

DISABLING SPACES AND SPATIAL STRATEGIES

Feminist Approaches to the Home Environment of Family Caregivers of People with Dementia

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ABSTRACT The home environment becomes very important for family caregivers of people with dementia as a place of safety, retreat and care provision. Using a gender-based perspective, the authors analyzed thirteen interviews with family caregivers to understand how they perceived their home space. The data was analyzed thematically with the help of adjacency diagrams. Our analysis identified three main themes: compact layout, spatial flexibility, and the wider neighborhood. Given the gendered nature of caring, the findings are discussed drawing on the work of feminist architects regarding the home environment. The authors argue that feminist architectural approaches can usefully inform spatial strategies regarding dementia, ageing friendly housing, accessible living and the wellbeing

of the caregiver. Different bodies and users' needs should be at the epicenter of design, as opposed to conventional design and the current practices by developers, which may create a series of disabling spaces.

KEYWORDS; dementia; adaptable homes; ageing friendly environments; feminist theory; qualitative

INTRODUCTION

Living and caring for a person with dementia can be highly demanding and challenging, and it is distinct from the care of older people with physical illnesses or impairments (Hong and Coogle 2014). Dementia is an enduring, gradual and irreversible disease that can affect both cognition and behavior severely, leading to social and occupational dysfunction. With a dramatically increasing ageing population, family members are often expected to take on daily care for and, in some cases, cohabit with the person with dementia (World Health Organisation 2012). Dementia transforms relationships and roles, turning one person from a companion to a caregiver. This progressive alteration of roles often prevents caregivers from recognizing themselves as caregivers (Cameron et al. 2011), a transformation that is not experienced in the same way by men and women, spouses and children (Bartlett et al. 2018).

Caregivers who cohabit with a person with dementia are more likely to report increased depression and anxiety compared to caregivers who live independently (Torti et al. 2004) and studies have shown that the home environment has a major effect on caregivers' wellbeing (Gitlin 2003; Pierce et al. 2015; Soilemezi et al. 2017b). A significant problem for the caregiver is that the architecture of the home often cannot support the physical and/or

cognitive capabilities of their relatives, adding a significant burden. Studies have further shown that female caregivers handle most of the burden of keeping the person with dementia safe (Hall and Skelton 2012) and the majority of caregivers are overwhelmingly female spouses (Dunkin and Anderson-Hanley 1998; Torti et al. 2004).

Over time, the caring role has changed significantly with home appliances (washing machine, etc.) and medical innovations making daily tasks easier. Yet, despite these technological advances, taking care of people with dementia at home remains a highly demanding task. Exploring the home environment and developing effective spatial strategies to support caregivers is therefore a research priority (Gitlin 2003; Soilemezi et al. 2017a). In light of both the importance of home space in providing care, and the disproportional impact of caregiving on women, this paper analyses interviews with family caregivers and uses concepts from feminist architectural theory and practice to examine both the barriers to their home space and to suggest solutions. This study identifies three central needs for caregivers from the findings: a property that meets the caregiver's requirements in terms of size; a space that can be modified, as necessary; and the importance of proximity to the broader neighborhood environment. To address these needs, the paper suggests three key spatial strategies, which derive from feminist practitioners and theoreticians, as possible solutions: a compact layout that allows both for surveillance of the person with dementia and for retreat for the caregiver; spaces that are flexible and modifiable as needs change; and planning that considers fuller community integration.

HOME ENVIRONMENT, CARE AND FEMINIST APPROACHES TO SPACE

Wiles and Allen (2010) argue that the body and the built environment is a relational system, thus space plays a significant role in shaping age and impairment into disability.

Architects have tried to raise awareness of the way the profession should recognize the bodies of different users, fighting against the idea of ‘don’t want or can’t afford to’, which has led to an ablest approach to space (Lifchez 1987; Hamraie 2013; Manley and Graft-Johnson 2013).

Universal design and lifetime homes are two examples of housing concepts that provide criteria to ensure accessible and sustainable housing for an ageing population (Van Hoof et al. 2013; Pierce et al. 2015; Park and Porteus 2018). More recently, ‘transgenerational design’ or ‘ageing in place’ advocate for designs that can adapt to the needs of people throughout their lifespan (Burgess and Morrison 2016; Zhou et al. 2017). However, developers have continued to focus more on profit and less on social responsibility, thus ageing friendly features are seen primarily in terms of added value and the opportunity for higher selling prices (Steinfeld and Tauke 2002). This has led to a lack of assistive features (Steinfeld and Maisel 2012) which may turn the home into an unpleasant and unsuitable space to provide safe and continuous care (Soilemezi et al. 2017a). Therefore, caregivers are often left with the dilemma of whether to remain and care under a challenging environment, or relocate to a more appropriate home.

Given the female dominated nature of caregiving, feminist literature on the design of domestic space has much to offer in providing a useful framework of enquiry for an improved home environment for family caregivers. Weisman (1999) highlights how a feminist overview of design practices stresses “that what and how we design often diminishes our health”. Garland-Thomson (2002) draws clear links between spatial strategies for ageing and disability and feminist spatial theories, by highlighting feminist critiques of normative approaches to the everyday. Feminist approaches to spatial design also take an important focus on caring relationships (with children, older parents, sick relatives), in order to expand

the analysis on empirical data, emphasizing the vulnerability of both the caregiver and the care-receiver. Feminist architectural strategies have explored practices in all physical scales from the macro to the micro (Rendell 2011), have focused on the limitation of the architectural program (i.e. workplaces without childcare, lack of single-family homes, the suburban house and limited access), and have highlighted the interdependence of body and environment (Hamraie 2013).

Feminist studies discuss the way that women's caregiving responsibilities are reflected in space (Vaiou 2013), and that space impacts on women's caring responsibilities towards their children, their parents and their homes (Matrix 1984; Kulhmann 2013). They also underline the implicit reliance of design processes on normative bodies (Weisman 1992; Rose 1993; Brown 2011). Feminist architectural practices, such as Matrix, believed that "[...] the building belonged to the client/users and not to the architect" (Grote 1992). Feminist architectural theories raised questions about the architectural practice of designing for a generic user, who is perceived as a male, white and middle-class user. In this article, we argue that this generic user is also assumed to be able and young. In response to these assumptions, Matrix, for example, pioneered strategies to involve the user in the design stages; so "[i]n the process of women acquiring a voice in and control over this vital part of their lives from which they have been traditionally excluded, the divide between the profession and the public would also be narrowed if not overcome" (Grote 1992). Feminist architects' work proposing designs which will liberate women from chores and facilitating caring responsibilities suggest useful ways to change design cultures. However, feminist architects are also yet to consider, specifically, the space of caregivers of those with dementia, and this is the gap that this paper aims to address.

What follows applies a feminist lens to identify how homes become disabling spaces, adopting the view, suggested by Bruno (2007: 93), that “architecture is made not only in the act of designing or commissioning it, but also by the way of using it”. Drawing attention to strategies proposed by feminist architectural practices and theoreticians (i.e. Hayden 1978; Torre 1981; Matrix 1984; Friedman 2006), we identify how homes can become disabling spaces and discuss potential applications of feminist architectural theory for improving the home environment for caregivers.

METHODS

This article is part of an exploratory qualitative study that examined thirteen family caregivers' perspectives (Table 1) on different aspects of housing. Two previous papers (Soilemezi et al. 2017a; Soilemezi et al. 2017b) explored the meaning of home (subjective) and the impact of the architectural (objective) elements for the caregivers. Semi-structured walking interviews were used together with photographs and house plans to explore and contextualize caregivers' lived experience of their home environment. The details of the sampling, recruitment, procedure and interview schedules have been reported in the previous publications.

The first author conducted a secondary thematic analysis of the data using the approach by Braun and Clarke (2006). Initially, all transcribed interviews and visual data were re-read and re-examined. In addition, adjacency diagrams were drawn based on the visual data (photographs and house floor plans taken with participants' permission) to help illustrate the spatial experiences of caregivers in their existing spaces. Adjacency diagrams are common practice for pre-design visualization of spatial needs, revealing which spaces need to communicate with each other. The diagrams record quantifiable elements such as number of rooms and modified spaces, and visualize a relational evaluation between the

spaces, in terms of proximity, visual/acoustic control, obstacles, and other spatial qualities defined by the participants (see Table 2).

Following line-by-line coding, initial descriptive codes were formed which were also reflected in the adjacency diagrams and which were later grouped together and refined to three main themes. The three authors discussed and validated the final themes, and used ideas from feminist architectural practice and theory to support and expand the analysis of the empirical data. In the following sections, we explore the restrictions of existing design and address the main themes developed from our analysis using three key feminist spatial strategies: compact layout, flexible spaces and neighborhood planning.

Table 1. Demographic characteristics of participants and type of dwelling.

Table 2. The symbols used in the diagrams to visualize the relational evaluation between the different spaces/rooms in the case studies

THE COMPACT LAYOUT/THE 'RIGHT SIZE' FOR CARE

Despite the wish to remain within a familiar environment, various elements within the physical environment of the home may ultimately contribute to a need for relocation to a more supportive setting. A primary reason stated by interviewees for a possible relocation was the 'right size' of the property, which in our analysis is not connected to number of rooms or the floor area; rather it is determined by the layout of the property.

Simon, who has cared for his wife for three years reported that their one-bedroom flat is "compact; it meets our needs, [...] I can't think of anything better than that". Simon refers here both to having fewer rooms and to the "compact" layout. The flat allows them to move around without bumping into each other, and at the same time not having to travel far within the home in order to move from one room to another, as the proximities in Figure 1

demonstrate. The fact the flat has a short, and sufficiently wide, corridor creates direct links between the bedroom, the bathroom and the well-lit living space (open plan kitchen and living room). The compact layout reduces the time spent on housework and this is valued by Simon, now that he spends more time indoors and realizes the burden of housekeeping.

I suppose I do more things indoors now, [...] when I worked I didn't expect to come home and do housework, [my wife] did that [...] but I do more things now as a carer.

As seen in previous research about the gendered perceptions of caregiving (Twig 2003; Hayes et al. 2010), since he became caregiver and took over his wife's domestic role, Simon noticed a change of his role within the home, thus he has greater appreciation for a layout that facilitates housekeeping.

Figure 1
Adjacency diagram for Simon's 1- bedroom flat

Compactness is an important discourse in spatial design, which derives from early feminist ideas, especially Maragarete Schuette-Lihotzky's 1927 Frankfurt kitchen (Llewellyn 2004). Lihotzky's design aimed to maximize the possibilities of small spaces and provided the framework for compact design, namely minimum space and maximum functionality. However, later studies on the pivotal space of the residential kitchen focusing on gender (Greenbaum 1981; Johnson 2006) and age (Peace et al. 2018), have advanced the discourse. The Frankfurt kitchen, for example, has been criticized for being designed just for one person, segregating the woman from the rest of the household (Leif 2006).

Segregation can certainly be a problem for the caregiver, as dementia progresses and the need to invigilate may increase, so the caregiver is likely to spend more time in the same room(s) with the person with dementia. For this reason, Kate, who has cared for her husband for six years, appreciates her smaller but more open plan house:

We moved from a big house, [now] we have got a small house and it is quite good because I like doing jigsaws and reading. So what I can do, he can be in there [kitchen] and I am in here and he can see me and also because it is more open plan, he can go to bed, and sleep and I am not far away.

The proximity of the different areas of the home enables Kate to have moments of privacy but also to retain visual and/or acoustic vigilance between her and her partner. Another element that Kate appreciates is that the living room allows the couple to be in the same space without the room becoming ‘overcrowded’.

However, spacious rooms are not common in the UK housing market, where the selling point for residences is the number of rooms. Thus room area is considered less important, and developers have opposed attempts to introduce minimum standards (Booth 2013; Mark 2015), leading to UK home typologies still remaining among the smallest in Western Europe (Kelly 2013). The typical UK housing association guidelines also set up a series of spaces that squeeze circulation around the furniture (Schneider and Till 2007) which can raise a lot of problems for the caregiver. For example, a lack of space obliged Kate, to call an ambulance to help her to get her husband up from the bedroom floor because “there’s no room”.

It is important to emphasize that compact design should not be confused with downsizing or relocating older people to smaller dwellings (Peev 2017). Compact design aims to minimize transitional spaces, such as corridors and hallways, and increase living space, as already mentioned in Simon’s case (Figure 1) and as proposed by Dolores Hayden’s (1980) utopian HOMES (Homemakers Organization for a More Egalitarian Society) project. This project transformed the American suburban house into two separate housing units, and removed transitional spaces, such hallways and corridors, aiming to remove the burden of

chores for the woman. Such a strategy is supported by some caregivers' comments about appreciating a smaller residence that is presumably easier to maintain.

Furthermore, reducing these spaces can facilitate navigation and orientation for the person with dementia, removing the need for the caregiver to assist them constantly. For example, the reduced distance proved very helpful for Louise's mother to locate the toilet easily, removing a worry from the caregiving daughter,

So the distance made the difference, we tried to get it as close as we could but literally getting out of bed, turning right after the bedroom and left to the bathroom, it was the same route and finding your way back.

Most caregivers reported that the meaning of home had significantly changed since they became caregivers and thus they needed a space to personalize and escape (for more discussion see Soilemezi et al. 2017b). Louise divided her home, in a manner similar to Hayden's spatial concept of splitting a single house into two residences, in order to create an 'escape space', where she does not have to be a caregiver. As seen in Figure 2, Louise uses the room on the upper floor to isolate herself when a professional caregiver is at home and she converted one of the spare rooms on the ground floor into her own living room. Arguably, the generous sized 4-bedroom bungalow becomes two homes with a shared kitchen. The final layout allows separation for the caregiver, while at the same time Louise can remain in proximity to her mother. This highlights the need for the design to create spaces with the appropriate dimensions and the need to adapt the space according to altering care needs. Since this is only possible in properties with enough space and appropriate dimensions, the majority of UK houses are not fit for this, reducing opportunities to adapt the space to the continuously changing needs of the person with dementia and the caregiver.

Figure 2
Adjacency diagram for Louise's 4-bedroom bungalow

SPACES ADAPTING TO ALTERING NEEDS

This study found that adaptability was of critical concern to a majority of participants, as modifications are crucial for a home to be able to accommodate the changing physical and cognitive abilities of a person with dementia. The application of the required modifications needs to be quick and cost-effective; however, the defined and not modifiable structure of most houses creates a series of obstacles, which may pose an additional physical and/or emotional burden to the caregiver.

All the caregivers had implemented modifications to their living space. As seen in the adjacency diagrams (Figures 1-4), some caregivers had to modify just one room, but others had to make extended modifications. For example, Edna added a toilet to the ground floor of her 3-bedroom house, where she and her husband have lived for twenty three years. Edna was worried that her husband would not be able to get up the stairs quickly enough. This modification offered a solution that promoted her husband's independence and alleviated Edna's burden "[without the new downstairs toilet, I'd] have to be here the whole day, every single minute of the day". However, not all participants were able or willing to invest the capital to make such modifications.

For the caregivers who lived in rented homes, large-scale modifications, such as the addition of an extra toilet, were not considered as it was seen as investing in someone else's property. In other cases, modifications were not feasible because they required permission. For example, Derek, who has cared for his wife for two years and lives in a council-owned property, could not make the necessary modifications. Derek wanted to remove some of the kitchen cupboards and a part of a wall to make the kitchen and the living room more "open plan"; however, he "can't get rid of the cupboards because it's council property". Derek has

done some minor modifications ‘under the radar’, but due to spatial limitations of the building he admits that “[t]here are things I could, I would change if I could but the building doesn’t allow it”. This last comment raises the question about the possibility of an architecture that allows changes in a quick and easy way, changes that may even need to take place every day.

Flexibility and adaptability are important elements in feminist architecture. As the feminist practice *muf* argues, the architect has a duty “not to unwittingly build in limitations” (*muf* 2007). Karen Franck (1989) observes a correlation between the feminist “desire for complexity” and “attention to multiple use, and more generally with awareness of change and the need for flexibility and transformation”. This is also supported by Alice Friedman’s (2006) analysis of the landmark of flexible and adaptive designs, Gerrit Rietveld’s Schroeder House in Utrecht. Friedman argues that the design is a co-creation, between Rietveld and his female client, Truus Schroeder, whose input led to the introduction of moveable features, which can turn the kitchen, the study room and the living room into open plan or separate rooms. The different spatial configurations, which allow different types of interactions, according to the dwellers’ needs, could have been very helpful in Derek’s case, as adaptable spaces facilitate modifications that are reversible and the property can easily return to its original state

Moreover, the less restrictive adjacencies would be a response to the contradictory characteristics of open plan, which allows visual control, and of separate rooms, which can be locked and restrict access to avoid accidents. Unlike Simon who wishes to make the kitchen more open plan, Jane, who has lived in her house for forty five years, cannot imagine living with an open plan kitchen:

I can't imagine that [open plan kitchen] because I cook our meal out there with all the pots and pans, pass things through the hatch, and my husband will take them to put on the table; then we shut the hatch and we sit in here in tranquillity.

Although Jane does not consider an open plan kitchen, the mentioned “hatch” opens and closes according to their needs to allow communication between the rooms and a moment of peace when it is closed. Moveable partitions can connect and isolate spaces and can help the creation of the often-sought small places of ‘escape’ for the caregiver.

There have been a series of speculative designs, which envision continuously adapting spaces. One is Victorine and Samuel Homsey's proposal of residential units, *Foundation Saver*, where the only rigid rooms were the bathroom and the kitchen, and all the non-wet areas could be rearranged to the needs of the user within a given footprint (Schneider and Till 2007). Similarly, in order to realize her concept of a continuously adapting housing unit, Susana Torre became a developer herself and created the Carbonerras Community (Torre 2008) in order to bring to life ideas that she has explored since the 1970-1972 project, *House of Meaning* (Torre 1981). Recent projects, such as Walter Menteth Architects' Consort Road housing project (Menteth 2008), have adopted ideas of easily customizable flats through the use of sliding walls and a structure that doesn't obstruct the interior. However, as developers and the market remain the main decision makers in housing production, and they prefer to sell a finalized product, flexible designs have not yet been adopted widely, nor explored to the extent that feminist practices have proposed,.

When a home is unfit, the caregivers may have to consider relocation to a different residence, which is not always preferable or simple. Moving out is a very hard choice for Sarah, after living for thirty-seven years in her house, but her husband's wellbeing is her priority:

it's an upheaval to move from here after all these years and we've had a new kitchen put in and, and it's gonna be, you know, a bit hard at first... it's a bit harder for me now, but no I wouldn't move if I had the choice, but I put my husband's safety more than ...

This is clearly a devastating choice for caregivers such as Sarah, and she was not alone in our study in facing this dilemma. Spaces that can be customized by the user are important, as the user is not involved in the design process, and he or she might then adapt the space to their requirements as they arise. Feminist practices, such as Matrix, aimed to involve the user in the early design stages, questioning 'recipes' and standardization (Matrix 1984; Dwyer and Thorne 2007), but since this is not a common practice, architects need to understand the importance of spatial flexibility. It needs to be possible to remove barriers for moving in a wheelchair or walking with other aids (a common problem in squeezed spaces with hard borders), or to make a modification to improve the life and wellbeing of the caregiver. Our study shows that approaches like these are essential if caregivers, like Sarah, are to be given the option to remain in their homes, especially if both the person with dementia and the caregiver are to retain their social networks and their familiar neighborhood.

THE NEIGHBORHOOD OF CARE, FAMILIARITY AND SUPPORT

Most of the caregivers we interviewed referred to the wider neighborhood as a significant part of their home environment. The neighborhood provides not only a familiar physical space but also social networks for the caregivers. It also affects how the residents experience their indoor home. The views to the outside world, the noise, the interactions with neighbors and the use of the wider neighborhood environment were mentioned as ways that the neighborhood may affect caregivers' meaning of home and everyday home life.

Taking a lead from feminist architectural theories that drew attention to and questioned the binary separation between public/private (McLeod 1996) we examined how the outdoor physical environment, the social networks of the neighborhood and the opportunity to develop relations, play an important part in the distinction, as defined by Sixsmith (1986), between house and home.

The outdoor physical environment affects how the residents experience their indoor home. For example, Kate, who has cared for her husband for six months, required a modification on the street in order to improve the view from the bedroom, where her husband spends most of his time (Figure 3).

...They [the local council]... actually cut the tree so he can see the view a bit more. [...] Not necessarily light, but he has got more view. So you can, you can see on a clear day you can see the ferries going out and things like that.

Furthermore, Kate appreciates what the neighborhood offers and stresses the importance of having public transport, services, shops and familiar spaces for activities within walking distance for her and her husband:

[T]here's a bus stop right outside, the shops are across the road if I ever need them, because he never needs, so no... it's a good location... we got the dog and he can take her out across the green.

Figure 3
Adjacency Diagram of Kate's house

In some cases, the neighborhood amenities provided an 'escape space' outside the home for the caregiver. Robert was frequently visiting his allotment, being just a ten-minute drive from home:

I can go down to the allotment. I normally go down in the mornings. Monday to Friday normally. Get hour and half, two hours. ...I can come [if needed]; I'll be home in ten minutes.

Similarly, as shown in Figure 4, Edna's home's proximity to the local supermarket becomes both an opportunity to escape and to interact with people.

I mean I live round Sainsbury's as it is. It's a wonder they don't charge me rent [Laughs]. Because if I get frustrated or upset or angry I just get in the car and go to Sainsbury's [Laughs]. Because it's two minutes down the road and I could wander around there with the trolley and calm down or, you know, see other people and maybe meet somebody I know and I feel better when I've been out.

The above comments suggest a difference in the way men and women may approach an opportunity to escape, which may derive from the gendered approach to leisure (Munro and Madigan 1999). For Robert, his visit to the allotment appears to be a timetabled regular activity. Edna, on the other hand, escapes when she feels that the situation becomes too difficult, while her main escape room remains the small office in the house (Figure 3), reflecting studies that show that women usually need an excuse to leave the house (Dixey 1988).

Figure 4
Adjacency Diagram of Edna's house

On the other hand, although Louise moved to a rural property, which was more suitable for both her mother and herself, as explained above, she lost the advantage of proximity to amenities. The rural location increased the travelling time to shops and other amenities, which is more challenging as her spare time reduces, due to her caregiving role:

I am not going out as much at the moment... [in the previous house] there were lots of shops nearby, here it is quite limited so that is another big issue

However, the implication of leaving a neighborhood is not just about losing helpful amenities; the neighborhood can be an important support network. Thus the active role and importance of the neighborhood in terms of familiarity, accessibility and safety does not relate only to the person with dementia, as suggested by previous studies (Mitchell and Burton 2006; Ward et al. 2018), but this study shows that it is equally important for the caregivers.

Furthermore, Milton and colleagues (2015) conclude that the neighborhood is not only defined by geographic or administrative boundaries, but also in reference to familiarity, to regular activities and to people; thus, sociable living is quintessential to the caregiver's wellbeing. Anna, for example, who has cared for her husband for the last 5 years, appreciates being in proximity to friends, who come to visit due to lack of time for socialization. She feels that her world "just shrinks, gets smaller and smaller and it happens so gradually you hardly notice it". Hence remaining in the same neighborhood is perceived as supportive and offers the opportunity to enjoy some spare time and to communicate with other people, without having to go out.

Good neighborhood relationships provide more than social life and, in some cases, relieve the caregiver from some workload. Jane, who has cared for her husband for one year and lived in their three-bedroom house for forty-five years, was very appreciative of her long-term neighbors and their support at such a difficult time:

[We have lived here for], 45 years; a lot of the neighbours have been here for years and years, so we all know each other, that's always useful. They're always saying to me 'don't forget you can call on me' if I need to [...] because I've got a lot of good friends, we still go out for meals, the other guys take [my husband] to the loo, things like that.

For Jane, staying for a long time in the same neighborhood offers a network of support, because she has developed good relations with the neighbors.

However, time is not always enough to create good relations with neighbors. Sometimes the design of the space creates obstacles, as Derek observes, when he compares, the current three-bedroom maisonette with the isolation caused by the terrace house typology of his previous house:

[At] the other place we were sort of isolated even though we were in a, a row of terraces [...] you go in the backyard and it's completely enclosed.

Derek raises the importance of how a neighborhood is planned and how the boundaries between people may obstruct or facilitate the development of these social networks. This issue echoes the feminist discourse regarding spatial planning and especially the limitations of the isolated suburban house. Feminists aimed to empower women by strengthening social links in a cross generational neighborhood, where different people live and support each other (Hayden 1980; McLeod 1996).

Conversely, Simon, who has cared for his wife for 3 years, appreciates how the retirement block they recently moved to provides sociable communal spaces.

I don't think it's just about the flat, it's all the environmental things that go on, the fact that we can go and play darts in the games room and we can go and sit in the lounge downstairs and have conversations with the other residents. It's very, very sociable living here, the other residents are brilliant.

In addition, Simon explains that this type of accommodation provides a level of safety for his wife and thus reassurance for him. In two cases, when Simon's wife wandered around, "a neighbor has brought her back". Simon acknowledges that, despite living there for just a few months, "[t]here is a supportive element to the other residents here".

The importance and supportive nature of neighborhood is not a new concept in architecture. Early work from feminist architects highlighted the importance of neighborhood and city planning in supporting the sharing of housework and caring (Brown 2011; Rendell 2011). In the early 20th century, radical designs by Marie Stevens-Howland and Alice Austin (Hayden 1978) envisioned communities based on cooperative housing, shared kitchens and shared child caring. Dolores Hayden used the principles of these short-lived utopian visions while also retaining the private nature of the home. In her article ‘What a Non Sexist City Would Look Like?’, Hayden (1980) proposes a neighborhood design that could respond to issues of the isolation of the terrace house, as mentioned above by Derek. By removing the barriers and the fences from the backyards, Hayden’s proposal converts the backyard of a residential block into a communal space. This space creates conditions for the neighbors to share equipment, activities and most importantly caring duties. This type of planning allows greater vigilance of outdoor activities and thus has the potential for sharing the burden of constant supervision and caring. Hayden’s proposal allows the inclusion of different bodies and an improved home environment (Jarvis 2014). Women’s Design Service (2009) makes similar propositions for retirement housing developments. However, the question remains as to why these concepts are only considered in retirement housing and not in neighborhoods, to create cross-generational supportive networks.

Perhaps a counterargument would come from reluctant developers, who consider shared and communal spaces difficult to market and unpopular to consumers (Riedy et al. 2017). However, as previously mentioned, Simon appreciates the advantages of this sharing design, which indicates that it is not entirely unpopular. Furthermore, Sarah, who was contemplating moving to a retirement apartment, also welcomed the idea of having communal gardens. When asked if she would miss her own garden, she responds:

No, there is a garden, the communal gardens cause there is a lovely one, a great, big one, there is. And I said, 'oh, that's really nice that somebody else could do the work, but I could sit out there... and enjoy the garden

Research on co-housing (Williams 2005; Riedy et al. 2017; Fernandez Arrigoitia et al. 2018) further supports that once passing the initial negative response, older people appreciate sharing instead of prioritizing privacy alone. Therefore, the question this raises is why home design does not always facilitate social interactions in neighborhoods, as proposed by Hayden's 'non-sexist city' proposal forty years ago. Although the discussions around this topic are growing (Williams 2005; Jarvis 2015), this has still failed to be transformed into significant action.

CONCLUSION

Using the home adjacency diagrams from our sample of thirteen caregivers of people with dementia allowed us to examine the relationship between the caregiving experience and the home environment, how it is constantly changing and, as a result, how the home may become unfit for living with, and caring for, a person with dementia. Feminist architectural practices question architectural standards, advocate for the inclusion of the user in the design process and emphasize that the production of space does not stop after construction completion, but continues as long as the space is used. This study draws from their call to include different bodies and to consider the needs of the home-confined caregiver, to emphasize the importance of compact and flexible design.

The interviews in this study showed that compact space played a significant role in allowing people with dementia and their caregivers to remain within their homes. Feminist architectural theory and practice has provided some useful models of compact spatial design

that might be applied to improve the living situations of those family caregivers of people with dementia. In particular, removing or reducing transitional spaces creates stronger adjacencies, allowing the caregiver both an ‘escape space’ and to maintain vigilance over the rest of the residence.

In addition, our findings highlight the need for extensive modifications to the home environment, which can be facilitated and accelerated by applying flexible design principles. Since developers rarely focus on the issue of adaptability, design professionals have a duty to allow the user, who is often excluded from the design process, to customize their space according to their altering needs. Furthermore, when home design is able to accommodate the changes that come with ageing and dementia, existing local networks can also be protected.

In this research, we found that for the caregivers of people with dementia, neighbors offer safeguarding in case the person with dementia wanders, or they simply offer communication support for the caregiver. The concept of home is much broader than the infatuation with privacy and ownership allows, and it expands to the local amenities, which can offer some respite from care giving. Feminist proposals for neighborhood planning focus on creating stronger social networks which offer support for different types of caregiving (such as children, older people, sick people). We argue that it is time to revisit these issues that feminist architects have been discussing for forty years: design should break the hard boundaries of private and public in order to facilitate interaction and create a wider supportive social network. The participants in this study expressed satisfaction for the application of these concepts at the internal and external communal spaces of retirement blocks, because they increase opportunities for socialization. However, it is important to apply these visions for non-sexist cities on a wider, inter-generational scale, and to go beyond the assumption that older people want to share housing only with older people.

Design solutions need to support both the person with dementia and the caregiver, examining different bodies and their personal and social relation to the built environment. Feminist architects have provided a framework for inclusivity by design outside heteronormative and ablest approaches, but also inclusivity of the final user in the design process as early as possible. This paper demonstrates that caregivers are able and willing to apply different spatial strategies and to transform their space as active designers, provided that the residence allows this.

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