Housing: an infrastructure of care

I. Introduction

Domestic houses are hubs of care practices and relations. These range from the often intensive and intimate labour of child and elder care to housekeeping and self-care. The domestic house is also an anchor for community-based caring practices, as, for instance, neighbours keep an eye on each other’s homes, care for pets and children and support older neighbours to age in place.

Existing analyses show the profound gendering of domestic care work (Tronto, 1993, Kittay, 1999, Lynch, 2014). There are also significant bodies of work examining the interpersonal, material, spatial and temporal dynamics of care within the private home, and which foreground how care practices are shaped, and in turn inform, the socio-material and socio-temporal dimensions of home (Dyck, 1990, Dyck, et al., 2005, Milligan, 2009, Hale, et al., 2010, Twigg, 2000, Blunt and Dowling, 2006, Hayden, 1986, 1981). Collectively these bodies of work identify the domestic home, firstly, as a central location for care work, and secondly, as a space and locus of meaning that informs the performance of care. However, they also point to a broader articulation between care and housing that remains substantively under conceptualised: the degree to which housing (both individual houses/ homes and the broader housing system) articulate with care, supporting or hindering the capacity of households to care. In this paper, we propose a new conceptual framework for understanding these connections, arguing that housing is an infrastructure of care.

Informed by the recent ‘infrastructural turn’ (Amin 2014) we conceptualise infrastructures not as pre-figured objects or necessarily public, capital goods, but as dynamic patterns that are the foundation of social organisation (Star 1999). We posit that housing patterns care across three central domains, considering how care is iteratively shaped through housing materialities,
markets and governance. Understanding infrastructures as sociotechnical systems, new infrastructural analyses attend to how infrastructures pattern social life and identify the values that are selectively coded into infrastructures, (re)producing social difference through use. To think housing this way we ask, firstly, how does housing pattern the organisation and practice of care across scales? Housing as care infrastructure, we argue, dynamically structures the possibility of care giving and receiving from the individual to the household and social scale. As housing systems change so do possibilities for care. Second, we consider the relational politics of care through housing, considering how housing systems create difference in care opportunities according to social position. This is to question how care is ordered through housing, to what effect and to whose benefit. Third, we consider where and how care is located in housing. We expand beyond analyses of housing as a location of household care work, to consider the operation of care in the broader housing system, identifying how care (and neglect) flows through housing materialities, modes of governance including the work of policy agents, and housing markets. This opens a substantively new direction in housing scholarship, identifying housing as a sociomaterial assemblage that is constitutive of care. We conclude with a provocation, asking how housing might be reworked to be a more equitable care infrastructure.

Limited knowledge of the articulation between housing and care reflects two significant research gaps. First, the absence of housing as a consideration within critical care research (see for example Cantillon and Lynch, 2016, Kershaw, 2005, Sevenhuijsen, 1998, Tronto, 1993, 2013, Kittay, 1999). While domestic care has been a primary concern within this literature, and the home appears as a container for this work, there has been little detailed consideration of how housing shapes care practice. Second, the conceptual split between scholarly studies of housing and home means that care has not been a concern of most housing research. This schema has
seen housing markets and supply, financial security and housing governance examined within housing research, while intimate domestic practices, including care, have been a concern of work on home (Jacobs and Smith, 2008, Smith, et al., 2004, Smith, 2005, Smith, 2008, are important exceptions). The framework that we propose in this paper seeks to forge connections between care, housing and home through centring care within an analysis of the house-as-home.

Limited philosophical and political conceptualisations of the connections between housing and care also make the caring role of housing less visible. We focus our discussion in this paper on traditions in western liberal welfare states such as Australia, Canada, the US and UK. In these contexts, the privatisms of both care and home is a central, and mutually reinforcing, feature of philosophical and political thinking. Understandings of care as a private domestic practice have historically supported the absence of care as a public political concern (Tronto, 2013). The imagined privatisms of home has reinforced this construction, rendering domestic care invisible within the public political imagination and prioritising the creation of housing and housing-connected policy that does not ‘interfere’ in everyday domestic practice. The privatisms of care also supports a connection between care and dependence, with care conceptualised as the province of the needy and vulnerable. Able-bodied adults are assumed to meet their needs privately (including through housing choice), while those who fail to do so are constructed as having failed in their responsibility for self-care. The marketisation of care and housing intersects with these discourses in significant ways, driving an understanding of care as a market good and informing growing political emphasis on home as a privatised asset base for funding welfare needs across the life course (Tronto, 2013, Smith, 2008). The perceived privatisms of care in liberal and neoliberal traditions obscures relational caring practices and the role of housing systems in care from the political – and research – imagination (Lynch, et al., 2009). It is these
connections that are elucidated through our conceptualisation of housing as an infrastructure of care.

To conceptualise housing as an infrastructure of care involves, “making visible neglected activities we want to see more ‘valued’” (Puig de la Bellacasa 2017, p12). At a time when housing and care are being collectively reworked through neoliberal market logics (Smith, 2005) reconceptualising housing through an ethic of care is an effort to make visible, re-vision and re-value the caring possibilities and constraints of housing, to ask how housing systems enable or constitute a barrier to relational care within households and understand the “divergent modes of valuing care” that operate through housing (Puig de la Bellacasa, 2017, p.12, and see also Harding, et al., 2017). These are political questions about the ways that care is imagined and patterned through housing systems.

In the following section we introduce our infrastructural approach and then housing as an infrastructure of care. We next re-read existing housing scholarship through an infrastructural lens whilst identifying new directions for housing research that emerge through this conceptual focus. We draw the threads of this work together in section III where we consider the implications of our infrastructural re-reading of housing and care. We conclude by exploring how housing systems might better support the work of care.

II Infrastructural turns
Thinking about housing as an infrastructure has currency in Australia, our research location, at the moment. Researchers at AHURI (Australian Housing and Urban Research Institute) are conducting a multi-phase inquiry into whether social housing should be considered an infrastructure (AHURI, 2018); Jenny Leong, a Greens Member of the NSW state government
recently argued for the need for “a shift in thinking”, “which would see public housing treated as an infrastructure investment much like public hospitals and transport” (Razaghi 2018); and prominent economist Saul Eslake gave a presentation in June 2018 on housing as an economic infrastructure. The attention paid to the notion of housing as an infrastructure is a result of increasing concern among many commentators about a housing crisis in Australia, with falling rates of home ownership, increasing housing stress, particularly for low-income households in the private rental market, and rising rates of homelessness. According to Berlant,

at some crisis times like this one, politics is defined by a collectively held sense that a glitch has appeared in the reproduction of life. A glitch is an interruption within a transition, a troubled transmission. A glitch is also the revelation of an infrastructural failure. (2016, p. 393)

Calls to consider housing as an infrastructure turn on efforts to revalue social housing as a public asset.

To think about housing as an infrastructure is, perhaps, controversial. As Graham and Marvin (2001) observe, infrastructure has normatively been reserved as a descriptive for networks that ‘integrate’ urban spaces. Transport networks, water and electrical grids, telephone networks and streets that “bind cities, regions and nations into functioning geographical or political wholes” (Graham and Marvin, 2001, p.8) are differentiated from “point-specific urban services like shops, banks, education and housing” (p9) in understanding infrastructure. More recently, researchers have differentiated between ‘hard’ and ‘soft’ infrastructure. The former servicing economic needs, while the latter – libraries, schools, theatres, museums, parks and so on - support the “health, education and cultural standards of the population.” (Fourie, 2006, p.531).

Binding these forms of infrastructure is their public utility as “capital goods” that have “some public use.” (Fourie, 2006, p.531). Recent examples operationalising these understandings of
infrastructure include Marshall and Cowell (2016) and Obrien and Pike (in press). It is this conceptualisation of infrastructure—a public, capital investment with a claimed public benefit—that appears to underpin the recent calls in Australia to think about housing as infrastructure.

Our work in this paper is allied with what Amin (2014) terms the “infrastructural turn”. This turn is characterised by understanding infrastructures as sociotechnical tools and systems that organise and pattern the possibilities of urban social life including, we add, care (Amin, 2014, p.138). New infrastructural analyses question how infrastructures co-constitute urban social life, making it clear that sociality is “never reducible to the purely human alone” (p138). They also attend to the multiple social, cultural, corporate, and so on, interests that are selectively and politically encoded into the functioning of infrastructures, (re)producing social difference as they are incorporated into everyday routine. Infrastructures include:

physical and immaterial elements, usually intended to operate in the background, and [that] is intended to facilitate living and activity: in some cases, for the well-being of a population public good, social demand, in others, the profitable activity of businesses. What this framing makes clear is that the interest in infrastructure applies not only to technology or to literal immaterialized objects; it also includes a sense of systems, management, and energy, as well as planning and design—hence, discourse, symbols, and, arguably even affect. In many situations, these systems provide the structures on which sociality hangs (Wilson, 2016, p.273-274).

Berlant (2016, p.393) emphasises this (re)productive work, arguing that:

infrastructure is defined by the movement or patterning of social form. It is the living mediation of what organizes life: the lifeworld of structure. Roads, bridges, schools, food chains, finance systems, prisons, families, districts, norms, all the systems that link ongoing proximity to being in a world-sustaining relation. (Berlant, 2016)

These new conceptualisations which see infrastructures as dynamic patterns underpinning the organisation of social life are the starting point of our conceptualisation of housing as an
infrastructure of care. We draw particular inspiration from three lines of recent infrastructural inquiry.

First, there is growing interest in how infrastructures continuously structure social life (Latham and Wood 2015). The dynamic patterning of social form brings a forward-looking temporality to these analyses. Epistemologically this requires a focus on world making, on what infrastructural forms do in context and in relation to specific sets of actors and practices. As Star (1999, p380) argues, “infrastructure is a fundamentally relational concept, becoming real infrastructure in relation to organized practices.” Here, Star (1999) differentiates the cook for whom water systems are infrastructures that support the production of dinner, from the plumber for whom water systems might be an object of repair. At the same time Star is concerned with the practices that infrastructures make possible. Some objects fail as infrastructures if they are too difficult to use or integrate into existing practices and/or are not sufficiently appealing to transform practice. Others become invisible as they integrate more fully into the background of everyday life.

Second, there is growing interest in the relational politics of infrastructural doings, of how infrastructures both order and create difference. Recent works consider, for instance, how infrastructures both enable and limit activity according to social position and modes of inhabitation (Latham and Wood, 2015, Star, 1999). While infrastructures may enable some, they constitute a barrier for others. As Amin (2014, p139) argues,

> these differences and divisions are […] scripted into the workings of infrastructure: the rules and tariffs of supply, the socio-spatial decisions of providers, the selectivity scripted into software calculations of allocation […] (Graham et al., 2013).

Difference is intentionally and incidentally scripted through the normative production of dominant infrastructural forms, further marginalising bodies and practices that differ from the
norm. Infrastructures incorporate social concerns and ways of doing in their structures whilst also giving shape to social organisation. Difference in access, use and adaptability are the foundation of the politics of infrastructure, opening consideration of how practices and infrastructures are iteratively negotiated.

Third, there is growing attention to infrastructures as sociomaterial systems that can exceed human control, exerting diverse pressures on human bodies, identity, activity and affect in expected and unexpected ways (e.g. Amin, 2014, Bissell, 2014). They are systems that require care through maintenance and whose breakdown can significantly rework social organisation (e.g. Kaika, 2004, Bennett, 2010). At the same time infrastructures never simply determine social practice. Instead, individuals and groups can find space within infrastructures that were designed for different purposes or with exclusion in mind (Latham and Wood 2015). This can involve accommodation to or adaptation of infrastructural forms as well as prompting the emergence of new practices and politics as infrastructures are reimagined and reinvented (Amin 2014; Meehan 2014). In Meehan (2014) householders experimentally invent household-scale infrastructures to regain control over water capture and supply, while in Amin (2014, p156) informal infrastructural development not only meets the needs of those shut out of dominant modes of supply, but also reduces the power of the powerful “by adding more modes of organization and action into the political arena”. Infrastructures are thus not simply enabling or limiting, but can also become sites for political contest and change.

**Infrastructures of care**

Our contribution in this paper is to build on the infrastructural turn to theorise housing as an infrastructure of care. Infrastructures of care are the infrastructural forms that pattern the organisation of care within society, “the more or less embedded ‘tracks’ on which care may run,
shaping and being shaped by actors along the way” (Danholt and Langstrup, 2012, p.515). Our focus on housing is grounded in feminist care ethics and related efforts to excavate the “infrastructures of everyday life”, the “material and socio-cultural support structures” that enable the accomplishment of daily domestic routines (Gilroy and Booth, 1999, p.309). To make visible these infrastructures is a political move that entails recognising the importance of care. As Gilroy and Booth (1999) argue, these sorts of infrastructures have long been excluded from infrastructural studies.

Grounded in feminist care ethics, we understand care as:

> a species activity that includes everything that we do to maintain, continue, and repair our world so that we can live in it as well as possible. That world includes our bodies, our selves, and our environment, all of which we seek to interweave in a complex, life-sustaining web. (Fisher and Tronto, 1990, p.40)

These ethics foreground care as a relational practice, recognising that care is central to human existence and vital to the maintenance of life. As Puig de la Bellacasa (2017, p156) argues,

> for humans – and many other beings – to be alive, or endure, something, somebody, must be taking care, somewhere. One might reject care in a situation – but not absolutely, without disappearing.

Our interest is how housing systems organise the possibilities of care giving and receiving at a household and social scale.

We start then with the necessity of care and with the understanding that although people require different degrees of care at different times and in different places, everyone is involved in the giving and receiving of care across the life course (Tronto 1993). We recognise, however, that care entails diverse practices and feelings. It can be connected with “feel good’ or ‘nice feelings’” but is not reducible to these (Puig de la Bellacasa, 2017, p.147). Indeed, at times care
involves feelings of disgust and repulsion and can entail violence and oppression for both carer and cared for (Puig de la Bellacasa, 2017, Raghuram, et al., 2009, Robinson, 2001). Questions of power and difference are therefore central to analyses of care.

Our second starting point is to recognise that care is a relational process, an activity and moral practice or disposition that involves “reaching out to something other than the self” (Tronto, 1993, p.102) and which drives action rooted in “the concerns and needs of the other” (Tronto, 1993, p.105). It is a feature of interpersonal relations as well as set of practices and ethics that can operate within institutions and through social policy (Haylett, 2003, Kershaw, 2005, Sevenhuijsen, 2003, White, 2000) Care is not just necessary, it is a practice that holds people in relations of interdependence across the life course. The relational nature of care is, however, invisible within hegemonic liberal and neoliberal philosophies. Neo/liberal care philosophies instead understand care as a private practice for which autonomous and rational individuals are responsible and capable. These understandings have far reaching implications for the visibility and valuing of relational care work, the making of social policy and organisation of social welfare, as we explore later. Our third starting point is to recognise care as a sociomaterial practice that takes place in conjunction with actors that are not always human. These actors shape the nature of care relations and, in short, make care possible (Puig de la Bellacasa, 2017, Power, 2019). From these starting points we argue that care motivated housing analyses must consider the organisation of housing and care: the forms of care that are sustained through the organisation of housing as well as what forms of housing are valued and sustained through particular acts of care (Puig de la Bellacasa, 2017).

Infrastructural analyses and care ethics come together in this paper to support three central lines of investigation. First, to bring infrastructural studies to bear on questions of care is to ask how
infrastructural forms shape the possibility of care, supporting or inhibiting the relational interdependence that is the foundation of human life. We build here from recognition that care is given, received and made possible in conjunction with nonhuman actors. Danholt and Langstrup’s (2012) infrastructural analysis, for example, shows how medical care is advanced with an assemblage of actors including medications, medical aids, doctors, telephones and pharmacies. Their work is concerned with how the “ongoing enactment” of these medical infrastructures enables “caring spaces and caring selves” as well as giving rise, at times, to neglect (p516). We draw also on analyses that demonstrate how objects shape caring potential and practice. Waitt and Harada (2016), for instance, describe how the culturally privatised space of the family car shapes the enactment of family caring, while Clement and Waitt (2017, 2018) describe the emergence of a ‘mother child pram assemblage’ that enables mobile mothering. We attend to housing as a sociomaterial system that patterns the possibility of care, considering how housing materialities, markets and governance organise care giving and receiving. In doing this we work across conceptualisations of housing and home, moving beyond a separation that has characterised much housing research (Jacobs and Smith, 2008).

Second, we ask how care circulates through infrastructures and how care is translated through housing as an infrastructure of care. This line of enquiry brings two developments in care thinking to bear on infrastructural analyses. It moves, first, beyond an emphasis on interpersonal practices of care taking place within households to recognise care as an ethic that can be incorporated into professional practice (Askew, 2009) and shape institutional practices including policy making (Sevenhuijsen, 2003). It entails recognition that care can inform “‘caring’ public policy”, which supports the development of “institutional context[s] that facilitate the work of care” (White, 2000, p.1). It picks up, second, recent interest in the ways that care circulates
through the material world. Care, like neglect, circulates “not necessarily morally or intentionally, [but] in an embodied way, or simply embedded in the world, environments, infrastructures that have been marked by that care.” (Puig de la Bellacasa 2017, p121). Together these integrated lines of care analyses raise questions about how care (and neglect) flows through housing systems. This is to ask questions about the care functions of housing itself: of how care informs the constitution of housing systems as well as the ways that care flows, intentionally and unintentionally, through housing materialities, markets and governance (e.g. see Power and Bergan, 2018, on the integration of relational and neoliberal care ethics in social housing).

Third, and imbricated across the first two lines of enquiry, we consider the relational politics of care infrastructures. Infrastructures differentiate access along lines of social difference and “relations foster care for some things rather or more than for others” (Puig de la Bellacasa 2017, p166). This entails questioning how housing materialities, markets and governance shape and differentiate the giving and receiving of care: of who is imagined as care giver and receiver and the conditions under which care is given and received. Differences in access to care along the lines of race, class, gender and age deserve further attention as we discuss below.

To conceptualise housing as an infrastructure of care is not to assert a naturalised or simple relationship between housing and care or to assume that domestic care is done well. It is instead to recognise that in the western liberal welfare states there are cultural, practical and political connections between housing and care. Domestic housing is the normative site of essential everyday care work and it can be culturally and practically difficult to meet many basic care needs in the absence of housing. We are motivated by the expanded analytical and political possibilities for understanding housing and home that come from making visible the caring and infrastructural capacities of housing. Such an analysis, we argue, sheds new light on the failures
of the housing system to provide environments appropriate for care and opens the possibilities for new directions in housing policy.

II. Housing as an infrastructure of care

In the remainder of the paper we bring an infrastructural lens to existing work on housing, home and care, identifying how housing materialities, markets and governance pattern the organisation of care. We attend also to the relational politics of care through housing and identify directions for future research.

1. Materialities

More than a container within which people live and practice care, housing actively shapes inhabittance (Dowling and Power, 2012, Miller, 2002). Housing size, design, layout and fabrication inform how housing is lived by its residents and, we argue, the performance of housing as an infrastructure of care. The works we re-vision through our infrastructural lens in this section contribute an understanding of how housing materialities pattern the giving and receiving of care. They also raise broader questions about the care work of housing, foregrounding housing materialities as agents that shape possibilities for care along lines of social difference.

The spatial and gendered politics of domestic care are materially consolidated in the construction of home as a private, self-contained space. The replication of laundries and kitchens across individual homes is an ‘embedded track’ of housing infrastructure that reinforces care as a household scale activity. These design practices expand temporal demands on women’s time and are a material foundation of the gendered privatism of care (Hayden, 1986). However, housing does not determine care practice. As infrastructural studies show, there is need to understand how people use and find space within infrastructures designed for different purposes (e.g.
Latham and Wood, 2015). Dwelling in home entails processes of accommodation with the housing structure, as residents adapt their home to suit their needs and alter their practices to suit their accommodation (Miller, 2002). Domestic care practices require similar negotiations with material infrastructures that are more or less supportive of household needs. These practices speak to the emergent politics of domestic care and the potential for householders to remake dominant orders of privatised, gendered caring through reworking housing.

Studies of housing as an infrastructure of care can illuminate how care is negotiated within normative housing design. While framed in very different ways, the work of path breaking feminist housing researchers such as Ruth Madigan, Moira Munro, Susan Smith (Madigan, et al., 1990) and Sophie Watson (1988) alerted researchers to some ways that housing patterns care. For example, Watson (1988, p.24-25) identified the implications of housing design for women’s domestic caring labours:

> Although the sexual division of labour is embodied in the design of housing, this does not imply that housing suits women’s needs in their domestic role as housewife and mother. Women, particularly black women, rarely have a say in the design process and represent a small minority of architects and planners. Yet it is women who bear the brunt of high-rise flats, estates with no safe play areas for children, noise, vandalism and inadequate access to local services and transport. Cramped kitchens, thin walls, dark and dangerous alleyways and stairways and other consequences of low-cost or ill-thought out construction make domestic labour and childcare more difficult and time-consuming.

More recently Dowling (2008), considers the inhabitation of opened planned design, an infrastructure for “practical living” that placed modern housewives and familial caring at the centre of post-war domestic housing (Lloyd and Johnson, 2004). Mothers in Dowling’s (2008) research experienced open planned housing ambivalently. While many valued how open planned design organised everyday care, such as the capacity to supervise children while undertaking housework, for others it provoked concern. These women re-worked the house, moving
furniture, for instance, to enclose children and mess. Through on-the-go adaptations women negotiated mothering identities and practices, adapting normative care infrastructures to household needs.

Related work, more overtly focused on care, explores the embodied inhabitation of housing in contexts of disability and ageing. For people with disability, normative housing design can be a care barrier. Imrie’s (2004) participants found self-care and care for others challenging and undermining of self and identity because normative housing design failed to match bodily needs or facilitate the autonomy and control associated with home and social identities like mothering. Similarly ageing bodies and design may not align, reducing the capacity to self-care in later life (Milligan 2003). While some can accommodate care within housing, for others the normative infrastructural patterning of housing is disabling. As Star (1999, p380) argues, “One person’s infrastructure is another’s […] difficulty.”

Alternative housing design may foster different caring patterns. Hayden (1981, 1986) identifies experimental housing that has (or may have) fostered communal childcare and domestic work, from materialist feminist designs of the 1800s to Kaserville, an industrial town supporting women’s work during World War II through on-site childcare, cooked food services and public transport. Crabtree (2006, p.720-721) similarly describes the materialities of provisioning in ecohousing, with more communal, meeting, economic and sustainability spaces thus,

The focus is primarily on more community-oriented and supporting living arrangements balancing household and community life through physical and social mechanisms. Such designs provide an infrastructure for alternative patterns of everyday living (Gilroy and Booth, 1999) and, we argue, care. However, despite collectivising caring, these designs often do not transform the gendering of care with women continuing to assume the bulk of everyday
domestic labour (Hayden, 1981). Further, such designs typically have only marginal uptake. This raises questions about the multiple intersecting cultural and practical infrastructures within and beyond housing that hold these caring relations in place. The predominance of individual housing units reflect the broader cultural belief in the privatism of care and home, whilst also intersecting with the beliefs and practices of volume house builders, amongst other facets.

The material dimensions of housing as a care infrastructure require further research to draw out the agency and care work of housing. We suggest four interrelated directions.

First, insights might be drawn from research that identifies building inhabitance as a sociomaterial achievement patterned through building materialities (Jacobs et al 2007). Of relevance are the affordances of housing materials, both individually and as assembled within a house. As Kraftl and Adey (2008, 214) explain,

> the capacity of a building to allow inhabitation to take place—and to create meaningful effects—constantly emerges through ongoing, dynamic encounters between buildings; their constituent elements; and spaces, inhabitants, visitors, design, ergonomics, workers, planners, cleaners, technicians, materials, performances, events, emotions, affects, and more.

Research might explore how housing designs, spaces and materials iteratively shape the performance of care. For instance, apartment design and materiality shape parenting (May-Kerr et al 2018) and neighbouring relations (Power, 2015), while Penfold (2017) shows that dominant housing inhibits the caring practices of older Indigenous people, including self-care, care for kin and care for country, and explores an innovative program to build tiny houses that better supports the caring labours of these elders.

Second, connections between materiality and affect demand consideration. Kraftl and Adey (2008), for instance, explore the ability of a building to generate feelings of welcome. Power
(2009a, 2009b) similarly shows how the materiality and design of housing can prompt (and undermine) feelings of being at home, while Lees and Baxter (2011) show how the design of a council owned unit block is generative of one residents’ feelings of fear. Inspired by these works, care-focused research might explore the extent to which housing feels ‘caring’, or inspires a sense of care or of being cared for (see also Mee 2009).

Third, housing, like other infrastructures, requires care, including maintenance and repair (Graham and Marvin, 2001). The care that some buildings and materials inspire, and the processes and timescales across which these designs and materials hold together or degrade (Power, 2009b) are important here. These processes inform the rhythms of house care and integrity of the housing structure. There are likely intersections with tenure and class through, for instance, the capacity of less affluent households to maintain housing, landlord maintenance and capitalisation in (dis)advantaged areas and decisions by some private renters to withhold repair requests to avoid the perceived risk of rent increases or eviction in jurisdictions where rental controls are weak (and see Young 2012 on intersections with race in US cities). Failures to care for housing are likely to have long-term negative impacts on property quality, with implications for tenants’ health and well-being (Bond, et al., 2012, Hiscock, et al., 2003) and landlord investment values. This is likely, more broadly, to impair the performance of housing as an infrastructure of care. Degraded housing is likely to impoverish domestic care, constituting pockets of caring inequality across the city and intersects with broader political projects of public housing renewal and urban regeneration (Darcy and Rogers, 2016, Jacobs, et al., 2007).

These research directions can build knowledge of how housing performs as a care infrastructure. More broadly, however, they raise questions about the locus of care within housing. First, care can be identified in the work of householders maintaining, continuing and repairing human life.
Housing as a care infrastructure patterns the possibilities of this care, assembling, sustaining and limiting the ways that care can be performed. Householders accommodate to these infrastructural constraints, reworking domestic caring and housing as they perform domestic care. Second, and a substantive contribution of this paper, housing materialities play a constitutive and generative role in the performance of care raising questions about the care work of domestic housing. In the examples here the agential capacity of housing within care practices begins to come into view, care work and affects emerging as outcomes of the assembling of human householders and housing materialities imbricated in reproductive labour. This generates questions about how care flows in and through housing materialities. We build these ideas across the following discussions of housing markets and governance.

2. Markets

In the contemporary liberal welfare states that are our focus, privatised housing markets are the predominant way that individuals are imagined to secure housing. These markets are an important dimension of how housing performs as a care infrastructure, patterning care giving and receiving across the lifecourse. In this section we consider housing markets first as a distributive mechanism for housing, considering the impact of housing affordability on domestic care; we then reflect on the role of market imaginaries.

Our overarching concern is with housing markets as a means of access to housing. First, practical intersections between housing affordability and care need attention. One dimension is how housing costs create social difference in care access across the city through shaping and constraining choice of residential location. Lower income earners have less ability to choose localities that are well serviced, for instance, or where familial care networks are located. Less affluent areas also often have less access to public and market-based care such as doctors and
other health specialists (see for example, Law, et al., 2005, Pearce, et al., 2006). Housing affordability has particular resonance for households embarking on home ownership or servicing market based rents. There are intersections between housing affordability and housing governance, age and other markers of difference such as race. For instance, renter mobility is typically higher in nations where renting is not the norm and investor values (such as the right to buy and sell housing when the time is right) are protected in legislation (Easthope, 2014). Renters facing forced moves at times of declining housing affordability are at risk of having to move outside of established neighbourhood and kin networks, with ramifications for those who are dependent on neighbourhood care networks, such as older people ageing in place (Wiles, et al., 2012). The intersection of caring experiences with housing affordability and tenure has received little attention and deserves further research.

A second domain is the interconnection between housing costs and capacity to afford care resources, for example, quality food and electricity. Households facing high housing costs are often forced to compromise in self-care expenditure. Morris (2009), for instance, shows retirees living in private rental housing restricting activities that are valuable for mental health (e.g. socialising with friends) and physical health (e.g. limiting intake of fresh, nutritious foods, and limiting their use of heating, see also Waitt et al (2016)) to afford rent. There are also differences amongst homeowners, those with precarious ownership status, facing rising interest rates or declining housing value, more likely to face financial pressures with implications for care. Some research identifies lower mental well-being amongst this group (Smith, et al., 2017). Income indexed (non-market) housing, on the other hand, can bring care benefits. Mee (2009) shows that the affordability of public housing contributes to its value as a space to care, both for others in the neighbourhood and within the household. In her research “the affordability of public housing
was crucial to a household’s capacity to access and pay for other types of goods and services and thus expanded the caring possibilities within the household.” (2009, p.846).

A third domain interconnects housing affordability, paid work and caring capacity. The degree, type and location of paid work required to service housing interconnects with responsibilities for home-based caring. Low income households face reduced choice in housing. At the same time, high cost housing markets can increase the necessity for individuals to work longer hours, multiple jobs, or to require multiple income earners within a household, reducing the capacity of individuals and households to meet domestic care responsibilities. While higher income households or those in affordable housing may have capacity to outsource care tasks (e.g. cleaning or childcare), lower income households or those with higher housing expenses relative to income are more likely to work longer hours or depend on local caring networks, such as friends or family members. There are significant intersections here with gender and ethnicity. Women (Watson 1988) and ethnically marginalised groups (Haylett, 2003, Kershaw, 2005) are structurally more likely to be in lower income professions and to be responsible for the bulk of domestic caring labour, with implications for the type and location of paid work that they take on.

The housing market is also a powerful imaginary shaping the organisation of domestic care. In the homeowner states that are the focus of this paper, housing is increasingly imagined through a market lens as an individual responsibility, investment and asset. The economic dimensions of housing as an investment class are increasingly central to political framings of home ownership as a citizen responsibility (Smith, 2005). The discourse of market neutrality, of a level playing field negotiated by rational market actors, is a powerful dimension of market imaginaries that makes invisible the ways that housing investments are supported through sympathetic
government policies to develop a care infrastructure that better supports the affluent (Jacobs, 2015, Tronto, 2013). For the affluent, housing markets shape housing as a care infrastructure in multiple ways, enabling access to housing that meets household care needs as well as opening the potential to secure multiple housing assets that resource inter-generational care and care in later life. These dynamics bring the care needs and practices of housing investors and tenants into tension. In a recent intervention in this journal Nethercote (2018, p.18) examines how parents negotiate investor subjectivities “in anticipation of the housing welfare needs of their family”, variously intensifying or stifling investor tendencies.

Market practices and imaginaries are important dimensions of the infrastructural patterning of care through housing. However, they also speak to our broader concern with the care work of housing: of where care is located and how it circulates through housing. These are questions about the ordering of markets, of tenure and the various material, locational and economic benefits that housing brings. It is difficult, however, to discuss housing economies and care without considering the intersection with housing governance. We continue this discussion in the next section.

3. Governance

Housing governance is a third element of how housing performs as a care infrastructure. Housing governance can be thought through two interrelated frames. First, housing and related policies and management practices that structure property rights and entitlements and the possibilities of inhabitance across tenure. Housing governance can also be conceptualised through Foucauldian notions of governmentality, interrogating the governance of housing and home, and citizen responsibilities in relation to housing in contemporary welfare states. Each of these modes of governance constitutes an infrastructural form that profoundly shapes possibilities for care.
In liberal welfare states the cultural valuing and political promotion of home ownership is a central governmental value and practice. Home ownership is promoted as a way of securing the needs of one’s self and family, as well as contributing to the national good by reducing demands on state expenditure (Smith, 2008, Power, 2017a). Renting, by contrast, is typically understood as a short-term or transitional tenure and those renting long-term as having failed in their responsibilities (Gurney, 1999, Power, 2017a, Smith, 2008). State promotion of home ownership includes a combination of political discourses and policies that make housing investment a desirable, rewarding and ‘rational’ option (e.g. Gurney, 1999, Jacobs, 2015, Smith, 2008). These shape the foundational possibilities of housing as an infrastructure of care. In Australia these have included first home owner subsidies, preferential treatment for owner occupation in pension tests, and tax breaks for investor landlords (Berry, 1999), and in Britain ‘right to buy’ policies, and regulatory changes that have freed up housing equity alongside the advent of more flexible mortgage products (Balchin, 1996, Smith, 2008). Housing purchase is also promoted through rental legislation that favours investor priorities (e.g. supporting short tenancies of 6-12 months and favouring the right of landlords to buy and sell housing when the time is right over the right of tenants to a secure home, see Balchin, 1996, Bate, 2017, Easthope, 2014).

Different tenures afford different opportunities for care. In the states that are the focus of our discussion, emphasis has long been on the economic benefits of the owned home as a pillar of the welfare system. Home ownership is politically and popularly associated with asset accumulation and income ‘smoothing’ across the life course (Malpass, 2008, Yates and Bradbury, 2010); benefits that support caring capacity for some, but are not available to those in private and public rental. For instance, and though not explicitly concerned with care, Morris (2016) shows that mortgage-free home ownership underpins a better quality retirement in
Australia, including the capacity to afford utilities, social activities and nutritious food. Smith (2005, p.13) similarly identifies the “welfare content of housing wealth”, conceptualising housing as a means of spreading income across the life course and resource that can be tapped to fund care in later life. Market position intersects with the care affordances of tenure in important ways. Tenure ‘churners’ and those exiting home ownership experience wellbeing deficits that suggest a declining capacity to sustain individual and household care needs (Smith, et al., 2017). On the hand, higher income renters have greater capacity to extract caring value from the private rental market, for example, choose housing locations and designs that better suit household need.

The growing significance of neoliberally informed policy practice is expanding connections between private housing markets and care. The parallel marketization of care and financialisation of housing are driving an understanding of care as a market good and informing growing emphasis on housing as a privatised asset base for funding welfare needs (Doling and Ronald, 2010). These practices are part of a broader individualisation of risk (Rose, 1999, p.158-60, Dean, 2010, p.194-195). In the case of housing, home ownership is reworked as a financial investment through which individuals can take responsibility for life-long care needs. As the investment value of housing becomes embedded in broader policies, integrating with pension entitlements, for instance, tenure increasingly gives shape to later life care opportunities. Home owners and owners of higher value housing are significantly advantaged, while lower income renters and home owners with limited equity face reduced choice (Power, 2017a).

Property rights and entitlements also shape the capacity for care in more-than-economic ways. Easterlow and Smith (2004), Smith et al (2004) and Smith (2005) are exceptional in their overt attention to these dynamics as they operate through home ownership. Their work with households that have recognised health needs (disability and ill health) shows that members of
this group “look to housing markets as a route to wellbeing” (Easterlow and Smith, 2004, p.1000) “making homeownership into something which is not just a way of spending and accumulating wealth but also a means of preserving and promoting health.” (Easterlow and Smith, 2004, p.1003). Home owners had greater scope to locate near health-relevant resources and adjust housing to meet caring needs. Public and private rental tenants face different challenges, requiring negotiation with landlords to ensure housing that supports resident flourishing. The Grenfell Tower fire is a striking example of a failure of housing governance, as a key part of an infrastructure of care, to achieve housing with a life sustaining material form. The inquiry into the Grenfell disaster revealed that fire-proof cladding was rejected due to its cost. A newspaper report at the time argued that “The survivors’ group Grenfell United described the development as heartbreaking. “It is more news that tells us our loved ones would be alive today if different decisions had been taken and if the people in charge had put safety first,” said Sandra Ruiz, who lost her niece in the fire.” (Booth 2018).

There is scope for expansion of research examining the infrastructural work of housing governance systems. This work can drive moves toward a housing system that more equitably patterns domestic care.

First, housing research could consider how housing materialities imbricate with housing governance and markets with implications for care. There is need for cross-tenure research, exploring the caring practices and opportunities of households in owner occupied housing, private and public rental. In Australia, for instance, private rental legislation typically does not require landlords to agree to property modifications necessary to the needs of a person with disability or ageing body, even when tenant funded. In contrast, households living in owner occupied housing have more control over housing form and functionality, dependent on
household economic security. In a context of growing housing unaffordability and growth in renting across western liberal welfare states, housing tenure and market position are likely to shape possibilities for care through intersections with housing materiality.

Second, there is little knowledge of the care-connected non-economic benefits or constraints of the owned home (with the exception of Smith et al’s work, above) or the care affordances of non-ownership tenures. While much research has explored the ontological security (which is important in both caring for the self and being able to plan for the long term care of household members) provided by home ownership (e.g. Dupuis and Thorns, 1998, Hiscock, et al., 2001, Hiscock, et al., 2003, Kearns, et al., 2000) and to a lesser extent social housing (Mee, 2007), such research has rarely considered how ontological security impacts on the efficacy of housing as an infrastructure of care. Indeed for some households, private rental may fulfil caring needs more than an owned home despite lower levels of ontological security (see Easthope 2014). For instance, when employment is precarious or mobile private rental may be more practical and less economically risky (Dufty-Jones, 2012). There has also been little attention to the caring affordances of social housing, though there is some evidence (Mee, 2009, Morris, 2016) that this tenure may benefit lower income households in providing “a place to care” (Mee, 2009). Private rental properties represent a dual space of care, interconnecting the caring needs of investor landlords and resident tenants; a space where the security of the former may undermine the latter’s access to secure tenancy.

Third, ‘everyday’ care is a remaining gap, everyday practices of care outside of ageing, disability and ill-health having received little attention. Research might draw out the interconnection between family care dynamics that were a staple of earlier feminist research, and practices of housing governance. For example, in Australia, strata legislation (which governs inhabitance and
neighbouring in apartment buildings) typically requires that adults are co-present with children in shared spaces such as corridors and gardens. In addition to limiting children’s autonomy, this also places demands on parental supervision (Kerr, et al., 2018). A further example is care for domestic companion animals such as dogs and cats, which face restrictions in some tenure forms and multi-unit dwellings (Power, 2017b, 2018). Extant questions surround how responsibilities to pets shape housing mobility pathways, for instance, in and out of homelessness, social and private rental (this is the focus Author 1’s [blinded] funded current research).

III. Discussion and Conclusion
In this paper we have brought the infrastructural turn together with feminist care ethics to conceptualise housing as an infrastructure of care. At the same time, we have identified opportunities for further research, particularly concerning the more-than-human materialities and affective intersections with care and the intersecting performance of markets and housing governance mechanisms across tenure. We opened our paper with three substantive concerns which we now address in turn.

First, we have argued that to conceptualise housing as an infrastructure of care is to ask how housing patterns the giving and receiving of care. We have identified that housing both supports and inhibits the relational interdependence that is the foundation of life and argued that housing systems organise the possibilities of care at a household and social scale across three central domains: housing materialities, markets and governance. Second, we have identified how this patterning operates along lines of social difference, shaping care opportunity by gender, class, race and so on. To do this is to attend to intersections between the politics of care and the production of housing systems; it is to highlight the ways that neo\liberal care ethics are
iteratively reworking the constitution of housing systems and to raise questions about the possibility of housing that more equitably supports the necessary work of care.

Our third concern has been conceptualising where and how care is located in housing, interrogating how care circulates through housing as a care infrastructure. This is a substantive contribution of this work and offers a new agenda for housing research. The examples we have discussed point to two ways of understanding housing as a locus of care. The first, consistent with existing feminist analyses, values housing as a location within which domestic care is performed. We have re-worked this scholarship through an infrastructural analysis. The second direction concerns the care work of housing itself. Our analysis here is provoked through an engagement with care scholarship that identifies the practice of care in institutions and social policy as well as through new feminist care literatures that identify care as a sociomaterial relation and consider the ways that care flows through a more-than-human world.

Care, we argue, is located not just in the domestic work of householders living and sustaining life within housing. Rather, care is threaded through the housing system, through the practices and modes of organisation that sustain the work of household care. In our infrastructural analysis of housing markets and governance, for instance, we identified tenure specific policy practices and landlord – tenant dynamics that organise possibilities for domestic care. We further pointed to the ways that market imaginaries and related governing practices give shape to the ways that care can be practiced within housing and housing organised for care. Conceptually housing studies can move from this vantage toward a care analysis of housing systems, to consider the care work practiced within different domains of housing. Such work expands from care research that identifies care as ‘a set of practices and ethics that can operate within institutions and through social policy’ (Haylett, 2003, Kershaw, 2005, Sevenhuijsen, 2003, White, 2000). It might expand
Smith’s analysis of housing, markets and care to speculate on possibilities for more caring housing markets, or to questions of housing governance, asking how housing might be better governed to support a flourishing of human life and domestic care. What market settings and governance processes intersect with the care opportunities of householders and how might these be reworked to sustain the necessary work of care? How might ‘good’ care be supported in housing and what does ‘good’ mean in this context? Attention might similarly turn to the work of housing actors: of housing providers and landlords in the social and market sectors, for instance, and to the care ethics that inform, or might inform, their work. This is work that we have begun separately elsewhere (see author 2, and author 1 in press, a). This expands the scope of care analyses within housing to identify the practice and ethic of care in housing policy and policy making, the work of housing investors and landlords and in housing itself.

Alternatively, attention might turn to the sociomaterial objects that populate the housing system, raising questions about the ways that care flows and translates through this necessarily more-than-human world. We are informed particularly by Puig de la Bellacasa’s (2017, p121) illumination of the ways that care circulates “in an embodied way, or simply embedded in the world, environments, infrastructures that have been marked by [..] care” and with Power’s (2019) recent call for attention to the ways that housing cares-with residents. For housing studies this work raises questions about the ways that care flows, intentionally and unintentionally, through housing and other infrastructures. For instance, how does care translate through the object and practice of leases and other contracts and compacts that structure housing relations and to what extent do the caring intentions that structure these objects remain immutable or become mutable across time and space? How does care translate and move through the materialities of housing itself? How might care for property and tenants translate through the
work of landlords and what is the space of neglect? The Grenfell Tower inquiry is beginning to bring light to how a breakdown of care in the spaces of governance and the ethics of markets can translate and flow through the materialities of housing, allowing the circulation of agencies that are deleterious to care and incompatible with life. These are questions that Author 1 has begun to consider elsewhere (author 1 in press, b).

Housing provides multiple different tracks that shape possibilities for care through housing materialities, markets and governance. Care operates through these domains through multiple practices and across scale. These infrastructural lines of conceptualisation and inquiry build through existing scholarship on housing and care to open substantively new directions for housing scholarship. They offer to develop a more comprehensive understanding of the social value and role of housing and provide a discourse and heuristic to counter the growing and near exclusive political focus on home ownership as a pathway to care. They do this through making visible the multiple ways that housing performs as a care infrastructure. From this vantage the notion of housing as a care infrastructure might provide a powerful turning point for imagining different futures for housing reform. For instance, they open space to consider how reforms might better support a flourishing of human life and how the work of relational caring might be translated and cohered through the housing system over time. We provoke housing researchers to ask: is this a housing system that cares?

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