The concept of *environment* according to occupational therapy - an architectural point of view

Mika Blomqvist

Abstract

This paper is an attempt to bridge the gap between concepts that are frequent in occupational therapy and other concepts used in the architectural discourse. For instance, the concepts of environment, environmental impact, space, object, occupational setting, just to mention a handful have a potential match with concepts used in architectural thinking. Of special interest for this explorative study is the notion of occupational setting that will be compared with the architectural notion of program. In addition, the focus found in occupational therapy on the individual and his or her needs are parallelled with the notions of accessibility and usability as qualities of the architectural space. This paper concludes that while the approaches may be overlapping, the difference stems from the radically different foci of the two disciplines. Occupational therapy focuses on the individual person, while architecture focuses on the built environment.

Key words

Architecture, occupational therapy, environment, design, accessibility, Model of Human Occupation

Introduction

Within the architectural discipline, accessibility is often seen as a necessary "adaptation" of the built environment to the needs of a minority: people with disabilities. As exemplified in the headquarters of the Danish Association for people with disabilities (DH) in Taastrup on the outskirts of Copenhagen, the built environment can also proceed from the various needs of people with disabilities. This may result in a type of built environment that might be of a more or less disabling nature for so-called "able-bodied people", e.g. strong colour accents to facilitate visual orientation by people with visual impairments may cause migraines in people who do not suffer from this particular problem, being well in line with the proposition that it is not the person that is disabled, rather that the environment is disabling. In Sweden, the legal starting point is always to design as accessible as possible and for a large and varied group of users. However, people without disabilities seem to still be the norm in actual practice. While an environment can be "extra accessible", or lauded as "well adapted" to the needs of disabled people, it can hardly be less than accessible to people without disabilities.

The aim of this paper is to introduce and, from an architectural standpoint, discuss a key theoretical assumption of occupational therapy when it comes to the physical environment. Namely, the concept of *environment* in the Model of Human Occupation or, in short, MOHO. This study has an explorative nature and will try to make a tentative probe into the much larger discussion of theoretical affinities between architecture and occupational therapy.

Background

An oft-repeated phrase in architectural education is the Protagorean motto: *Pantõn metron anthrõpos*, or "Man is the measure of all things"[1]. The assumption of the universality of Man has become increasingly superseded by the idea of a diversified group of users who demonstrates different interests but also having personal abilities. This is, however, not easily implemented in practice during the course of the architectural education. The idea of the universal has an attractively simple unity to it, the notion of that which works "for all", while diversity is fundamentally open, having virtually endless variations, which might contribute to this difficulty.

However, discussing disability discourses that are found in other disciplines and professions could be of help for students of architecture, in order to elucidate architectural perceptions and preconceptions of disability, accessibility and "ability". It could also, perhaps, shed some light on the issue of what disabilities are considered in the standardised accessibility discourse of the architectural practice, and which are overlooked or consciously ignored. For example, in my copy of *Arkitektens handbok* the chapter on accessibility is exclusively discussing the needs of wheelchair users.[2]

Swedish disability policy in relation to architecture has been characterized by quantitative requirements for the physical environment to guarantee a general level of accessibility, in combination with assistive technology to remove the remaining obstacle for a person with a disability, which has a certain impact on architecture.[3] As we now see the increasing importance of the concept of universal design in other countries, as well as in other professions, and its implementation in the UNCRPD, Swedish policy making may have reached a turning point.[4] Architects in Sweden have been quite closely involved in the Swedish development of the idea of accessibility, but the built environment has many stakeholders, on many levels, and changing the model is likely a long-term process. Luckily, while the consequences of the legal shift in this direction are still in a relatively early stage as regards the effects on architecture, other professions and disciplines, not directly responsible for designing the physical environment, have been implementing these or similar approaches to disability for some time. A prominent example would be the discipline and profession of occupational therapy (or ergotherapy), which is predominantly focused on the concept of occupation, defined as "the doing of work, play, or activities of daily living within a temporal, physical, and sociocultural context that characterizes much of human life".[5]

While occupational therapy, at least in Sweden, is mostly associated with assistive technology and rehabilitation training aimed at individual autonomy for persons with disabilities, the main theoretical framework is an attempt at a holistic understanding of both the medical issues at the one side of disability, and their interplay with the larger sociocultural context. There is no single corresponding theoretical framework for architecture or architectural education, but reference is frequently made to,

---

[1] Bodin et. al. 2011 p. 99 While Plato accused Protagoras of by this phrase implying that there were no absolute truths by which to judge (i.e. measure) actions, it is here used in the literal sense, i.e. that designing the built environment has its base in the dimensions of the human body.
[2] Ibid. p. 104ff
[3] Andersson 2016
[4] von Axelson et al. 2016
[5] Kielhofner 2008 p. 5

inter alia, the phenomenological works of Christian Norberg-Schulz, the sociological works of Henri Lefebvre and Pierre Bourdieu, and Donald Schön's idea of "reflective practice".

The MOHO concept of *environment* - an architectural reading

The Model of Human Occupation, or MOHO, is both the name of a theoretical model and the name of the book wherein the model is published. First published in the 1980s, the model has gone through four editions up until 2008, each new edition expanded and added to by occupational therapists and researchers from around the world, in collaboration with the model's originator and the main author of the book, Gary Kielhofner, Occupational therapist and professor at the University of Illinois at Chicago. MOHO has become the most widely used model in occupational therapy practice internationally, and aims to "support practice throughout the world that is occupation-focused, client-centered, holistic, evidence-based, and complementary to practice based on other occupational therapy models and interdisciplinary theories".[6] As a theoretical model, MOHO introduces several concepts and distinctions to further its analysis. One important concept is the concept of *environment*, as

> [a]ll occupation occurs in a complex, multilayered environment. Occupation is always located in, influenced, and given meaning by its physical and sociocultural context.[7]

This is, of course, hardly controversial for the field of architecture. A very important set of distinctions follow, however, as the use of the concept of environment is significantly wider than the one used in architectural discourse:

> Thus the environment includes the spaces humans occupy, the objects they use, the people with whom they interact, and the possibilities and meanings for doing that exist in the human collective of which they are a part.[8]

Kielhofner then goes on to introduce the concept of *environmental impact*, i.e. the impact that a particular environment has on a particular individual, and which is dependent on the properties of both the environment and of the individual.[9] Whether this impact will disable or enable the individual is determined by the interaction between the characteristics of the individual and of the environment.[10] Kielhofner stresses that the environment often is "the critical dimension that either supports or interferes with an individual's occupation."[11]

Kielhofner defines environment as "the particular physical and social, cultural, economic, and cultural features of one's contexts that impact upon the motivation, organization, and performance of occupation."[12] A list follows, enumerating the dimensions included in the environment, namely:

> The objects that people use when doing things
> The spaces within which people do things
> The occupational forms or tasks that are available, expected, and/or required by the context

---

[6] Kielhofner 2008 p. 1
[7] Ibid. p. 21
[8] Ibid.
[9] Ibid.
[10] Ibid.
[11] Ibid.
[12] Ibid. p. 86

The social groups (family, friends, coworkers, neighbors) encountered
The culture that infuses and influences both physical and social aspects of the environment
The political and economical context that influences such things as freedoms and resources relevant to occupation[13]

A typical understanding of architecture, would perhaps include at the very least the second point, *spaces*, as long as these are designed and built by people. Kielhofner also briefly discusses what he terms "natural spaces"[14], which are not man-made, but it is clear that the built environment is the main object of interest, as most of our occupation takes place there. However, architecture as design could also include the first point, *objects*, both as many architects also design objects other than buildings, but also as the envisioning of objects within and without the building is a central aspect of building planning and design. Both when it comes to functional and aesthetical considerations. This also connects to the third point, *occupational forms or tasks*, as building planning to a large extent consists in designing or accommodating the interaction between humans and the envisioned objects. Thus knowing how and what the building will be used for is subject to the architect's interest. The fourth point is also of interest, as it is related to the architectural notion of the user, or the user group. Who are we designing for? And also, what kind of sociocultural context do we want and/or expect? The sixth point, *political and economical context*, is perhaps not as closely related to the design considerations, but could be understood on two levels in respect to architecture. One is the political and/or economical background constraints that determine what kind of commissions and projects will ever reach the architect. The other is a broader understanding of what a building does on a micro-level, i.e. for whom does it allow or deny access, who is hindered and who is supported by the design choices? Finally, the fifth point, *culture*, is more difficult to pinpoint exclusively to the design dimension of function, but easily connected to the aesthetic dimension. However, I believe that a discussion of aesthetics is far outside the scope of this paper. Instead, culture will be considered as more of a functional dimension, i.e. how different functions may have to be designed differently in different cultural contexts.

Regardless, Kielhofner makes clear that the environments "demand particular behaviors and discourage and disallow others"[15], which also relates to his later discussion of objects.

Objects are naturally occurring or fabricated things with which people interact and whose properties influence what they do with them. While objects in natural environments occur according to the scheme of nature, those in built environments are placed there by human design. Which objects are present and how they are organized generally depends on the purpose of the space and cultural convention.[16]

Human design, of course, is influenced by the contexts as well, as the purpose of a space is heavily tied in to the cultural conventions surrounding the idea of the occupation that is planned to take place in the space. Conversely, the impact of the environment also influences "the development of habits and roles"[17], which are two of the other aspects that determine human occupation. The relationship between the environment and the individual is therefore not to be construed as a static one, rather a continually developing and changing one, where one influences the other. When it comes to architectural design, it is perhaps easiest to envision the influence of the environment upon the

[13] Ibid. p. 86
[14] Ibid. p. 88
[15] Ibid. p. 87
[16] Ibid. p. 88
[17] Ibid. p. 87

individual, as the individual adapts to the constraints of the environment, or encounters obstacles or supports. This is also closely related to how Kielhofner defines space, or rather, spaces:

> Spaces are physical contexts that are bounded and arranged in ways that influence what people do within them.[18]

It can be seen that space is here completely dependant on the notion of human occupation, which is of course a highly valid starting point in designing most buildings. Another point that is perhaps highly applicable in architectural design and critique, is the distinction between environment and environmental impact, the need for discerning between the "features of an environment and its actual influence on specific persons"[19]. It is however complicated by the fact that the end user in architecture is seldom known to a degree that is really specific. Rather, the end user is a hypothetical average person, often to a large extent identified with the person designing or critiqueing. Or at least, that is often the impression. Perhaps unsurprisingly, then, "[m]ost fabricated objects in the environment are naturally geared via their size, shape, weight, complexity, and functions for able-bodied, sighted, hearing and cognitively intact individuals."[20] A fact that in turn plays into the cultural conceptions of how built spaces are related to certain occupations:

> Occupations often take place in specific built spaces, such as a school, stadium, shopping mall, or salon. Built spaces reflect and are instrumental to culture. They are readily recognized by members of the culture as having a designated purpose and as intended for certain persons' use.[21]

This cultural "filter" works in both directions, then: the built environment and the way it is experienced is conditioned by and directed by the cultural context, where as the cultural preconceptions that make up the cultural context is concurrently affected by the experiences in and of the built environment. In this way, cultural preconceptions shape the built environment, and the built environment in turn shape the cultural preconceptions. This interplay is likely to be clear to people within the architectural discipline, while Kielhofner finds it necessary to point out that:

> It is easy to see how the social world, the world of human relationships and activities, is shaped by culture. Nevertheless, there is an equally important influence of culture on the physical environment.[22]

Unfortunately, culture can often be seen to have an excluding effect on persons with disabilities, both when it comes to the roles that persons with disabilities are assumed to take, and when it comes to the design of spaces, as "most cultures have little or no place for disabled persons in the mainstream of society."[23] The roles that are culturally available for persons with disabilities are often limited, and tend to contribute to the idea of persons with disabilities as a collective group with similar needs and possibilities, separate from the "normal" part of the population.[24] One characteristic that is more or less

---

[18] Ibid. p. 88
[19] Ibid.
[20] Ibid. p. 92
[21] Ibid. p. 88
[22] Ibid. p. 95f
[23] Ibid. p. 96
[24] It is also possible to construe taste or preference as a factor that "creates" a kind of mild disability in relation to the norm of the average or mainstream. A very personal example is my own difficulty in finding suitable headphones for listening to my preferred musical genre as I'm commuting. Contemporary pop music usually has a more or less constant level of loudness, whereas classical music heavily relies on the dynamic between loud and quiet. The latter is

specifically architectural is the lingering "institutionalism" aesthetic in specialized facilities such as residential homes. They are often "devoid of personal belongings, decorations comfortable furniture, and minor appliances, which can contribute to apathy and feelings of helplessness"[25] As objects in the space can also influence the behavior of persons in the space, this is an important point. Kielhofner mentions that this is often a consequence of efficiency considerations on an organizational level, but that it "too often" negatively affects what the residents do.[26] If similar conclusions can be reached through studies of how arrangements of spaces and objects influence the behavior of people for other, more diverse user groups, the implications would be of great interest to architects and designers even in other fields than the specialized facilities.

Yet another concept is the concept of *occupational settings*. An occupational setting is defined as "a composite of spaces, objects, occupational forms/tasks, and social groups that cohere and constitute a meaningful context for performance."[27] I would argue that this is closely resembling the architectural concept of *program*, in allowing for such a wide range of different influences. The program is also an aggregate of particular spaces, objects, the conventionalized forms for what is to be done within, and the relations between the users. The occupational forms stand out in particular, as whether a person succeeds in doing a task by definition is determined by how well that person complies with the conventions regarding that task.[28] For architects, as well as for occupational therapists, the possibility of reaching the goal of the occupation without necessarily adhering strictly to the conventionalized form, remains an important avenue for handling disability. On the other hand, this could also be construed as a question of equality, that persons with disabilities should be supported to not only reach the goal of the occupation, but also be enabled to do it like an "able-bodied" person, but this is frequently less effective than finding adapted strategies.

Furthermore, accessibility measures or assistive technology is often viewed as something purely technical and thus neutral. The design process then often centers on the end product "blending in" or being as invisible or discreet as possible against the background of the architectural design. This can of course be a consequence of the modernist preponderance for minimalism and "simplicity", but it is rather difficult to conceive it as completely unrelated to the fact that design in general is centred on "able-bodied, sighted, hearing and cognitively intact individuals"[29]. Nonetheless, assistive equipment "can invoke intense emotional responses", and "carry deep symbolic messages"[30] according to Kielhofner (which is likely true for any object, thus also for assistive equipment). Thus it becomes more of a question of why this is not really attempted, or utilized in architectural design.

The experience of disability is further discussed in the following paragraph:

> The environment also figures centrally in the experience of disability. In fact, a person's degree of access and integration into the physical and social environment can be used as an index of disability. Disability can be prevented or reduced when the

---

therefore difficult to enjoy in standard headphones while in public transport or on a car stereo. This view might help somewhat in easing the sometimes seemingly very sharp distinction between disabled and non-disabled persons.

[25] Ibid. p. 92
[26] Ibid.
[27] Ibid. p. 97
[28] Ibid. p. 93
[29] Ibid. p. 92
[30] Ibid. p. 92

environment is free of barriers and offers adequate support. Consequently, the extent of an individual's disability results in large measure from the surrounding environment.[31]

This is, perhaps, the seminal locus for the relation between disability and environment in MOHO, and relates closely to the Swedish counterparts to the concept of disability. The National Board of Health and Welfare (Socialstyrelsen) defines two terms, disability and disability-obstacle[32]. Disability is the medical aspect, while disability-obstacle is the "limitation that a disability entails for a person in relation to the environment".[33]

Discussion

The very broad definition of environment proposed in MOHO, while seemingly far-reaching, can be seen to correspond rather closely to the architectural conception of architecture, or built environment, when that environment is seen not as a finished product but as a totality of processes leading to an outcome that then continues to take part in the interplay between object and context.

What can be learned from occupational therapy, is perhaps the attempt to go from the concept of mainstream or average person toward the concept of the specific individual. This is of course complemented by quantitative research, giving a general backdrop of knowledge to the focus on the specific individual. Whether it is possible to implement a similarly successful approach within architecture is an interesting issue. Occupational therapy seems to a degree to have been able to have harmonized the general and the specific approach to disability.[34] The tension between these two approaches is inherent in architecture, but is perhaps not very frequently discussed outside of accessibility. There is, however, a discourse on general and specific architecture or buildings at large. Interestingly enough, the general approach to accessibility and the idea of a general building or space bear little resemblance to each other. Not that they necessarily conflict, but the general space is defined from conventionalized conceptions, likely based on the "normal" average person, so that accessibility issues becomes peripheral. Architectural discussions often have a problem-solution approach, which might lead to a focus on finding the optimal solution, and on the way perhaps lose track of the diversity of users. Of course, optimization is likely easiest to implement on the design stage in the case of specific architectural space, as in general spaces, a lot of the final decisions must be left to the coming users by not being designed into the built structure.

If we take a wider perspective on the differences of architecture and occupational therapy, the two disciplines can be characterized, or rather caricatured, as opposites. If occupational therapy focuses on the specific individual in the specific contexts, conditioned by general knowledge in its work with clients that are both target and users of its interventions, architecture, on the other hand, often focuses on the average person in an optimized but general context, conditioned by rather specific aesthetic ideas, more often than not working with clients that are not the end users. However, this is a caricature. Perhaps it is more accurate to describe the professions as engaged with the human environment in its

---

[31] Ibid. p. 97

[32] *Funktionsnedsättning* and *funktionshinder*, respectively, in Swedish. *Disability-obstacle* is an approximate translation of the latter following Andersson 2016.

[33] http://www.socialstyrelsen.se/funktionshinder (accessed 2016-11-30) (translation by author) Original Swedish wording: "Funktionsnedsättning är en nedsättning av fysisk, psykisk eller intellektuell funktionsförmåga. Funktionshinder är den begränsning som en funktionsnedsättning innebär för en person i relation till omgivningen."

[34] Cfr von Axelson et al. 2016, and Arenghi et al. 2016

widest sense. But whereas the one is focused on a holistic view of the individual persons, the other is focused on a holistic view of the individual objects.

References

Andersson, Jonas E., "Improved Swedish accessibility hindered by a housing imbroglio", in *Nordic Journal of architectural research*, nr. 2 2016

Arenghi, Alberto, Ilario Garofalo, Antonio Laurìa, "On the relationship between 'universal' and 'particular' in architecture", in Petrie, H., Jenny Darzentas, Tanja Walsh, David Swallow, Leonardo Sandoval, Andrew Lewis, Christopher Power (eds.), *Universal Design 2016: Learning from the past, designing for the future*, IOS Press, 2016

Axelson, Hans von, Arvid Lindén, Jonas E. Andersson, Terry Skehan, "Equalization and participation for all: Swedish disability policy at a crossroads" in Petrie, H., Jenny Darzentas, Tanja Walsh, David Swallow, Leonardo Sandoval, Andrew Lewis, Christopher Power (eds.), *Universal Design 2016: Learning from the past, designing for the future*, IOS Press, 2016

Bodin, Anders, Jacob Hidemark, Martin Stintzing, Annali Andersson, Sven Nyström, *Arkitektens handbok 2011*, Addera förlag, 2011

Eberhard, John P., "Three approaches to consciousness", ch. 1 in *Brain landscapes: the coexistence of neuroscience and architecture*, Oxford University Press, 2009

Kielhofner, Gary, *Model of Human Occupation: Theory and Application 4th ed.*, Lippincott Williams and Wilkins, 2008