonetically bound to the verb; the vowel change is an abstract rule, not a word at all. The English subject first person pronoun is I, but me is the only grammatical choice for a direct object. But in Chinese/Mandarin, the same verb is used for past and present tense, the same pronoun Wo3 (1st singular) for both masculine and feminine, for subject and direct object. In what follows, only those features of Mandarin are presented which are considered relevant to the present study, with English held in contrast.

A topic-prominent language

A persisting problem for language typology scholars comparing English and Mandarin is the lack of a workable grammatical framework which can accommodate both languages (Li & Thompson, 1976). This is largely because the fundamental
principles that govern the intrasentential relations for the two languages respectively are different. In English, there are “purely syntactic relations contracted between a noun phrase and its predicate” (Comrie, 1989, 65) as reflected in such concepts of grammatical relations as “subject” and “object”. Word order and intra-sentential relations are thus largely determined by syntactic structure. In Chinese, on the other hand, purely syntactically governed relations are lacking. “Subject” is not a structurally definable notion” (Li & Thompson, 1981, 19), nor is “object”. Factors other than grammatical relations seem to have an important role in determining the order of major constituents with respect to the verb. Within a linguistic framework, Li and Thompson (1976, 1981) suggest that such factors are semantic and pragmatic considerations. It seems quite obvious that while English grammar can fit into the mainstream syntactic theories, they can hardly handle Chinese grammar with equal adequacy.

The study of Topic Prominence (TP) and Sentence Prominence (SP) typology was first initiated by Li and Thompson (1976, 1981). It was later revised by Huang (1984). They all suggest that TP/SP differences are mainly grammatical in nature at the sentence level. For the purpose of this thesis, the following three features common to TP/SP are outlined so as to demonstrate the typological differences between Mandarin and English especially in Spoken languages, which include the characteristics of phrase-structure (PS) rules, the distribution of empty elements and the presence and absence of double nominative constructions (details see Jin, 1994, 104-105).

PS Rules: In Mandarin, a topic is a basic unit of a sentence, whereas in English, a subject is a basic unit. The two languages follow the PS rules as described by Huang (1984, 98) in Example 1:

1. Mandarin:  
   a. $S' \rightarrow \text{Topic } S$
   b. $S \rightarrow (NP) \ VP$

2. English:  
   a. $S' \rightarrow (\text{Topic}) \ S$
   b. $S \rightarrow (NP) \ VP$
The rules in Example 1 illustrate that perhaps topic, not subject, is obligatory in Mandarin, whereas the reverse holds true in English.

*Empty Elements:* As a TP language, Mandarin allows empty elements to occur in any one of three syntactic positions – topic, subject, and object (Huang, 1989) – as in Example 2. English is a SP language that does not allow any of these three types of empty elements in a sentence.

2. Speaker A: 
   Ni3 yao3 pin2guo3 ma?
   You want apple?
   (Do you want apples?)

   Speaker B: 
   Yao4.
   Want.
   ([I] want [it].)

In Example 2, Speaker B dropped *I*, which functions as both the topic and the subject; he/she also leaves out *it*, the object of the sentence.

*Double Nominative Constructions:* In Mandarin, it is common to have double nominative constructions. A pause is often inserted between the two nominatives. The first nominative is used as a topic and the second as a subject. The topic and subject in double nominative constructions can be noncoreferential as in Example 3a or coreferential as in Example 3b. In English, double nominative constructions are possible, but infrequent compared to Mandarin. Many English speakers, however, consider them to be ‘odd’ as in Example 3c.

3a. Na4 ge ren2 ta1 ma1 bing4 le.
    That man his mother sick.
    (That man’s mother is sick.)

3b. N4 ge hai2zi ta1 hen3 tao2qi4.
    That child he very naughty.
    (That child is very naughty.)
3c. *That man his mother is sick.

To sum up, a structural contrast between Mandarin and English demonstrates that Mandarin is a Topic Prominent type of language whereas English is a Sentence Prominent type. This tendency is reflected mainly in PS rules, null elements and double nominative constructions.
APPENDIX III

Mandarin

Age 2: 2;0 – 3;0;01

Distribution of form and function pairing of *zhe4 (this) & na4 (that)

<table>
<thead>
<tr>
<th>Form</th>
<th>Referential</th>
<th>Locative</th>
<th>Temporal</th>
<th>Determiner</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zhe4 (this)</td>
<td>6</td>
<td>1</td>
<td>0</td>
<td>7</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>2;06;25 – 3;0;01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zhe4-ge4 (this one)</td>
<td>3</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Na4 (that)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1 (Echo)</td>
<td></td>
</tr>
<tr>
<td>2;11;17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Zhe4 (this) always refers to inanimate entities.*
**APPENDIX IV**

**Mandarin**

Age 3: 3;0;07 – 4;0;0

Distribution of form and function pairing of *zhe4 (this) & *na4 (that)

<table>
<thead>
<tr>
<th>Form</th>
<th>Referential</th>
<th>Locative</th>
<th>Temporal</th>
<th>Determiner</th>
<th>Other</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zhe4 (this)</td>
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<td>7</td>
<td>0</td>
<td>19</td>
<td>2</td>
<td>102</td>
</tr>
<tr>
<td>3;0;07 – 3;11;14</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Zhe4-classifier (this classifier.)</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Zhe4 –ge (this one)</td>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Na4 (that)</td>
<td>0</td>
<td>1</td>
<td>4</td>
<td>2</td>
<td>0</td>
<td>7</td>
</tr>
<tr>
<td>3;03;03 – 3;11;14</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Zhe4 (this) always refers to inanimate entities except for two instances that refer to ‘bird’ and ‘elephant’ in a book, in session 40 (age 3;02;16). This signals development towards a more adult-like usage.*