Research paper
Understanding people’s needs in a commercial public space: About accessibility and lived experience in social settings∗,☆,☆☆

Mieux comprendre les besoins des usagers dans un espace public commercial : de l’accessibilité et de l’expérience vécue dans les milieux sociaux

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ABSTRACT

Adapting public spaces for persons with disabilities can be both physically and socially challenging. The two pilot studies presented explore the existing physical conditions of the mall and the social experiences of the mall users as these are documented and experienced by them. The research goals include understanding the

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1. Introduction

An appropriately designed environment may include enabling the positive experiences of all users, yet public spaces such as shopping malls are not always concerned about the accessibility of persons with disabilities in the universal sense. By universal access, we mean creating enabling environments where people of different abilities and disabilities can have access equally (Mace, 1997). This universal approach to the designed environment allows the full social participation of everyone in the activities of public interior spaces regardless of age or ability. Social participation is defined as “the ability
to choose and move around freely in one's environment and to do what one wants and needs to do, including accessing housing, employment, transportation, and social venues” (Ward, Mitchell, & Price, 2007: 150). However, too often environments and buildings may deny access to some while allowing access to others.

The studies presented here are predicated on the idea that the design elements play a role in determining positive physical access and that this access may have an impact on the subsequent social experiences of people with disabilities. Spaces are designed for social activities, and the way in which interiors and buildings are designed affect both social constructions and the subsequent experiences of individuals. These can be affected by the physical accessibility of buildings as either enhancing or hampering access, and in consequence, social participation.

This paper presents the results of two pilot studies considering people's experiences within the public space of the Alexis Nihon, a commercial shopping complex and includes assessing the design features enhancing or hindering accessibility, and the values emerging in the narrative of people’s social experiences while in the mall. The two studies, conducted at the beginning of the “Rehabilitation Living Lab Project” were: Study A: Understanding People’s Needs in a Public Space such as a Mall and Study B: Accessibility Assessment of a Commercial Mall Environment.

The research approach and data collection methods were framed within a constructivist approach and used action research and documentation methods. As the project researchers noted in a recent presentation:

“…This research occurs in the framework of action research (Price, 1999), in that perspectives and methods uncover issues during walk-abouts where the experiences of the space occur in real time. The conversations with the perspectives of users and various people who visit the mall are of value, as we seek to understand the lived stories (as narrative) of people in the context of issues and obstacles faced both physically and socially, and as these actions are happening in the mall. The mall is a space of experience, of services, and of engagement and is a place where lives, emotions, and interactions take place” (Bertin et al., 2013).

Research goals of the two pilot studies included:

- to assess the physical environment from a design perspective, from the perspective of characteristics of the space and its design, the spatial characteristics and the interiors' relative accessibility;
- to understand the experiences people have of the environment from their perspective;
- to compare the visual, physical environment to the experiences of the users and issues that are revealed.

2. Theoretical frameworks

Often studies on building spaces and their occupants are conducted from the perspective of person-environment interactions, with an emphasis on the psychological effects of the physical environment on human behavior (Altman & Christensen, 1990; Altman & Zube, 1989; Weiss & Moser, 2003), and often these psychological effects are causal explanations for behavior. However, less understood are the social constructions (Berger and Luckmann, 1966) that govern spaces and their occupants as these are mediated by the physical spatial characteristics themselves. Studies conducted with an understanding of how people with disabilities actually navigate public spaces, and what impact this has on their personal and social experiences, are less common. In terms of accessibility, while spaces and buildings are designed for optimal physical access and supported by local and national building codes (CSA, 1995), in certain buildings this access might be located in places or in ways that may not be ideal for the people with disabilities.

Two themes emerge when considering the theoretical foundations of interior spaces and how people with disabilities navigate within them: (a) the dynamic of interior spaces and the ways that they support social activities; and (b) the user experiences in terms of the life-world, phenomenological experiences, the social nature of experiences within spaces.
2.1. Interior spaces and social experiences

When people carry out activities in public spaces, they experience a myriad of impressions, perceptions and reactions. These experiences happen in interior spaces and environments as dynamic, social experiences. Each space has its particular physical characteristics, be these color, light, form or material placement and signage and furnishings choices (Birren, 1997; Mahlke, 1996; Malnar & Vodvarka, 1992). Experiences may be enhanced or hampered by these various characteristics and are subjective and specific to each person.

The perceptions, reactions and responses of persons with disabilities are not commonly known, and may not be in concert with the ways buildings are designed (Malnar & Vodvarka, 1992). Often buildings are designed for use by populations that are considered to be “average” (Pheasant, 1986). Moreover, the experiences of persons with disabilities and how these are enhanced by the physical interior, and how access provides for a positive personal experience of public spaces, is less evident.

Interior spaces also help people to capture personal memories that provide subjective meanings for people through the ways they perceive and react within interiors in everyday lives. People also receive social cues from others and act on these cues in social situations. This applies to various groups of users. For instance, Shirley Ardener (1981) and Daphne Spain (1992) illustrate how spaces socially segregate women from men, and how this is historically and geographically ingrained within the design of certain types of lived spaces such as the home, the workplace and schools. The two authors use the term “gendered spaces” to propose how the design of certain spaces provide access to one gender while blocking access to the other, thus influencing the social constructions of the relationships that ensue (Vaikla-Poldma, 2013).

Personal and social experiences intersect when we arrive at public places for activities. If we consider the experience of the elderly for example, they may congregate in malls through their desire to have a happy sense of place, and for various motives such as to avoid isolation. Indeed, research on the elderly has shown that they frequent malls as places of recreation (Bloch, Ridgeway, & Nelson, 1991) and as places of social interaction (Kang & Ridgeway, 1996).

2.2. The life-world and phenomenological experience

When people arrive in the public space of a mall, they meet people or accomplish specific tasks, for personal benefit or other reasons. These experiences may be positive or negative, may be personal or social, but all contribute to life experiences. This happens on two levels: personal life-world experiences the person has, and the ways the person interacts with others in social situations. The lived experiences described here are what phenomenologists term philosophically as “real, lived” experiences, as these exist in the “life-world” (Habermas, 1989). Experiences happen to the individual in the life-world as a place where direct, lived experience takes place (White, 1998). These experiences are inter-subjective in nature and are personal to the person having the experience in the life-world.

Furthermore, in this life-world, when people step into social situations, they engage in social activity as those engaged within ‘action situations’ where evolving and interactive social situations are informed by inter-subjective experiences in an “action situation” (Habermas, 1989). As this author suggests:

“For those involved, the action situation is the center of their life-world. It has a movable horizon because it points to the complexity of the life-world. In a certain sense, the life-world to which participants in communication belong is always present, but only in such a way that it forms the actual background to the actual scene. As soon as the context of relevance of this sort is brought into a situation, it becomes part of a situation, it loses its triviality” (1989: 123–124).

Thus our life-world is where the action situation occurs, and in the moment of this experience, the action situation thus becomes our “lived experience”.

When we add the dynamic situations of the persons with disabilities to the contexts of a situation such as a busy shopping mall, these experiences become affected by, or manifested within, the social contacts and physical barriers that hinder accessibility both physically and socially in the particular “action situation”. It is precisely this “action situation” we examine in the present studies: what persons with disabilities experience and what design features of the environment assist or hinder these
experiences. The research tools and methods were also chosen to support the action situation and to document the experiences as these occur in real time.

2.3. Implications for people with disabilities in the designed environment

Increasingly, in an effort to connect, people use public spaces as places to promote well-being. The mall becomes then a space of services, of social engagement and of gatherings, and subsequently a place where social interactions take place. This inhabited space and its occupants are interacting together in this life-world and in an action situation, as Habermas describes. The mall space and its surrounding activities becomes a space of activity, of social engagement and ideally an interface where persons using the environment can positively engage with the environment and one another and have a positive experience.

If the mall can be considered a place of well-being and positive engagement, then the quality of our interactions can be better supported. However, this level of positive engagement is not evident for persons with disabilities, as the needs of the commercial spaces as a place of commerce, for example, are different than those of the disabled persons trying to frequent the space for their various activities. The role of the stakeholders and those designing the space is to design the elements of the environment to support these needs and desires. Research goals include informed decision-making, using the emergent issues within the research to reveal how persons with disabilities experience the mall spaces and providing these results to the stakeholders for consideration and informed decision-making.

3. The research approach and the methodology

3.1. The methodological framework

The overarching research approach of these studies was framed within a constructivist paradigm, where research proceeds with investigators and participants interacting in the research process together. This paradigm is supported by an epistemology wherein: “The investigators and the object of investigation are assumed to be interactively linked so that the ‘findings’ are literally created as the investigation proceeds” (Guba & Lincoln, 1994: 111).

The data collection includes three steps: (1) a documented analysis of the physical environment, its users and activities; (2) a visual documentation of the design elements and characteristics of the interior mall public spaces; and (3) conversational walk-abouts conducted in real time using action research approaches. Content analysis of both the visual and the narrative data was followed by a comparative analysis to confirm the experiences of the space as described by the participants.

3.2. The choice of the action-research approach and the role of the researcher

In both studies, the second part of the data collection consisted of researchers actively visiting the mall to support and record the experiences of participants as these occurred in action. This action research approach is a form of qualitative approach, and as Glesne and Peshkin note, is interpretive in nature:

“Quantitative methods are, in general, supported by the positivist or scientific paradigm, which leads us to regard the world as made up of observable, measurable facts. In contrast, qualitative methods are generally supported by the interpretive paradigm, which portrays a world in which the reality is socially constructed, complex, and ever changing” (1992: 5–6).

In this action research situation, the narrative of the participants’ experiences was recorded as the walk-about occurred. In this type of research, the entire process, including the researcher position, is recorded. Atweh, Kemmis and Weeks (1998) suggest that in action research, researchers reflexively inquire about how they interact with the world and with others and in terms of how they describe and interpret their world.

The entire process was documented and interpretive tools were used to analyze the narrative and data texts. The value of this type of inquiry is in situating the inquirers and researchers together in the context of the situation within which they understand their experiences and interpret them as
these occur (Atweh et al., 1998; Vaikla-Poldma, 2003). Underlying values are taken into account and the researcher helps facilitate uncovering and even creating outcomes (Guba & Lincoln, 1994). The researcher role is to orchestrate and facilitate the inquiry process. In both studies, the researchers accompanied the participants as they revealed the situations of navigating through the mall as they would normally for their own purposes. The researchers were interested in reflectively recording the activities, understanding what the participants were saying as they described their experiences, and uncovering what was happening.

3.3. Participants in the study

For each study, research teams included a researcher with a disability, students, users/stakeholders, and the principal researcher. One researcher with a disability was a frequent mall user who experienced issues of access to the mall. Study A included 11 participants, including one person with a visual impairment who used a guide-dog, one person with visual impairment but with relative independent mobility and three persons with severe disability in wheelchairs. The researchers included persons with disabilities and all researchers accompanied the participants during the visits. Study B was composed of 9 participants, including persons in wheelchairs (n = 3) and a researcher/collaborator with disabilities who also was a user/stakeholder in the mall (n = 1).

3.4. The data collection and analysis process for each study

Pilot Study A proceeded as follows: (1) a preliminary physical space assessment and user needs assessment; (2) a visual documentation of the spatial characteristics; and (3) walk-abouts and conversations in the mall to glean user experiences with subsequent comparative analysis. First, one team recorded user needs and physical assessments of the three levels of the mall public spaces as a “User Needs Assessment”. Each level of Alexis Nihon was documented in terms of the public space characteristics, circulation paths and people’s activities in the mall at various times of the day and into the evening. Second, the entire mall space was documented visually and two different teams verified the existing space. The first team recorded space use and physical descriptive content with photos and sketches on all three levels, using the Environment Quality and Satisfaction Tool (Poldma, Dastoor, & Brack, 2007), identifying the major design elements such as circulation areas, materials, finishes, lighting and signage.

The photos and spatial characteristics were then analyzed, using a modified version of visual content analysis (Rose, 2001). Each photo was analyzed for the characteristics of the space and organized by type of element and characteristics, by floor level (lower, ground and second) as well as by type of design element. In the second phase, the detailed user needs analysis revealed user types, spatial design features, and issues that emerged from the spatial analysis of the existing environment. The participants described their impressions as these occurred and the researchers listened, recording the open-ended conversations in the form of analytic memos, journal notes and photos (Ely, Viz, Downing, & Anzul, 1997; Rubin & Rubin, 2005). Following the third walk-about, discussions occurred informally over a coffee as the participants were eager to talk about their arrival, the features and issues in the mall, how they “work around” issues and their suggestions for improving the mall environment.

For Pilot Study B, the process was similar; however, the data were specifically collected to assess the relative success of accessibility of the physical environment for users. Two major elements were examined: (1) code analysis and study by architect/designers and by persons with disabilities; and (2) visiting the space to assess the relative success of access from the perspective of the architect/designer and participant as designer/person with a disability. During the visits, the research team analyzed the code provisions and compared these to how the space can be understood and “read” by the user as they arrive. How do they access the space easily and how do they then “read” the spatial cues such as doorways, ramps or access points to be able to navigate them and find them to get to where they want to be?

First, the research team listened to the participants as they identified the degree of familiarity and the level of ease identifying the essential elements such as access to stairs, to elevators, to rest rooms, and how this is done almost instinctively. Second, the research team questioned that familiarity after
several visits to the site. The goal was to compare the two experiences and determine the most critical access points and what design elements, in terms of needs, were necessary to be able to improve the spatial fluency for a disabled person. Both the physical code study and the visits followed the same research modes (visual content analysis and hermeneutic reading with interpretive analysis).

4. Findings

4.1. Pilot study A: understanding people's needs in a public space such as a mall

4.1.1. Visual analysis of the space and its characteristics

In the analysis of the first data collection, emergent characteristics include several existing features of the mall itself and its population. In summary, these mall characteristics are:

- general state of the interior spaces, including arrival and entry points, comfort and ambiance, quality and durability of materials and surfaces, and security;
- activities and uses including circulation, services, primary activities (e.g., going shopping, getting specific services, going to a restaurant or to the store, eating in the food court, going to the subway through the mall from work, working in the commercial towers attached to the mall) and secondary activities (e.g., walking in the mall, traveling through the mall, sitting, waiting for someone, using the facilities);
- user types that frequent the mall, including people coming to the mall from neighboring sites, transitory users (travelling through the mall), permanent users (people from the commercial office towers and apartments attached to the complex), vulnerable populations such as parents with strollers and the elderly;
- salient spatial elements that affect the integration of persons with various disabilities, are: materials with poor contrast on floors, walls and built-in elements (glossy tile, mirror, shiny surfaces on counters); spatial organization elements such as placement of elevators relative to information counters and arrival points, exits and entrances; ambiance (noise factors); lighting; storefronts and kiosks; way-finding elements such as signage and information boards or kiosks.

Second, the content analysis of the visual characteristics of the interiors is juxtaposed against these salient points listed above and conversations during walkabouts with the participants. This comparative study reveals issues about the environment. These include:

- the ability to circulate and adequate pathways, but access to certain entrance points is not adequate, such as the lower level at the subway entrance area (circulation);
- when circulating, the flooring pattern hampers navigation and way-finding as it is very high contrast and the light hitting the floor causes glare; when looking at the floor to guide direction, there is an inability to “see” due to glare on the floor. This hampers visual stability when trying to orient in the mall (circulation, visibility, comfort); low contrast between signage and ceiling elements hampers the ability to see the way-finding tools such as identifying signage of the mall, or signage for restaurants and stores;
- visual noise that hinders ease of comprehension of visual cues within the spaces (visual comfort) such as signs and other visual cues (logos, store signage, orientation signs);
- auditory noise that severely hampers understanding auditory cues;
- inability to foster social skills using the mall features as guideposts.

4.1.2. Walk-abouts: understanding experiences

Several themes emerge in the analysis of the walk-abouts:

- navigation and way-finding: difficulties vary widely depending on the disability;
- the perception of space depends on the physiological characteristics of the person with the disability. For example, a person in a wheelchair cannot see the signage at the ceiling but can identify its placement, while the person with low vision cannot place the signage due to the “visual noise” that
surrounds it, such as other signs, indicators or poorly contrasted materials that produce glare from poorly placed lighting:

- issues of time and displacement depend on the types of disability. The participants with low vision appreciated the presence of a subway station at the lower level entrance, as they could walk into the mall from the subway in about 2–3 minutes. However, there is no access for the person in the motorized wheelchair, who must leave the mall, go outside and reenter the mall, and this may take up to 45 minutes, due to multiple factors such weather, crowds and most important, the absence of a ramp. This was demonstrated with two separate walk-abouts recorded in real time;

- social interactions with other people in the mall: generally people were friendly when walking around. However, difficulties arose when trying to ask others for help. Contact with store personnel depends on the store, and the knowledge of the employee serving the user (all types of participants). One participant noted a feeling of unease with guide-dogs accompanying the person;

- the mall as a gathering place: participants liked to meet their friends, despite the issues in the actual space; this was commented on by several participants;

- preparing to go to the mall: two participants discussed how they use the internet and their “mental map” of the mall to plan their trip to the mall, and manage to overcome the issues they face, as they enjoy coming to the mall.

In the subsequent comparative analysis, the visual analysis is juxtaposed against the participant impressions.

4.2. Pilot study B: accessibility assessment of a commercial mall environment

In Pilot Study B, a thorough code analysis is conducted of relevant building codes for commercial spaces in Canada and then the mall is assessed in terms of access and code requirements. Second, observations of the different access points to the mall are made and these data were confirmed with walk-abouts on site by the research team.

The data from the code analysis and the on-site impressions are analyzed together. Emergent themes identified include:

- visibility and access: visibility in terms of identifying elements for access is not evident at the mall. For example, the position of the information desk, at one end of the space is hard to access from the opposite end of the mall, where the persons with wheelchairs are dropped off. In terms of visibility, there was no clear view nor way-finding towards elevators, entrances and exits. Some kiosks and stores, by their positioning, hamper visual access even further;

- the access point of the subway to the mall, while serving a great number of persons, does not in any way facilitate access, and despite the space itself being easy to navigate once there;

- signage and information: the signage accentuates the problems of identifying and understanding the space. First, the signage is designed with reflective media or transparencies and has small size lettering, both contributing to poor contrast. The arrows do not consistently indicate the directions accurately. These issues combine to make the signage elements difficult to read, especially by a person with viewing (vision) difficulties. Consequently, elevators are difficult to find in the existing space and the entire signage/information gap prevents way-finding with ease in the mall.

These issues culminate in a highly confusing visual interaction, resulting in an uncomfortable experience of the space. Other issues that emerge during the walk-abouts accentuate this:

- the display stores overlap circulation areas and accentuate the risks of interference for the passer-by due to lack of clear pathways to circulate;

- the furniture used for garbage collection or for advertising creates confusion because of their positioning in the mall (especially for a person on a wheelchair) and interferes with the capacity to see the strategic areas like the information desk, or some important signage;

- the quality and intensity of light differs markedly from one space to another. The example is given by the atrium and staircase where we flow from more than 100 lux in the atrium to 30 lux in the
staircase. This represents a large variance in lighting contrasts in an area where normally uniform lighting levels are required;  
• poor signage and interference from surrounding materials add to the “visual noise” making understanding and reading signage difficult.

4.3. Common and divergent issues emerging in both studies

Multiple obstacles and issues were identified in both pilot studies, and in some cases, certain issues overlap. In terms of common issues, design elements such as lighting and material choices were considered problematic due to either too severe contrasts or not enough contrast to make clearly visible and legible visual cues in the mall such as pathways and storefronts. Issues also included a lack of good signage for finding mall services, and a lack of ease in circulation caused by issues of poor visibility and lack of appropriate contrast in materials on the floor specifically. In both studies, navigation and using signage and visual spatial cues to find one’s way in the mall (way-finding) were considered important for persons with disabilities. Accessibility and ability to read floor materials as indicators of changes in the environment are also important for the participants in both studies. In both cases, coming to the mall far outweighed the issues of the mall itself, even though getting into the mall was a challenge for some.

Overall, all participants also noted in conversation with researchers that they had an overall positive attitude in navigating the mall, in that despite the challenges discussed, they adapted to the mall even though the mall did not always adapt to them. While the experiences of people were individual, the participants placed a large value on the social experience of coming to the mall. Coming to the mall to meet a friend was more valuable than staying away, and the social experience with friends was important. Less positive was the feeling of social isolation when being served in the store, and when waiting in a line-up for a coffee.

Divergent issues that emerged in pilot study A that did not emerge in pilot study B include: arriving at the mall, the perceptions of space, issues of time and displacement to and within the mall, and the use of the mall as a destination and a gathering place. The experiences that participants describe reveal needs such as having time to read and judge spatial adequacy, understanding and reading the environment clearly, and then being able to navigate the mall comfortably. Even before arriving at the mall, and independent of the disability, all participants talked about how they prepare to come to the mall, and how they memorize the information they glean about where stores or restaurants are located, to assist in their navigation when they arrive. However, this does not account for obstacles that might be in their path when they arrive, such as the lack of access from the subway level.

Contradictions occur as well, in the sense that sometimes elements were inadequate for people with visual disabilities, but were adequate for people with mobility limitation. For instance, while the poor contrast and glare on the floor make it difficult to navigate for persons with low vision, the wide open spaces were seen as facilitating circulation for persons with wheelchairs.

5. Conclusion

These early results suggest that spatial designs may support people with disabilities in subtle ways that can either facilitate or hamper their experiences and affect their social experiences. To be able to improve the experiences of spaces and create truly universal space, understanding the direct, lived experiences of people with disabilities is vital. The issues raised inform the designer and the mall owner of the impact of issues such as the circulation, way-finding and material contrasts as elements that can either facilitate or hamper access and circulation for persons with disabilities as independent users of the mall. The spatial design can, unintentionally or intentionally, support or hinder access to the mall in a more universal sense, and this may lead to difficult social exchanges and affect social relations. For example, in Pilot Study B, codes and norms were considered adequate and the mall interiors did fulfill the required design directives for commercial use. However, from the perspective of persons with disabilities, the existing physical elements were of poor contrast and the mall access points to the subway were poorly relocated. Analysis revealed that the actual interior was not suitable
for persons with disabilities, creating social needs adding to their stress of feeling socially stigmatized when trying to use services within the mall.

In Pilot Study A, discussions during the walk-abouts indicated the issues people face when trying to have a positive experience in the mall. Participants focused on specific interior characteristics that prevent access and/or social inclusion, and what elements within the space might be changed to better accommodate their needs. Individually, however, many of the participants manage to navigate despite the difficult conditions and generally appreciate the mall environment in terms of location and ease of circulation. This paradox reveals that people will adapt to the conditions of the environment, but that this does not mean that the environment cannot be more universally accessible without this extra effort to adapt becoming necessary.

The examples provided by the two studies present only a small sampling of issues about spaces in the entire Living Lab. As these were pilot studies with limited time-frames and participants, the emergent themes demonstrate the need to develop further data and metrics with more in-depth findings, and to glean the specific ways design might be changed to respond to stakeholder needs of commercial branding and to simultaneously support best practices to change designs within the mall or in similar public spaces.

In terms of the conversations with participant-users, their life experiences were hampered by accessibility limitations of the mall and they nevertheless wanted the experience of meeting a friend there despite the conditions. Subtle issues in the design of the space affect the resultant sense of social integration or exclusion, as was expressed by participants in conversation with researchers in the mall environment. The pilot studies were first glances at these important social relationships, and how the interior environment shapes these experiences in substantial ways for persons with disabilities in the public spaces of malls. These pilot studies revealed how these experiences can be made easier and how the environment can be changed to provide both access and ease, through specific changes to the mall spatial organization and materials, and to way-finding choices and locations.

Current findings are already being implemented where possible, as the mall owners begin renovations to the mall as it becomes a live and changing environment, a true “Living Lab”. New and different research projects are being proposed, and changes are being made to circulation and spatial placement of major elements by the project management and design team renovating the mall.

For our world to truly be inclusive, these inter-subjective experiences must be taken into account when creating lived interior spaces and further studies in the Rehabilitation Living Lab will provide opportunities for these investigations.

Disclosure of interest

The authors have not supplied their declaration of conflict of interest.

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