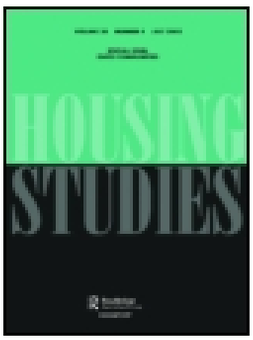

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Elements of desirability: exploring meaningful dwelling features from resident's perspective

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ABSTRACT

The need for more dweller-oriented approaches to the development of residential environments is widely agreed upon. In the theoretical discussion, the concept of affordances has been seen as promising in grasping the desirable dwelling features and how they become meaningful in everyday uses. However, the concept has been used surprisingly little in empirical housing studies. This article introduces an inventive method to study affordances and contributes to the understanding of the concept by reflecting its usefulness in the context of housing research. The method consists of focus group interviews guided by participant-produced photographs, which allows the participants more freedom to define what they consider meaningful in their dwellings. The results reveal some desirable dwelling features largely uncovered by the public or scholarly discussions yet. From residents' perspective, developing higher quality housing means paying greater attention to the mundane "secondary spaces", the sensory experiences and the related atmospheric qualities, as well as the continuums between interior and exterior spaces. The results also emphasize an active role of the resident in discovering and shaping the affordances.

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Dwelling features; affordances; participant-produced photography; housing design; focus groups

Introduction

The need for more dweller-oriented approaches to the development, design and building of residential environments is widely agreed upon (e.g. Coolen, 2015; Hasselaar & Qu, 2011). However, currently residents tend to have little impact on what sort of housing is being developed. Information collected for the needs of housing production tends to incorporate rough categorizations and superficially phrased questions and, consequently, reproduces uninformative ideas of general housing ideals (Lapintie, 2010). Whereas residential location, housing type and tenure, as well as neighborhood qualities, have been quite thoroughly investigated (Pirinen, 2014, p. 28), the understanding of smaller scale features increasing or decreasing housing satisfaction is largely missing. Moreover, while much academic research focuses on the decision-making of

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housing choices (e.g. Aerø, 2006; Boumeester, 2011; Hasu, 2018) and its various background factors, these studies too often miss the information on the desirable dwelling features and qualities, and how they become meaningful in everyday uses and interactions with the living environment. Eventually, however, the information of functional, desirable and meaningful qualities of (urban) dwellings is what will make a difference also in the housing market.

What makes a dwelling desirable for the residents is of course a combination of many elements. The physical, material, and formal features of dwellings, the social life that inhabits them, their meanings, their felt and ambient aspects, as well as housing policies and practices, are seen in a co-constitutive relationship (Jacobs & Merriman, 2011; Jacobs & Smith, 2008). Along social sciences in general, housing studies have turned the attention towards socio-material practices, action, embodiment, affects, and feelings related to spaces, environments and material settings of our lives. In other words, considerations beyond the symbolic meanings and representations of spaces and environments have become prominent (Clapham, 2011; Gabriel & Jacobs, 2008; Gillon & Gibbs, 2019; Hitchings, 2004; Imrie, 2004; Jacobs & Merriman, 2011; Smith, 2004).

In our study, we use the concept of dwelling referring to a heterogeneous physical structures of which meaningfulness is produced in everyday life practices and embodied experiences of their inhabitants. This understanding of dwelling comes close to approaches of cultural geographies of home and home-making that recognize home-making as a more-than human process, simultaneously imagined, lived and practiced (Gillon & Gibbs, 2019, p. 105). However, the home is a contested and loaded concept in academic literature (Blunt & Dowling 2006, p. 2–3) and tied to extensive discussions about e.g. identity, domination, and alienation. Furthermore, as the more traditional approaches in housing studies highlight personal, social, psychological, and emotional meanings of home, while commonly lacking the dimension of physical structures (Easthope, 2004) essential to our research, we have chosen to use the concept of dwelling. King (2009) calls for a theory of dwelling for revealing the personal and lived experience and meaningfulness of often politically addressed and already existing housing units, issues and problems (King 2009, p. 49).[1] However, the dwelling is not a passive object or structure onto which residents project meanings and identities, but it is an active and lively part of the everyday interactions between the resident and the environment, equally shaping this reciprocal relationship (see 2011 for his understanding of human-environment relationship; Clapham, 2009, p. 9; Ingold, 2000).

A promising concept to capture this co-productive, practical, embodied, and meaningful relationship between people and their domestic and residential environment is 'affordance' (Buckenberger, 2012; Clapham, 2011; Coolen, 2006, 2015; Coolen & Meesters, 2012a, 2012b; Heft & Kyttä, 2006), originating in ecological psychology developed by James Gibson (1979). The concept refers to the possibilities or obstacles that a particular individual perceives in her/his current environment in the context of action at hand (Ingold, 2015, p. 38). Thus, from the resident's viewpoint, an object or a physical attribute of a dwelling is something that affords particular interactions with it (cf. Michael, 2016, p. 652). An affordance is not an equivalent to 'function' because it is relational to the specific resident's intentions, needs and perceptions

(Clapham, 2011, p. 366), stemming from the reciprocal relationship between the resident and the dwelling in everyday activities. The concept steers the analytical focus onto the meanings of a dwelling as intertwined with its materiality, physical structures and the embodied practices (including feelings, senses) of using it (Clapham, 2011; Heft & Kyttä, 2006).

In this article, we enhance the understanding of the concept in the field of housing research by reflecting on the ideas of the ecological anthropologist Tim Ingold (2000, 2011, 2018), the longstanding advocate but also critic of Gibson's ecological psychology, in light of our empirical research. Ingold's studies have been influential in many disciplines dealing with relations between people and their environments, but his work on affordance thinking has remained in the margins in anthropology (Ingold, 2018, p. 41) and, even more so, in housing research.

Furthermore, despite of the attention in the theoretical discussion, the concept has been used surprisingly little in empirical housing studies. In this article, we discuss the methodological challenges, but also contribute by introducing an inventive method to study affordances and providing research findings shedding light on residents' perspective on meaningful housing features. As the residents' needs, wishes, life stages, and tastes are diversifying and differentiating (Ilmonen, 2016, p. 49; Hasselaar & Qu, 2011, p. 179), we aim to identify types of affordances that are flexible enough to apply to many types of physical settings, housing types and tenures in further studies. The article is based on a research project which examined important housing qualities for urban dwellers in Finland, in order to contribute to the regeneration processes of housing estates and brownfield areas. The research question addressed is: what kinds of affordances are relevant for residents making their dwellings not only functional but also desirable and meaningful.

Affordance-based approaches in housing studies

The concept of affordance was introduced into housing studies to structure the reciprocal relationship between intentional actors and their residential environment (Clapham, 2009, p. 9). Gibson (1979) originally developed the approach of ecological psychology as a reaction against cognitivist approach to perception of the environment and the Cartesian premises of mainstream psychology splitting the world into the thinking mind and the executive body (Ingold, 2011, p. 77). For Gibson, perception is about moving around and actively engaging in our surroundings, discovering what they have to offer, whether for good or ill. These offerings of the environment are affordances (Ingold 2018, p. 39). Affordances are, in our understanding, inherently relational: they emerge in an interface between a perceiver and an environment (Ingold, 2011, p. 77–79; 2018, p. 40; Knappett, 2004; Lennon *et al.*, 2017, p. 783; Michael, 2016, p. 652)—in continuous processes in which affordances are discovered and shaped by actors pursuing their objectives (Clapham, 2011), and likewise, the uses of the environment lead to new experiences, aspirations and needs. Thus, people continually shape environments and environments shape people (see Ingold, 2018, p. 40).[2]

Meanings and experiential qualities of the environment are drawn from these active engagements (Ingold, 2011, p. 78). According to Ingold (2011), this offers a

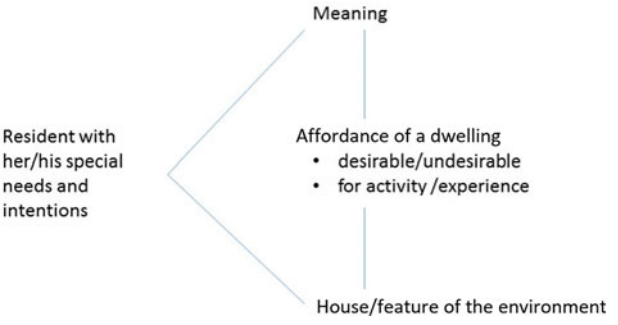

Figure 1. A conceptual framework for studying affordances.

radically alternative way of thinking about the meanings as this means that they are not attached to objects but discovered in uses. Thus, all the meanings and values of a dwelling do not lie in shared systems of symbols, that is, in the ideas, categories and representations simply cast onto the world. Instead, meanings are understood as an inseparable, immediate part of the intertwined processes of perception and action (Ingold, 2011, p. 77–78; 2018, p. 39–41).

In housing studies, the concept of affordances is promising as it enables scrutinizing the living environment, experiences and practices from the resident's perspective, without the typical fixed attributes or rather general categorizations, such as housing type (e.g. Dekker *et al.*, 2011), tenure (e.g. Andersen, 2011), type of residential area (e.g. Karsten, 2007; van Diepen & Musterd, 2009), or number of rooms, and focusing instead on the experiences and practices of dwelling (Coolen, 2006, 2015). It also allows connecting the inherent meaningfulness and experiential qualities of a dwelling with its physical and spatial characteristics. According to Heft & Kyttä (2006), meaning has typically been treated in the psychological and social sciences as a subjective and mental quality that separate individuals impose on an otherwise meaningless environment or physical structures.

However, Ingold sees an irresolvable problem in Gibson's original approach to perception and the resulting understanding of affordance:

> For while, on the one hand, he brings the perceiver back to life, as a being who is continually moving around, actively attending to things, exploring their inexhaustible potentials and becoming more and more skilled in the process, on the other hand the environment is effectively solidified: it is portrayed as an environment of *objects*, every one of which is fixed in an rigid and invariant form, rendered inert, ready and waiting for the perceiver to come on the scene and to suss out its affordances. (Ingold 2018, p. 42).

Putting it simply, Ingold argues that even though the potentialities of the environment shape the actions of the perceiver, it is portrayed as an environment where nothing changes, happens, moves, or flows. In this article, we have taken this critique into consideration by extending the understanding of the affordances to include features of residential environment beyond a mere rigid set of objects.

Coolen & Meesters (2012a) have presented a conceptual framework for studying the features of a dwelling and dwelling environment through the concept of affordances. Figure 1 (above) represents the framework developed further to fit our study. However, few studies have employed the concept in empirical housing research.

Applications have been likewise rare in empirical studies on architecture and urban planning (Kyttä *et al.*, 2013, p. 32). Yet, the possible uses of the concept, including how to identify the relevant and meaningful affordances among the numerous possible ones, and how to empirically connect the meanings and physical structures of a dwelling as the concept implies, have evoked some discussion.

Coolen (2015) has suggested an affordance-based approach for determining the uses people intend to make of the dwelling and the objectives they try to achieve, i.e. the stated preferences. In his research design, the participants were provided with lists of possible affordances, of which they selected the most important ones. The affordances were identified by applying the idea of Affordance Feature Matrix model by Maier *et al.* (2007). The chosen affordances, both positive and negative, and their related physical structures (i.e. cooking in kitchen, personal care in bathroom, relaxing in living room, kitchen and balcony …) were investigated in a way that resembles the approach of much of the traditional housing preference studies in which housing attributes are put in mathematically calculated order, lacking context and situation (see Hasu, 2017, p. 33). Such an approach has been criticized for assuming people's ability to abstractly weigh and measure user-benefits of various attributes and thus arrange a bundle of attributes according to their preferability (Hasu, 2017, p. 139). From this perspective, since affordances are characteristically situational and relational, the research should rather be anchored to a real-life context (Heft & Kyttä, 2006, p. 212)—what is actually happening in people's mundane life.

Another perspective for identifying affordances has been provided by Clapham (2011). Discussing housing for people with physical disabilities, he suggests that the concept of affordance should be expanded from basic functions (e.g. preparation of food or bathing) to cover the human needs included in the concept of wellbeing. A starting point could be the literature on the meaning of home that has provided lists of the factors that people think are important, such as security, shelter and warmth, or the general elements of wellbeing like self-actualization, autonomy, personal growth, self-acceptance, life purpose, mastery, and positive relatedness (Clapham, 2011). This approach also holds to rather general, pre-determined values as a basis for identifying affordances.

Direct relationships between material attributes, uses and meanings cannot be assumed but need empirical and context-specific examination (Clapham, 2011). A quite routinized method applied for this, at urban level, is Public Participation GIS (PPGIS), used for collecting experiential knowledge on perceived environmental qualities. It allows mapping of environmental experiences and daily behavior practices with respect to specific locations and measurable qualities of the physical environment (Broberg *et al.*, 2013; Kyttä *et al.*, 2013, 2018; Samuelsson *et al.*, 2018). However, this kind of mapping often produces a rather static picture of the environment.

For studying affordances, Heft & Kyttä (2006, p. 212) suggest observing the activities of individuals in situ, that is, recording what individuals actually do in particular places or conducting interviews on site asking participants to describe activities they typically undertake there and the features in the setting that support these activities. A rare housing studies example of such an approach is Lewinson's (2011) study,

using the concept of affordances, on positive experiences of low-income residents living in hotels. Combining individual interviews and a photography method, she managed to compose stories reflecting the practices of home-making in far-from-ideal living conditions.

Data and methods: focus group discussions guided by photographs

In order to anchor the study in the real-life context, avoid the pre-determined selection of affordances, and to gain access to residents' own embodied perceptions, practices and experiences instead, we chose an open, exploratory and participant-centered research strategy. Therefore, we applied a qualitative methodology combining photo-elicitation technique with participant-led photography together with focus group interviews. The basic idea of photo elicitation is to add images into a research interview in order to elicit more or different kind of information (Harper, 2002). In our case, the photos were participant-generated, which resembles the idea of a participatory-action research method called a photo-voice (Nykiforuk *et al.*, 2011). It has been used predominantly in studies presuming that the participants form a 'community'—often one previously ignored in society or research (Warren, 2005)—to promote critical group discussion about community issues and assets (Wang *et al.*, 2004), stimulate empowerment, and advocate community change (Ronzi *et al.*, 2016). In a similar way, we used photographs as devices to gain access to participants' perceptions on their actual dwelling environments (Rose, 2016). However, the study participants were not presumed to belong to marginalized groups or form a 'community', but rather share an interest in developing a particular (kind of) residential area. The use of participant-generated photography methods has also emerged in housing studies, including studies on home and homelessness (McCarthy, 2018), home creation of refugees (Fozdar & Hartley, 2014), experiences of comfortable home and homeliness (Madsen, 2018), place and identity in suburbs (Oldrup, 2010), and immigrant housing (Levin, 2014). All these studies agree upon participant-generated photographs as a method unmasking experiences that otherwise would have remained hidden.

The article is based on a research project which examined relevant and important housing qualities for urban dwellers in Finland in order to contribute to the regeneration processes of housing estates and brownfield areas. The empirical study focused on two city districts in two Finnish midsize cities, Tampere and Turku. The Tampere case *Tesoma* is a socio-economically relatively disadvantaged housing estate, constructed in the 1960s and the 1970s, and now a target of redevelopment and densification plans. The district was chosen as an example of a relatively sparsely built large housing estate surrounded by a green environment, a 'forest suburb' (metsälähiö) in Finnish terminology. The Turku case *Linnanfältti* is a fairly central and attractively located brownfield area under conversion into a quite dense urban neighborhood. The district was chosen as an example of city center expansion area in a formerly non-residential setting. Particularity in the Linnanfältti neighborhood is that the new units developed consist of wooden-cladded housing as an extension of the city's wooden inner suburbs.

In both cases, the focus group formation was based on four different life stages. The focus groups represented students, households with children, households without

Table 1. Focus group participants and their current dwelling types.

Tesoma	Dwelling type			
Group	Block of flats	Terraced house	Detached house	Other (semi-detached/multidwelling)
Students (7)	7			
Families with children (5)	1	2	1	1
Household, no children (6)	1	4		1
Elderly (7)	5	1	1	
Additional group (5)	5			
Linnanfältti	Dwelling type			
Group	Block of flats	Terraced house	Detached house	Other (semi-detached/multidwelling)
Students (4)	3	1		
Families with children (6)	2	1	1	1
Household, no children (7)	3	2	1	1
Elderly (6)	3		3	

children, and the elderly (over 65 years old)—i.e. groups which are likely to possess characteristically somewhat different housing needs. In Linnanfältti, the total number of participants in four focus groups was 23. In Tesoma, also a fifth, additional group was formed on a basis of residents living in a specific housing block undergoing a large-scale reconstruction process. In Tesoma, a total of five focus group discussions were performed with 28 participants. In Tesoma, the study participants' recruitment process focused on those currently living in the district. As the Turku study area did not have residents yet (by the time the study), the participants' recruitment focused on people interested in this new district or developing new wooden housing in the inner city in general. The majority of the participants lived in the central areas of the city, many in the old wooden housing districts, but some also in the neighboring (suburban) towns.

We did not enquire the socioeconomic status of the participants, except of the characteristics of their current residence (Table 1). All except one participant represented native Finns. All in all, the two cases offer variety in terms of the material and social contexts of the participants' dwelling environments, including many house types, block typologies, tenures, and neighborhood contexts. This also provides groundings for generalizing the results even beyond the two district types studied.

Essential to our method, the participants were given pre-assignments to take photographs (e.g. with their mobile phones) and send them to the research contact person in advance of the group discussions. They were asked to take four photos: first, of what they considered the most pleasing or functional place or thing both in their dwelling and their living environment; and second, of what they found poor, dysfunctional or otherwise unpleasant both in their dwelling and their living environment. The assignments were loosely defined in order to encourage the participants' own perspective.

The focus group discussions were thematically divided into sections, which concerned directly the participant-generated images. The photos were used as a communicative tool, to guide and stimulate stories and comments from the research participants to explore the housing qualities (see e.g. Guillemin & Drew, 2010; Harper, 2002; Warren, 2005). Every participant presented her/his image and was asked to tell about its meanings. All participants were encouraged to take part in

commenting and discussing the photographs with others. At times, the researchers guided the flow of the discussion with focused questions. The benefits of focus group method were evident as participants' photographs triggered multiple responses from other participants and led to rich and animated conversations. In groups based on different life stages, participants could share and discuss their experiences of housing with their peers, keeping the conversation going easily. On the other hand, group conversations may be biased due to uneven interaction between dominant and more hesitant participants. Additionally, at times spontaneous comments and open-ended nature of responses can complicate the interpretation of results (see Stewart & Shamdasani 2015, p. 47). The photographs were an integral part of the data production and, finally, of the analysis. Our data consists of nine group discussions of about 2 hours each that were recorded and transcribed, and about 150 photographs in total.

The analysis was theoretically informed by the conceptual framework, but at the same time grounded in the data to preserve the participant-centerd character of the research (see Shortt, 2015). Using interpretative content analysis of the group interviews, we identified the relevant affordances, i.e. the meaningful practices and experiences that participants talked about. While participants assigned certain meanings and activities to photographs, the photographs were also about objects, spaces or tangible features of dwelling spaces. Therefore, we also conducted a simple content analysis of the participants' photographs, arranging the data based on the kinds of spaces and physical structures they depicted. This dual strategy of analysis, inspired by Shortt and Warren (2017), allowed examining how affordances are connected with the tangible, material and physical characteristics of a dwelling.

Desirable and undesirable dwelling spaces

This section examines the affordances that people talked about when having the freedom to define what they consider relevant and meaningful features in their dwelling. These included the daily practices in 'secondary spaces', a multiplicity of affordances between the indoor and outdoor spaces of a dwelling, the sensory experiences and related atmospheric qualities of a dwelling, and the modifiable and flexible spaces. In the following, we elaborate these findings answering our research question on the relevant affordances for residents as well as briefly reflect on the existing—often rather limited—scholarly literature on each theme.

Affordances of 'secondary spaces' for daily routines

The functionalities supporting everyday life activities may easily become unnoticed as routines flow uninterrupted. However, the material things affording the basic functions at home become visible and meaningful when they do not work as expected. In our view, this partly explains why many participants of our study described spatial arrangements and functions related to mundane daily practices as 'negative affordances' that cause difficulties in the flow of daily routines such as housework, laundry, storing, or moving between different spaces at home. The problems reported were mainly related to poorly functioning or too small hallways and vestibules, stairways,

Figure 2. A negative feature of a dwelling presented by a participant.

lack of storage or utility rooms. In addition, older participants talked about stairwells, lack of elevators, too heavy doors, or other accessibility problems with walkers and wheelchairs.

Hallways and vestibules received a great deal of attention. These entrance spaces accommodate a necessary basic function as mediators of movement and action between indoors and outdoors. However, according to residents' experiences, they should also provide many relating affordances, such as sufficient space for dressing children to go out in wintertime, storage of shoes, clothes and sportswear, as well as keeping the dirt out and the warmth in. Flaws in hallway design—e.g. narrowness or very small size, lack of storage, unsuitable floor materials for the wet season—cause inconvenience in everyday life. These affordances do not depend on a physical object or space alone but are constituted in the activities of everyday life in various seasons and weathers. Figures 2 and 3 (below) exemplify these problems.

> There is no proper hallway, so all the dirt and rubbish from my shoes end up straight in my room. I don't have any closets there either so I've put together these shelves by myself (…) There were no hooks either where I could hang anything; when I moved in I had some difficulties figuring it out, because the previous resident had stuffed a refrigerator there (…) I've been thinking whether I should create more storage space around the staircase if my neighbor is OK with that, put some hooks there for umbrellas or something but (…) And my guests get confused when they come to visit, like, where do they put their jackets. It's really annoying. (Student, Turku)

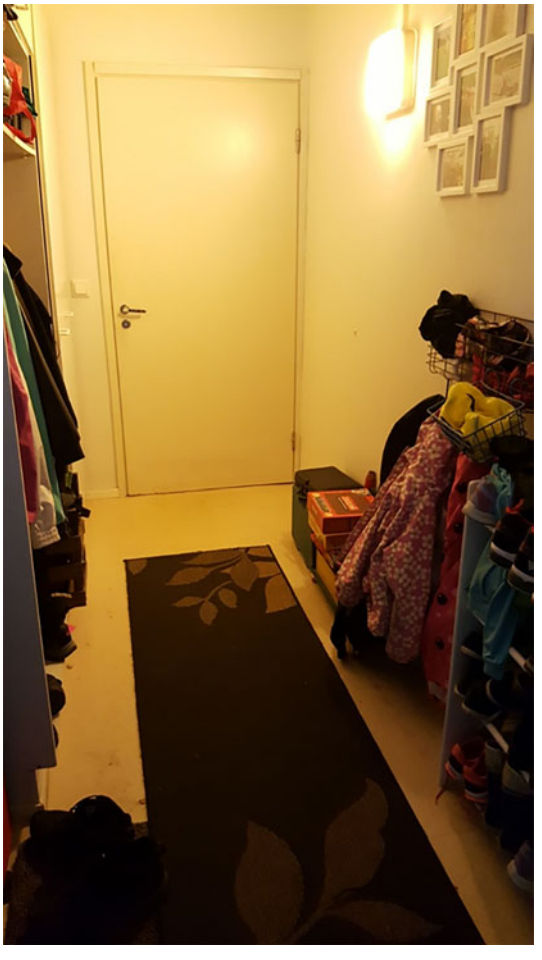

Figure 3. A negative feature of a dwelling presented by a participant.

> There is no room for two people to do anything (…) It is such a disaster with the kids. They have learned that they have to queue up when we are going out, I [give the instructions, like] Ok, now you go and put your shoes on. Then walk over there to the door and wait. Then the next one: you go and put your shoes on and walk to the door. And so on. (Household with children, Tampere)

Lacking, too small or impractical utility rooms and storage were much discussed, too. The affordances for storing, organizing, and keeping things in order became meaningful, for instance, in relation to different life events: frequently changing residences of students; appropriations of home space and mobile everyday life in blended families or new life phase of empty-nesters. These experiences show the affordances' intertwining of meanings, activities and physical spaces.

These findings reveal the importance of spaces which are used and experienced almost every day by most people, but often regarded as secondary, 'in-between' or empty of meanings (see Shortt, 2015; Steele & Keys, 2015). These spaces are considered lesser when compared with the primary functions and dominant spaces of a home—living rooms, kitchens and bedrooms—and have also received relatively little

attention in the mainstream housing research (see, however, Steele & Keys, 2015). It also seems that these spaces are neglected in housing design and development, which is reflected in residents' experiences of dysfunctionality.

Affordances of spaces between indoors and outdoors

Affordances of spaces and continuums between indoors and outdoors were very much discussed in focus groups. Open, aesthetic and green window views were generally appreciated and considered adding to the atmosphere of the dwelling. Views can for instance afford feelings of being close to nature and enjoying these experiences in everyday and routine activities; "nature enters the indoors" as some participants described. One participant in our study stated that for her, the minimum requirement was that she could look at a tree and its seasonal changes from her window. Many positive photographs in our data also depicted the exterior spaces of home, such as balconies, terraces, patios, domestic gardens, backyards and common courtyards. Instead of private spaces at home or public spaces in their neighborhood, many participants chose to talk about the continuums between inside and outside or the semi-private or semi-public spaces of their dwellings. Affordances connected to the dwelling's outdoor spaces are multiple, and people value those highly.

Balconies and terraces were considered continuums of the indoors or 'extra rooms', and afforded spaces for various activities, such as gardening, crafts or small repair works, drying laundry, socializing with friends, eating, cooling off after sauna, or even sleeping during summer. Furthermore, these spaces were not only important as such, but also in connection with the interior, broadening and diversifying affordances. They are also shaped by seasonal changes. A participant living in a terraced house in Tesoma (Figure 4 below) describes how the continuum of spaces created affordances for enjoying nature amidst the daily activities as follows:

> I took this photo from our kitchen window. Directly from the kitchen you can see into this kind of glass terrace and further outside into the garden, and the birdhouses and bird tables. These different kinds of spaces interest me. I spend a lot of time by this view daily. When I cook or make sandwiches or whatever, this is the view I look at. And our glass terrace is like a greenhouse. I grow herbs and seedlings on the windowsill in spring and then take them out to the garden. (…) I also like to feed birds; we have a lot of birds here as well as a squirrel and a woodpecker, too. Nature is very important to me. (Household without children, Tampere)

Domestic gardens were important for affording outdoor activities like gardening, 'pottering and digging around', or bird feeding, as well as sensory experiences of connecting with nature. Making things by hand and other bodily activities were found important per se, but sometimes participants also valued an ability to modify one's dwelling environment. Many also expressed wishes for small-scale gardening in the shared courtyards of blocks of flats.

Shared courtyards served as residents' communal space that afforded opportunities for varying social activities, meetings and gatherings, safe playing area for children, as well as opportunities for observing social life anonymously. Various kinds of spatial and social settings can afford these experiences: in our data, the settings ranged from the wide green courtyards of the 1960s suburbs to old wooden terraced houses in

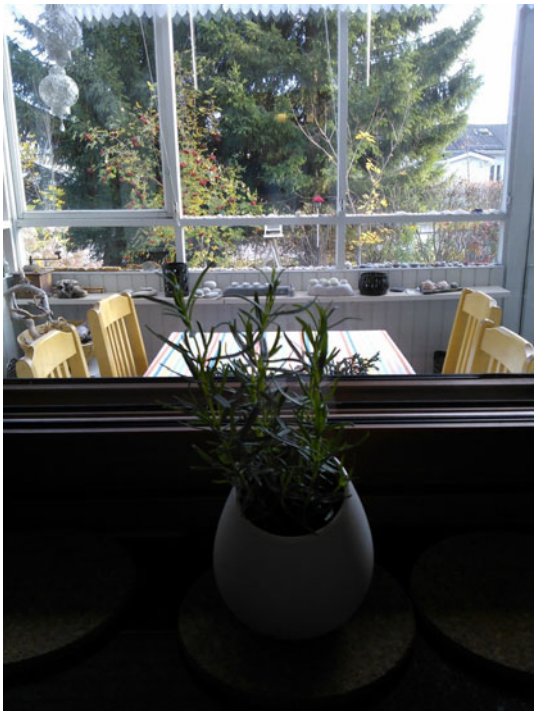

Figure 4. A positive feature of a dwelling presented by a participant.

dense city blocks. Both older people and families with children highlighted the significant potential of shared courtyards. Bhatti (2006) emphasizes that the garden can have a major significance in the (re)creation of home in later life. In the comment below, a participant from a Tesoma housing estate describes one variation of sociability in a shared courtyard:

> Last Wednesday we smoked fish with my friend Matti. Well, there were a couple of other people too, licking their lips. They served some drinks too, and we smoked altogether about ten kilos of fish, caught by us. (The elderly, Tampere)

The sense of communal belonging was also highly valued amongst some families living in old wooden terraced houses in the inner city of Turku. A combination of semi-private gardens and patios, along with semi-public spaces shared with other residents, affords easy interaction as residents can flexibly choose between the affordances for social activities and more private ones. In different context, Mugerauer (2012) has examined the American porch as a mediating place between house and exterior, which allows '*lingering* between inner and outer spaces', as well as establishing a semi-private place to be alone or with others (ibid., p. 264–266).

Residents are actively choosing, finding and creating affordances for sociability in practically engaging with outdoor activities. Affordances for some of the same activities, e.g. for children's safe playing were found in private gardens, courtyards and public spaces alike, such as cul-de-sac streets or nearby parks, depended on the context. Participants also described how the children of neighboring families moved

from one domestic garden to another and to semi-public courtyards shared by a block, choosing affordances they needed for playing at time.

It might take some time before the residents occupy and activate the shared space, that is, make it their own. The temporal aspect, the evolving of affordances with time, during the processes of dwelling, became evident in the group discussions. The environment of the outdoor spaces of dwelling also changes, vegetation grows and built structures age and wear. People living in a block also change over time, and at some point, the courtyard may start to feel "outdated" in terms of affordances sought by new inhabitants. These aspects highlight the need to allow residents to shape these spaces and their affordances in a processual manner over time. The courtyard design should leave space for adaptability, for example for building terraces or planting flowers, regardless of the housing type or tenure.

Our results emphasize the blurring boundaries between outside and inside, or public and private spaces in the dwelling environment. This has received some attention in the literature (e.g. Bhatti *et al.*, 2014), although, as Steiner and Veel (2017) note, the topic of home is still often approached through a private/public dichotomy, emphasizing the walls of the dwelling as a dividing line. However, as our results also suggest, the boundaries of a home are also differently perceived and lived. The dwelling interacts with its surroundings in ways that cut across the traditional binary thinking (Steiner & Veel, 2017). There is a growing literature on private, domestic gardens (e.g. Alexander, 2012; Bhatti, 2006; Bhatti *et al.,* 2008; Coolen & Meesters, 2012b; Hasu, 2014; Hitchings, 2003) but a much wider range of exterior and outdoor spaces of the dwellings would deserve more attention in scholarly discussions and in developing desirable housing solutions.

Affordances of atmospheric qualities of a dwelling for corporeal experiences

The focus groups also raised themes concerning the atmospheric qualities of a dwelling. Such active corporeal engagements of human bodies with the sensed world produce affordances in different practices (Jensen *et al.*, 2015). One of the most frequently mentioned topics was window views and the significance of natural light in a dwelling. The most pleasant places for spending time and relaxing were often located where the indoor and outdoor spaces merged, where natural light flowed in, and where there was an (preferably) attractive or simply open view through a window. Lightness is an important factor creating enjoyable atmospheres at home, especially in small apartments and studios.

The participant whose photo and quote are presented in Figure 5 (below) enjoyed the spacious feeling and lightness of the family's living room even though they were a family of four living in a two-room (1 BR) flat. Her experience illuminates how difficult it is to reduce housing satisfaction to simple, general or single attributes of a dwelling. In the same vein, it is difficult to connect the perception of affordance into one simple, rigid object. For example, the connected affordances of lightness and spaciousness often assemble many material elements, such as layout of the dwelling, size and directions of the windows, open view, surroundings that allow the light in, and living on upper floors, *et cetera,* let alone weather, season or time of day.

Figure 5. A positive feature of a dwelling presented by a participant.

Furthermore, it is the resident as an active perceiver amidst her/his daily life and sociocultural context who assembles these elements.

> This picture represents a situation where the big living room is somewhat divided, as there is also our bed. What I wanted to say with this is that the room is bright with light, and as we have windows on two walls, and the living room sort of continues also to the kitchen. Therés also a balcony that runs along the whole length of the flat, so the light is definitely important (…) The light clearly widens the space. (Household with children, Turku)

Our results also illustrate how the architectural inhabitation is far more than visual (Paterson, 2017), entailing multi-sensory encounters with the interiors and exteriors of buildings, including their haptic, acoustic, kinaesthetic, thermal, and tonal qualities (Jacobs & Merriman, 2011, p. 214). In our data, people presented for instance images of different kinds of fireplaces, as they were considered affording particular atmospheres, especially important for those living in old wooden houses. The exterior spaces of home also afforded valued multisensory experiences. In the photo and quote in Figure 6 (below), an older woman describes the various affordances of her garden, which for her was the most important place in her home. The quote highlights how affordances for activities connect with sensed and felt spaces.

> This (photograph) tells about my garden (…). That apple juice extractor is in the picture, because it kind of brings one the smell and taste (of apple juice) when you look at it. I think the garden is, besides giving this organic food, beautiful, and you can eat from it. I feel good in there. And really, my friends like it here, and so do I, so it́s a kind of summertime living room. Well, I was born in the countryside and I need a garden. (The elderly, Turku)

Sensory experiences, smell and sound in particular, provide an immediate, unavoidable encounter with the environment (Macnaghten & Urry, 1998, p. 83–98), mediated in a dwelling through taken-for-granted physical objects and technologies (Jacobs & Merriman, 2011). Participants also brought up many unpleasant experiences resulting from flaws and dysfunctional technical and structural building solutions (ventilation, heating, acoustics, soundproofing). Their direct and usually quite

Figure 6. A positive feature of a dwelling presented by a participant.

uncontrollable quality makes the experiences even more annoying. The material conditions producing these negative affordances are often beyond residents' control and difficult to adapt to.

> Participant: The voices and sounds emanate from the kitchen very strangely, so if you turn any machine on there, it is very loud in the living room. So, if I watch TV, I always have to tell the others to close the door, if they are talking in the kitchen, using microwave or anything (…) It is an incredibly annoying, terrible noise.
>
> Interviewer: Do you get used to it?
>
> Participant: No, I never get used to the noise. (Household with children, Turku)

The findings add weight to the previous criticism on the visio-centric perspective of modernist architecture and design practice for underexploring nonvisual sensations and tactile qualities (Pallasmaa, 2012; Paterson, 2017). Ingold (2016, p. 163) has provocatively asked whether there can be 'architecture without atmosphere' or whether we can imagine a building without the air circulating, the changing light, the sounds of inhabitants, or scent, evoking no moods (Ingold 2016, p. 163). There are a lot of geographical, architectural and anthropological writings about the atmospheres, for instance lightness and darkness (e.g. Edensor, 2015; Pallasmaa, 2012), and an ongoing discussion on the conceptual resources to investigate the affective and multisensory experiences of the built environment (Paterson, 2017). Those studies have, however, largely focused on public spaces (Shaw, 2015, p. 586). The multisensory, embodied aspect of affordances in dwellings has not yet been widely discussed in

housing research, even though it can play a significant role in creating desirable dwelling spaces.

Affordances of flexible spaces for diverse and changing needs

The needs and wishes for housing evolve and are revealed for residents as they inhabit their dwellings and time passes by. The majority of the participants wished for flexible housing solutions or possibilities to modify and influence their dwelling and its affordances to better suit their needs and ambitions. Many of them had also made at least small-scale repair works or otherwise altered the physical settings of their dwelling. The caption below reveals how alterations have helped a blended family's members to appropriate space, instead of adapting to existing circumstances. Discovering and shaping affordances is a learning process.

> Well, the thing is that it's me who is new in the house. On a psychological level it's about how I am taken into the family as a stepmother. When can I speak out, where is my own territory, and where is our common territory? And then again, some kind of status quo has already formed [laughs]. The house can be modified according to our needs, and as my man is handy we can really do it. If the plot and building permit allowed, we could even build a bit more. So, the situation is ideal, after all it's our motivation and desire driving how much we want—or not—to increase comfort or functionality (…) and compromise… It's still a learning process. (Household with children, Turku)

A space can also afford multiple uses without physical changes, as residents adapt their needs to the available opportunities. For instance, in our data, quite a few households were using their private saunas for drying laundry or for storage. However, some spaces truly serve for varied affordances, such as the exterior spaces already discussed, or kitchens integrated with living room or dining room spaces, which are experienced as places for several activities and therefore extending the affordances at home, e.g. by allowing socializing while cooking. Spacious apartments and large bedrooms were also valued because they were considered suitable for multiple functions and furnishings along changing life situations.

> I spend most of my time in this small room, which was left empty when the children moved away. I named it "the engine room". There is a freezer, a computer and an armchair. Everything I need, and then, of course, the office of the Tesoma neighborhood association is there too. I think it's wonderful that for the first time in my life, I have my own room. (The elderly, Tampere)

There can be flexibility not only within the dwelling, but also in relation to its environment. One participating family in Turku told how they had rented another flat in the same building as their family size grew and they did not want to move. However, even after their children had moved away, the parents continued to make use of the second flat, which now serves as their home library and is their favorite place at home.

Our findings highlight the significance of a diverse group of spaces that could be called 'intermediate spaces' (Mugerauer, 2012, p. 266), 'building peripheries' or 'interstitial spaces' (Steele & Keys, 2015, p. 113), or even 'loose spaces' (Stevens & Franck, 2007), which not only allow for one fixed use but also a freedom of different

appropriations of space. That remains a rather neglected idea in contemporary housing research (Steele & Keys, 2015, p. 120, 123). These findings also support the viewpoint that a home continues to evolve as people live in it, and that the on-going process of transforming and maintaining a dwelling is central to making and keeping it a home (Fyhn & Baron, 2017).

Conclusions

Although dwelling is one of the most important dimensions of human life, resident-oriented approaches to the development, design and building of housing and residential environments are few. Therefore, this article has explored what kinds of dwelling features are relevant for residents making their dwellings not only functional but also desirable and meaningful.

The article's theoretical contribution is integrating Tim Ingold's (2011, 2018) understanding of affordances to the discussion of 'affordance' in housing studies (Clapham, 2011; Coolen, 2006, 2015; Heft & Kyttä, 2006). The concept, referring to opportunities for action and experiences, connects the inherent meaningfulness of a dwelling with its physical and spatial characteristics. We also paid attention to Ingold's arguments about the limitations of the concept. From Ingold's perspective, affordances are not a set of objective conditions that exist independently and in advance of inhabitants' actions and lives, but they are inherently relational, discovered and shaped in uses of the environment as a result of reciprocal mental and bodily interactions with it (Ingold, 2011, p. 78–79). From this position, affordances of a dwelling are sometimes a more complicated matter than e.g. Coolen's (2015) preselected functions and values of spaces, suggesting that living room affords relaxation or kitchen affords cooking. We will reflect on this more after summarizing the empirical contributions.

The second contribution of our study is methodological. We introduce a method, which enables letting people define what features they find meaningful and important in their dwelling, without categories predetermined by researchers. The method is based on focus group interviews in which photo-elicitation, in the form of photographs taken by participants, have a great role to play. The photographs help participants to reflect on their everyday activities and on the material, tangible elements of a dwelling, giving them some distance to what they are usually immersed in (see Rose, 2016, p. 316). As the results have shown, this offered novel, specific, detailed information on housing features and provided new perspectives on what relevant dwelling spaces are. Our study also points out how photos can help evoking more sensory and embodied reflections (Bramming et al 2012; Rose 2016, p. 308). On the other hand, we must critically reflect what is missing in the photographs. Participants did not produce, for instance, any photos of family members or other people and the layouts of dwellings were relatively seldom discussed. The reasons can be practical or more complex relating to social acceptability and conventions—what participants wanted to show to the researchers (Loopmans *et al.*, 2012; Rose, 2016, p. 324) or in the group. However, this did not seem very relevant in our study. Risk of bias towards aspects of easy visual representation has also been identified in previous

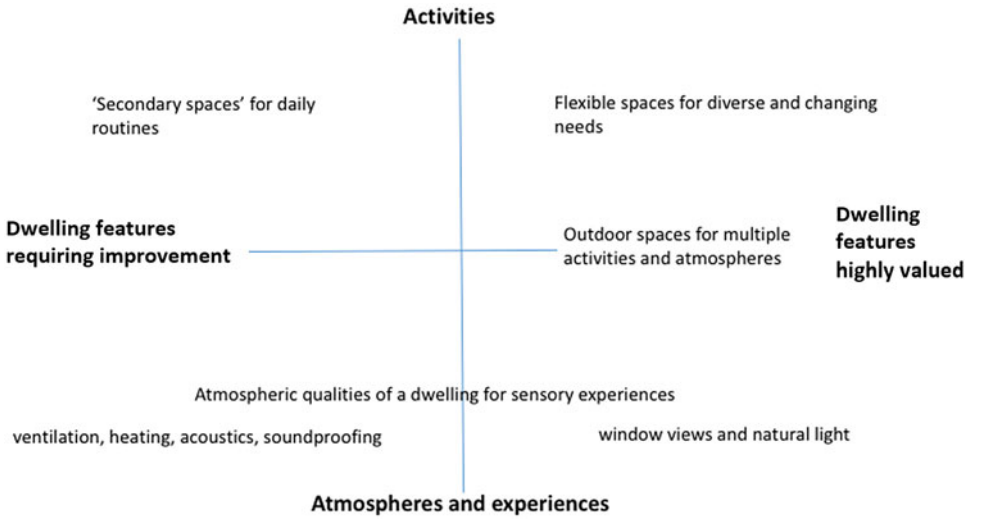

Figure 7. The categories of affordances for activities and atmospheres connected with the dwelling features in residents' current dwelling.

research (da Silva Vieira & Antunes, 2014), but in our material photographs served also as pointers to discuss multisensory matters. All in all, the article has highlighted the relevance of developing exploratory and participant-oriented methodologies in housing studies.

The third contribution of the article is empirical. We set the aim of organizing the findings to affordance categories that are flexible enough to apply to different physical settings, housing types and tenures. These were, first, the significance of affordances for routine activities at home, such as storing, housework and moving between spaces. Very mundane 'secondary spaces' of a dwelling afford these activities. Second, multiple and diverse affordances were identified in spaces and continuums between the indoors and outdoors of dwellings such as window views, balconies, gardens and courtyards, which were greatly valued. Third, the importance of affordances for corporeal and multisensory engagements with dwelling spaces was raised. The potential of natural light as well as rich sensory experiences of exterior spaces in creating enjoyable atmospheres in a dwelling was emphasized. On the other hand, the often unpleasant haptic, acoustic and thermal experiences related to (negative) affordances created by technical flaws were also pointed out. Finally, the fourth important dwelling feature was flexible and modifiable spaces, which afford many possible uses for diverse or changing needs. Importantly, all these categories highlight dwelling features that have been rarely discussed in the context of housing (preference) studies. Figure 7 below summarizes the most important findings including the affordances for activities, atmospheres and experiences that residents either already find good and desirable in their dwelling (environment) or think would need improvement.

As to the generalizability of our empirical results, the cultural boundaries of the generalizations in all distinguished affordance categories are a topic of further research. The empirical study through which the understanding emerged focused on two quite different kinds of urban residential areas in two Finnish midsize cities.

Furthermore, the ages, life-stages and the material and social contexts of the study participants' dwelling environments were diverse, which supports generalizing the results beyond the case studies. However, geography-wise the results will undoubtedly resonate more regarding the sparsely built housing estates, as well as inner city districts of Northern European cities, as they share many planning and cultural traditions and fairly similar climatic conditions. The results strengthen the notion of affordances towards more experimental and multisensory dimensions. Moreover, instead of concentrating on separate attributes or objects, our approach has allowed us to investigate how the various features of a dwelling entwine together in affordances. These features are also created by non-human things, materials and events. Changing light and temperatures, emanating sounds, mud and dirt, circulating air, weather, seasons and growing vegetation, weathering and decaying of buildings all shape the dwelling spaces, their sensory and tactile qualities and affordances for activities and experiences. Thus, as Ingold (2011, 2018) has argued, the weakness of Gibsonś original theory of affordances is leaving the understanding of the environment inanimate. The use of the concept of affordance by extending it beyond Gibson's original theory, taking into account the material flows and movements, also needs further examination. Further studies might need to add other concepts that better capture e.g. different timescales of flows and formations in the environment.

The practical aim of the study has been to contribute to bringing the dwellers' perspective to the discussion on how to develop contemporary housing. All the empirical findings are grounded in the residents' experiential knowledge about affordances gained in the actual processes of dwelling. Our results add to Coolen's idea that in housing development, it is not sufficient to have only a basic understanding of what people prefer, so that the marketable residence would provide certain basic functions for all. Shifting the focus from a physical entity towards the affordances could push the developers to provide qualities beyond those elementary functions (Coolen 2015, p. 78–79). On the other hand, the basic functions will be reflected on when they do not work as expected and interrupt the usually unconscious flow of daily routines. According to these results, creating higher quality, desirable housing for residents means paying greater attention to the 'secondary spaces', the sensory experiences and the related atmospheric qualities, as well as the continuums between interior and exterior spaces. These dwelling features can and should be applied in diverse housing types, settings, tenures, and price categories. Last but not least, our results emphasize the intentional and active role of the resident in discovering, shaping, and creating affordances in the continuous process of inhabiting domestic environments in our everyday life. This means that designing strictly defined functions and attributes of a dwelling is not enough, but the design should leave more space for modifications also by residents themselves.

Notes

1. Tim Ingold (2000) also discusses the originally Heideggerian concept of dwelling (as a verb) and what it means to dwell in an environment or in the world. However, he has since turned away from the concept and suggests the concepts of inhabitation and wayfaring instead (Ingold 2011, p. 12). As this is a loaded and complex discussion about

the essences of how living beings inhabit the earth, as Ingold (2011, p. 12) notes, we cannot address it here.

2. Ingold has noted an unsatisfactory compromise between a realist and relational ontology in the background of Gibson's original theory. In short, Gibson 'wanting it both ways' insisted that affordances are real, objective and physical AND constituted only in relation to the perceiver. This has led to discord in the interpretations of the concept (Ingold 2018, p. 40). In this study, we engage in the discussion on 'relational branch'.

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