

Body and disability in architectural research

Catharina Nord
National Institute for the studies of Ageing and Later life,
NISAL, Linköping University

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Dr Catharina Nord

Linköping University, National Institute for the studies of Ageing and Later life, NISAL

Abstract

The experience of architecture is difficult to research due to that people often have their attention to other things than the built environment. Architecture then constitutes a frame for human experience, a matter of course difficult to describe and grasp. The body's relationship with physical space is also evasive in nature. The experience of the body disappears when a person's attention is directed to other things. However, the body reappears when a person is ill or disabled. It becomes describable and a focus for attention that makes it accessible to researchers. This paper presents the disabled body's relationship with the physical environment illustrated by a research project of major adaptations of bathrooms of older and disabled people's (client's) private homes in London. The clients' experiences of the adapted bathrooms revealed relationship between the body and the environment of great complexity, both prior to and after the adaptations were finished. These experiences revealed that illness and disability may manifest themselves in the micro scale of performances and interfere with the use of space in minute aspects as well as larger ones. They involved reflection on major and minor bodily performances in space, also simple acts which are hardly ever considered in many situations. The client's had developed complex personalized strategies by which they tried to come to terms with bodily difficulties to which the adaptation was expected to provide the solution. These personalized strategies constituted efforts to embody the new environment.

More people than ever are reaching high ages. Architects already face the challenges of developing new housing alternatives for disabled and older people. Architectural research goes hand in hand with this. The body situated in its life-world is a conceptual tool of relevance to these studies of the architecture of the everyday in environmental gerontology and disability research.

Author biography

The author is a PhD and Architect SAR /MSA. She is currently doing research in the field of architecture for older people, in particular the oldest old. The present article is based on a research study carried out in London on housing adaptations of older and disabled people's private homes. She has a long experience in health care design as a practicing

architect as well as a researcher. African issues have been another major focus of her research. Her doctoral thesis was about African patients' experiences of inpatient care in a modern hospital in Namibia. The HIV issue is another topic that she attended to in a Ugandan research project in which she investigated the building needs of two organizations involved in HIV services. Her current research project concerns the architectural impact on respite and intermediate care in facilities for older people in Sweden.

Introduction

The majority of people continue to live in their homes as they move into old age. The home environment is a core element in an individual's *life-world*. This life-world, according to Maurice Merleau-Ponty (2002), forms the basis for human experience, the emotional, social and physical space to which individual deep and sometimes long-lasting relationships are attached. It provides a framework for daily life and everything which is familiar. Home is an embodied place composed by reciprocal and complex relationships between environment and body. Julia Twigg alerts us to that "Human lives are profoundly bodily based and the management of the body is central to the day-to-day life at home in concrete and mundane activities..." (Twigg 2000:72). To Merleau-Ponty the body is the point of departure for human existence in the life-world, the anchor of the experience in physical space. Human intentionality links artifacts and physical elements to bodily experiences in meaningful relations (Merleau-Ponty 2002). This provides an arena for human agency, self-fulfillment, abilities, social interaction and consciousness. However, the home environment may pose considerable challenges to those for whom old age brings frailty and disabilities. Bodily deterioration may render the well-known environment increasingly unfamiliar by posing threats to security and a full life experience. According to Leder (1990), the embodiment of daily life eludes consciousness. He writes that

"when the body falls sick...we are left with a world transformed; a disease undermines our sense of self and autonomy, our relations with others, our habitual experience of space and time". The human-spatial relationship, in which the habitual environment provides the manageable space of everyday life, is disrupted" (Leder 1992:5).

When manageable space becomes increasingly restricted, the individual's independence is circumscribed as well. This is a process that housing adaptations aim at stopping and preferably reversing. The purpose of major adaptations to the home is to remove or mitigate

obstacles in the physical environment in order to facilitate daily living (Heywood et al. 2002). This paper builds upon a study exploring the process of design and implementation of major housing adaptations to the homes of older and disabled clients in the London area. Client satisfaction and perceptions were major factors in the evaluation of the design process, as well as the final outcome, the adaptation itself (Nord et al. 2009). The study revealed relationships of great complexity between the clients and architectural space where bodily experience is a central element.

Twigg (2006) argues that the body is to a large extent invisible in ageing studies. This paper is written with the ambition to explore the nuances of older and disabled people's bodily experiences in space. The point of departure is that the decline of the body and the individual's strategies to manage it is central to the experience of ageing (Heikkinen 2004, Kontos 1999). Bodily frailty and dependence are not the only aspects of the ageing experience. Twigg makes the point that

“Focusing on the body can, ironically, help to disrupt the narrative of frailty and decline that is commonly rooted in the body, showing how bodily experiences in ageing are both more diverse and more rooted in social and cultural constructions than this account would allow” (Twigg 2006:53).

This study shows that the focus on the clients' bodies revealed agency, efforts and activities in their spatial strategies.

Embodiment

Recent research in cognitive sciences has focused the integration of body and cognition in human experience articulated in the concept *embodiment*. One core assumption is that the exchange between the body and the world is a basis for mental representations and conceptual metaphors are developed from bodily sensory-motor experiences (Lakoff & Johnson 1999). It is possible to claim that science has caught up with Merleau-Ponty's works. Built environments are a ubiquitous part of modern human existence and constitute the natural frame for human life, taken for granted, implicit, almost unnoticed.

“Encounters with architectural objects penetrate our lives, they enrich and disturb our actions. Whether we want to or not, we confront them with our bodies and our senses, as well as with thought and feeling” (Dahlin 2002:165).

Our bodies meet the built environment to a large extent outside our mental focus in an eluding, evasive way. The bodily experience disappears from our attention and

consciousness in many situations (Gallagher 2007, Leder 1990). Damasio notes that “attention, [is] something of a finite commodity when it comes to real-time processing” (Damasio 1999:128). As a consequence, the body has developed a simultaneous capacity to perform acts outside perception for reasons of efficiency. In the presence of objects that requires mental focus and reflection the body is “on its own”, referred to spend most of its time unnoticed, dispossessed of unnecessary mental resources. However, when pain or disability haunts the body, it reappears in unwanted ways and demands attention (Leder 1990). The body is a well-developed apparatus for exchange with the surrounding world in which senses and emotions play significant roles. The senses make the world known to the body in an immense range of possible modes, scales and encounters (Pallasmaa 1996). Emotions are embodied appraisals of the surrounding environment (Prinz 2004, Damasio 1994), the body’s “inner voice” informing itself about conditions in the outside world. These systems of exchange and information constitute an integrated totality of embodied experience about where and how we are. The *body image* is an integrated perceptual whole where intentional states, such as beliefs and attitudes, are linked to reflection and self apprehension (Gallagher 2007). Humans are equipped with a repertoire of conceptual patterns for basic movements and acts, *image schemas*, that functioning outside language and mental elaboration (Johnson & Rohrer 2007). Johnson (2008) claims that there are numerous schemas that guide our mobility and positions in space, for instance, the SOURCE-PATH-GOAL schema, representing a short movement between two points. VERTICALITY is another, representing the vertical position in space. In addition, image schemas can be combined in compositions of complex activity patterns producing more advanced embodied meaning (Johnson 2008).

Methodology

The study, which this paper is based on, was a qualitative case study carried out in a London borough. It investigated the working processes operating within the borough around the design and completion of major adaptations. This was achieved by studying, in depth, a number of adaptation projects. The main method of data collection was by individual open-ended interview. Topics for the interviews included: the nature of the adaptation; the quality of the communication with the professionals involved; the quality of the adaptations work; and the client’s satisfaction with the outcome. Interviewees were clients who had recently experienced the adaptation process and professionals who were involved in the adaptation

process: occupational therapists, grant surveyors, consultant surveyors and builders. Direct observations of adaptations were carried out during the course of the client interviews in their homes. Architectural qualities of the adaptation, such as layout, material, equipment and furniture, were recorded by the use of photographs and field notes. Additional sources of data were formal documentation, such as schedules and plans.

Six clients were interviewed in their homes. In three cases the client's spouse participated. Two of these three spouses were the client's main carer. One of them had represented her husband in the adaptation process for the reason that he was unable to communicate due to a stroke. Clients were aged 45 and above; the oldest was 93. Four of them were women.

Clients' bodies in major adaptations

The six clients in the study had a variety of disabilities and bodily problems that in all cases affected their mobility and balance to some degree. Two of the clients were full-time wheelchair users. The six studied adaptations were all bathrooms including a level access shower or a walk-in-shower, a sink and a toilet/closet. They all had seating in the shower, wall-mounted or loose, and water-proof flooring, so called 'wet floor'. In addition they were individually equipped with grab rails in various positions in the shower and at the toilet, extra seating and pumps for water evacuation. The layout of all bathrooms was similar. Three of the bathrooms were identical and one was a mirrored version of these three. Two of the bathrooms were big enough to offer a turning-circle inside. However, only one of the two clients who were permanent wheel-chair user had a bathroom wide enough to accommodate a turning-circle. Four of the clients had been using their adapted bathroom for approximately six months, one for more than a year and one client was still awaiting completion.

The embodied aspects of clients' experience

The encounters with the bathrooms were to a large extent embedded in bodily sensuous experiences of the environment both in the clients' imagination prior to the use of the new bathroom as well as the experience of the finalized space. The level access shower was a novelty to most of the clients in the study; most of the clients had never seen one before. The experience of temperature was the focus of concerns about the shower, for instance worries of being scalded or freezing if they were to fall in the shower. The client whose bathroom was not finished expressed her imagined ambiance of her up-and-coming bathroom: "The only

impression is that it is going to be cold; it is going to feel cold. We will see! Because of the wet floor, not the tiles.” The hearing had been occupied in an unpleasant way for two clients. They expressed their initial alarm at the unexpected noise of the shower pump. The wife who represented her husband explained how life can generate new ways of experiencing the surroundings when health drastically deteriorates. She described the noise from the pump as part of a greater pattern of experiences:

“What I didn’t like is the pump, it is so noisy. Things change when you have a stroke. My husband is scared of the pump. My husband is so sensitive. If an insect comes in he gets hysterical. We are used to it now”.

The visual sense played an important role in various ways. One client had been wondering if the light would be blocked by the shower curtain. The special problems that may effect the vision of older people played a trick on one of the women in the study. Shortly after the adaptation was finished in her home a cataract became so bad that she had to undergo an operation to remove it. When she got home she realized that her bad eyes had prevented her from fully appreciating the bathroom. She explained her experience: “I took the cover off in the bathroom and I got so surprised. It was so nice and light! [...] It looked greyish before. It was neater than I thought!”

The vision is the most dominating of the senses (Pallasmaa 1996). However, there were limits to the visual experience of the bathrooms. Clients tried to imagine the bathrooms by visualizing them in advance in the design phase. This proved to give them problems. Especially the size of the new bathroom was a concern for all clients as well as for their spouses during the design phase. They all claimed that they had had difficulties in imagining how big the bathroom would be. This had caused worries if all equipment and furniture would fit in. The youngest client described her efforts to fully grasp the size: “If you say the room is ten foot by six. I knew I am five point seven feet tall but I couldn’t see myself lying on the floor”. This client faced the special challenge that her bathroom had been subject to a larger spatial reorganization where adjacent space had been included, a wall was moved and the sink, as well as the toilet, had been put in new positions. Her account points to the limits of the bodily experience of space. She had tried to use her body as a tool to measure her bathroom in her imagination. This failed since the body, according to Merleau-Ponty, can never be an object to itself; we

“have no means of knowing the human body other than that of living it...Thus experience of one’s own body runs counter to the reflective procedure which detaches subject and object from each other,...” (Merleau-Ponty 2002:231).

The body has a strong first person perspective, a subjectivity excluding the opposite viewpoint.

In general all clients as well as spouses were pleased with the finalized bathrooms. However, many of the positive opinions about the adaptations revealed that neither the client nor the family members had been able to imagine all the benefits that would be gained from the use of a level access shower room. Neither of the two spouses, who also functioned as carers, had been able to foresee the extent to which the assistance they gave to the client would be facilitated. Clients were surprised about the adaptation being more convenient and safer than expected, and the extent to which it improved independence. The bodily experiences were central also to the assessment of the bathroom in these respects too. The body was used to evaluate the bathroom before as well as after it was taken in use. Clients knew to some extent in advance what they wanted and needed but had difficulties in imagining whether the bathroom would correspond to the fulfilling of their desires. The clients used their bodies as an assessment tool based on previous experiences. A number of concerns were raised about the use and function of the level access shower involving bodily spatial relations in various ways. Some of the clients talked in the interviews about the ‘wet floor’. They said that this gave them the impression of water going all over the floor. Women in the study (carers and clients) raised the issue of easy cleaning in many of the interviews. A 70 years old carer reflected on her limited ability to move: “I was worried about being swamped in water because I have difficulties in bending. I don’t always want to have to mop my floor”.

Reflections of this kind implied an individual understanding of the body, a *body image*, in Gallagher’s (2007) vocabulary. Other assessments of the bathrooms prior to its materialisation involved varied body images, about, for instance, personal estimations of body weight and reach, as well as an appreciation of the individual strength. These included whether the shower seat provided would be steady enough to carry the weight of the person or where the shower gel would be kept for ease of reach. The oldest client 93 years old had been wondering whether the curtain would be too heavy to move.

The body was an efficient assessment tool when the connection between cause and effect was quite obvious and direct. The body’s role was, however, more obscured to the clients

when the relationship to the environment was of greater complexity. As a consequence clients faced a lot of situations in their new bathrooms to which they had to adapt. They had to *embody* the new environment.

Some clients, over time, had developed particular care routines with their helpers when using the bathroom after completion which they had not been able to envisage in advance. These involved overcoming constraints by lack of space and by individual agility, moving safely over distances, often very short, and how to use the equipment in a personalised way. Some did not use the equipment provided. One couple described in detail how they managed to use the bathroom. The wife assisted her husband much less than she did prior to the adaptation was finished. It had, nevertheless, demanded great many efforts to develop the personalised use. They presented a narrative of their common experience. The client started his shower by **standing holding on** to the grip handles while soaking in water. He had got an extra handle put in after the bathroom was taken in use. Then he **sat down** on the shower-seat to soap himself, **raised** and showered off the soap afterwards **standing**. After the shower his wife assisted him in walking the steps to the closomat toilet beside the shower. He could walk by holding on to the wall and toilet. He sat down on the toilet where the wife wiped him dry. Then the couple continued to the bedroom where she helped him to get dressed. The wife and carer said that he did most of the showering now on his own which was a surprise to the couple. She explained how corporeally strenuous the situation used to be to her:

“It is marvellous for me because I had to go into the bath and that was a job! I had to kneel in the bath because I got funny knees. So I am grateful because now he just walks in and showers and walks out”.

She expressed great appreciation for the bathroom concluded by the last words in the sentence which is a summary of hers and her husband’s efforts. The words “He just walks in...and walks out” do not really reflect the complex relationship with the bathroom in the narrative. On the contrary, the narrative reveals a detailed spatial account in which a chain of movements are adapted to the spatial conditions in a stepwise sequence. The verbs indicated in bold in the narrative above I suggest are akin to *image schemas* which constitute a basic corporeal conceptual structure according to Johnson and Rohrer (2007). For instance, VERTICALITY and SOURCE-PATH-GOAL are two image schemas that were included in this narrative, combined in complex activity patterns. Others are holding, turning, sitting down, raising, etc., the smallest elements of our movements. These were subject to the client’s reflection while coming to terms with the use of new bathroom. Meaning, as

Johnson (2008) suggests, was produced from the combined image schemas in which the client's intentions were manifested. The challenges of the bathroom environment needed careful consideration by a disabled person; if you suffer from balance problems, while in the shower, you have to pay attention to your up-right position (VERTICALITY) and the risk of falling at the same time as you wash your hair. It is an effort requiring spatial considerations for you to walk to sit down on the toilet lid one meter away (SOURCE-PATH-GOAL).

The same type of narrative told by one of the full-time wheelchair users, described in a slightly different way the complex strategies she managed with the assistance of her carers. She did not have a turning circle inside her bathroom, which made the use of the bathroom somewhat more cumbersome although she indicated that it worked well. In these movement patterns she got in and out of different wheelchairs at different times (nights or mornings), mostly in the bedroom, and turned at certain points in the flat. She told about her morning routines: "In the morning the girls come and put me on the shower chair. I go into the bathroom and then I go back in the bedroom, get dressed on the bed and get in the other wheelchair". At toilet visits she turned outside the bathroom, rolled backwards into it. Evenings they removed the feet-support from the wheelchair so she could move forward into the bathroom, brush her teeth, and roll backwards out. These strategies, like the client's above had required thinking to develop. Her description is different in the way that the sequence is structured by the movements of the wheelchairs and her body's strategies to manage the chairs. There is a similarity between her story and the story Merleau-Ponty (2002) tells in his book about the blind man and his walking-stick which has turned into a part of the blind man's body, an extension of the body itself. The wheelchair in the story was maybe not experienced as a part of the woman's body, yet it had become a structural component through which all her spatial experiences were filtered.

A conspicuous ingredient in many of the clients' accounts of the spatial experience of the bathrooms is the emotional embodied appraisal of their behaviors in space. Emotions constitute a tool for appraisals (Prinz 2004). A most common emotion recurring in the client interviews was fear. Fear, according to Damasio (1994) is an embodied warning to the person that the environment is dangerous. The clients had good reasons for being careful. Some of them had experienced traumatic falls. The oldest client, aged 93, had fallen in the staircase in her home which inflicted permanent damage to her body. A female client, 71 years, who was prone to falling due to bad balance, said that she assessed her state in the morning:

“If the carer comes in the morning and I am terribly dizzy, because my balance is dreadful, then I don’t go in the shower. I just sit on the toilet and she gives me a quick wash as I can still fall in the shower. I am careful!”

Fear of falling guided her morning habits. According to Damasio (1994), it suffices to imagine a threat to the body to experience the feeling the real-life event would generate. The safety improvements resulting from the housing adaptation were of great importance to the clients.

The same client quoted above said that

“Yes, for one thing, it [the adaptation] removed an element of fear. I can't say that I can't fall in the shower but I am less likely to hurt myself than I would if I were in the bath. I am not frightened of lifting my legs because it is not high”.

It seems that the adaptations had decreased fear related to dangers in the environment although not completely removed it. This was not the case for all clients in the study. In the case of the stroke-affected client who got terrified by the sound of the shower pump, according to his wife quoted above, his fear had increased after the stroke and become abnormal.

Conclusions

The participant clients’ and spouses’ understanding of the adaptations prior to its completion, as well as their experience of the finalized outcome, the bathrooms, were to a large extent embodied. The clients’ perceptions of their bathrooms involved an interaction between body and environment ranging from basic human-spatial relationships towards relations of greater complexity, integration and evaluation. The clients’ accounts included an array of small scale performances, to stand, sit, rise, balance, walk, fall, reach, turn, bend, kneel, grip, many of the basic motion constituents with which we fundamentally navigate in space. The architectural design of the bathroom, despite it being a mundane space, offered an unexpected richness to the clients’ experience. Clients conveyed their nakedness, as well as tactile, haptic, sensory experiences of surfaces, water, dryness, temperature, light, sound, cold, hot - a palette of bodily exchange with the surroundings. The senses offered an intricate encounter with the environment (Pallasmaa 1996).

Client accounts portrayed their and their spouses’ attempts to master the new environments by deploying individualized patterns of movements and bodily strategies. These strategies involved reflection on major and minor bodily performances in space, also simple acts which don’t need any reflection in many situations. The body in the background of everyday life does not insist on attention unless illness or disabilities brings it forward to consciousness

(Leder 1990). The clients' experiences revealed that illness and disability may manifest itself in the micro scale of performances and interfere with the use of space in minute aspects as well as larger. The clients reflected on their bodily experiences to a much larger extent than able-bodied persons need to do when performing mundane activities.

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