Praxeology as a tool to search for the 'real end-user'

Lecture Series on Research Methods

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I INTRODUCTION

In practicing architecture and during the design process, designers face a field of problems that they have to solve. In contrary to other sciences, there are no formulas of laws that can be applied to obtain the right solution. Simply because there is not only one right solution, but many possibilities. Designing can be seen as "*a complex, personal, creative and open-ended skill*" (van Dooren, Boshuizen, van Merriënboer, Asselbergs, & van Dorst, 2014). This raises questions concerning the starting point and research methods that should be used. Eventually, the solution will be a combination between intuition, knowledge, experience and research.

In architecture, design and methodological research are highly interwoven. The difficulty for the designer is to find a balance between those two. New solutions and problems can be explored via research, which can be used directly in the design or can lead to new possibilities. "*In the design and development of new artefacts, scientific knowledge, together with common sense knowledge, is an indispensable problem solving capacity*" (Imre, 2007, p. 1). Research can underpin design decisions, but sometimes this is not sufficient. For example, when research leads to multiple valid solutions. In this case experience, intuition and knowledge of the designer is decisive.

Finding this balance is self-evident and unconscious for advanced designers. However, for newcomers it is hard to understand that designing is not only about taste, personal interests and feelings. During the architecture bachelor, students learn this by analysing existing buildings, context and history.

By doing design research, one can build a *body of knowledge*, which can provide insights in universal design problems and tools for designing (Imre, 2007, p. 7). By extending this body of knowledge methodologically, research becomes more focussed and sensible. It is important to apply the most appropriate methods in research; "*this will ensure that your answers represent an original contribution to knowledge.*" (Lucas, 2016, p. 7). In order to answer the questions in this field of problems, a researcher must be "*able to wield an array of tools, not just the hammer she is most familiar with*." (Groat & Wang, 2002). This is why research and research-methodological awareness is crucial in architecture; design decisions are more justifiable and professional.

The Lecture Series on Research Methods is taught to students to help them develop their research-methodological awareness. The lectures provide insights into the various systems of knowledge that can be used in the design process, and showed the interwoven relation between design and research.

Furthermore, it became clear that you unconsciously apply already a lot of these methods. The lectures provided the knowledge and knowhow to apply research methods consciously, precisely and focused. The lecture of Berkers (2018) for example, gave information about praxeology; the study of human action and conduct. It gave an idea how to conduct research and design something for a real- instead of an imagined end-user.

In my own research I focus on a specific target-group; people that have to deal with irregular working hours, such as night- and weekend-shifts. Their working hours have great impact on their daily life. Interesting is how these people live and what they need in their home, for example to sleep well during daytime. In order to design an appropriate house for these people, a praxeological approach can help to find the most important (design) aspects. Therefore, *how can a praxeology help to find the needs and architectural elements of this specific target group?*

II RESEARCH-METHODOLOGICAL DISCUSSION

The word '*praxis*' is derived from an ancient Greek word: '*prattoo*', which meant *do* or *act*. Praxeology is therefore the study of human action and conduct; how do people behave in a specific place (Benko, 2013). This can occur on different scales, from kitchens to entire cities. In this kind of research, terms such as ergonomics and spatial practice are important, i.e., how to make its use easier and more logical.

It is important to understand the needs and lifestyle of the target group, in other words: realise how people actually act. With this information an appropriate and customised design can be made. This notion of building for real users and the everyday use of architecture is also described by Turner (1968). He argues that dwellings should be the outcome of a dialogue between designer and end-user. Hereby he is critical about the standardised and mass produced dwellings. *"The intense dialogue that takes place between squatters planning an invasion, and the continuing dialogue of its development and administration are, with rare exceptions, totally lacking in the modern housing process."*(Turner, 1968, p. 360).

Often scientific research is based on theories and regularities, which can give a prediction of the future: empirical research. However, how people behave and act in general is difficult to predict or imagine on the basis of theories. Praxeology offers the possibility to search for the 'real'end-user and how they actually behave. This raises the question; how to obtain a clear picture of these 'real' end-users?

This can be done from an etic (observer from outside a culture) or emic point (from within a culture) of view. However, Lucas (2016, p. 10) mentions: "*Much of the most successful research will move between these two positions…".*

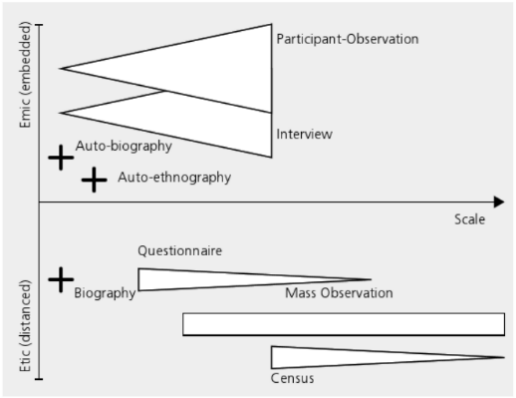

Figure 1. A diagram illustrating the etic and emic viewpoints. R. Lucas: Research Methods for Architecture. (2016).

By looking critically to other projects, one can find out how people use it. Just looking at a floorplan or section is not sufficient, the use of spaces will not be clear in this way. I would argue that it is important to visit the place, to observe from an emic viewpoint how the actual use is and how architecture is inhabited by real people. For instance, where do people put their bikes, plants and seats. This can be captured in photographs or sketches, made during the visit.

As Herzberger says *"… you can create the conditions for a greater sense of responsibility, and consequently also greater involvement in the arrangement and furnishing of an area. The users become inhabitants."* (Hertzberger, 2005, p. 152). He mentions that we should design in a way that personalisation of space is possible, that spaces should have the possibility to adapt to its users.

Besides, it would be valuable to experience yourself how it is to work during night-time. This information, from an emic viewpoint, can help to design a building that fits the lifestyle of the end-user even more.

Another way to find out more about the daily life of end-users are interviews and

questionnaires. The results can shape the project in a certain way. For instance, the results of interviewing people who work in nightshifts, can have effect on the position of the bedrooms and layout of the façade. However, there is a difference between depth interviews and questionnaires. Where questionnaires are more general and about mass observation (etic viewpoint), depth interviews are more personal (emic viewpoint).

An example of praxeology is the book *Bauentwurfslehre*, by Neufert, which contains detailed drawings of building elements and furniture, based on the human ergonomics; "*Der Mensch als Mass und Ziel" (*man as measure and goal) (Neufert, Neufert, & Kister, 2012, p. 1). Although published in 1936, it still is an important handbook for architects, students and clients (Zöllner, 2014).

Furthermore, it shows design solutions based on the idea of *Existenzminimum,* meaning that the shown methods are about efficiency and minimum size. However, this handbook should be used consciously, the challenge as a designer is to find balance between standardisation based on human dimensions and the personal needs and involvement of the future residents.

III RESEARCH-METHODOLOGICAL REFLECTION

Architect Bruno Taut, born in 1880, already applied praxeology. In his eyes one of the main aspects to start a design, are the individual lifestyles of those who will live in the design. In his own house, the Dahlewitz project, he wanted to build functional and customisable spaces that could fulfil different needs. He wanted spaces that adapt themselves to those who live in it (Ardizzola, 2017).

His designs are about rational use of spaces and how they are related. For instance, he added walking routes to his floorplans in order to show how people will move from one space to another. However, rationalism was not something he aimed for. He wanted to facilitate functions in a simple, clear and winsome way, in which the user played an important role. *"The successful environment, without the inhabitants is nothing and remains 'empty'. It takes consistency and becomes 'full' and finished only with humans who live there."* (Ardizzola, 2017, p. 47).

Another example of a human-oriented design approach is the *Frankfurt kitchen*, designed in 1926 by Margarete Schütte-Lihotzky. Influenced by the early modernist movement and Taylorism, she entirely reformed the working-class kitchen (Jarram, 2006). She conducted time-motions studies, which meant that she observed innumerous women working in their kitchens, meanwhile timing their movements. By doing so, she rationalised each aspect of the kitchen. This resulted in a more efficient kitchen, *"which would save miles of walking and much wasted energy."* (Jarram, 2006, p. 546).

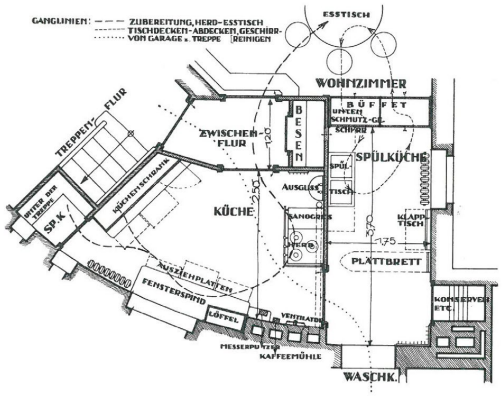

Figure 2. Floorplan Dahlewitz project, functional running lines.
P. Ardizzola*: The case of Bruno Taut's house in Berline-Dahlewitz. (2017).*

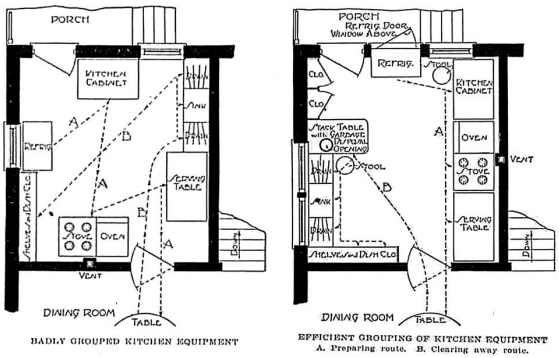

Figure 3. Left, model of an inefficient kitchen. Right, model of an efficient kitchen.
L. Jarram*: Kitchen sink dramas: woman, modernity and space in Weimar Germany (2006).*

In the 1950's GAMMA (*Groupe d'Architects Modernes Marocains*) investigated the slum dwellings of *Bidonville* in Morocco. Characteristic for this research was the social role of the architects; they considered the dwelling culture of inhabitants as meaningful for architecture (Avermaete, 2010).

According to Avermaete (2010, p. 49): "*Architecture has become a matter of the public."* Which is still the case today. How people behave and use their environment can be discovered by doing interviews, surveys and observations. However, in these cases people are aware of the spectator and being observed. What if they did not know whether they are observed or not?

Nowadays there are new possibilities when it comes to studying people's behaviour. The disposal to techniques, such as camera's, phones, sensors and public data, gives access to a lot of new information about how people really behave (Cooper-Wright, 2017). In addition to an interview or questionnaire, this can provide valuable information. This is because people intend to answer questions honestly and to reality, but in fact what they say or think can be different than their actual actions (LaPiere, 1934). By observing people with these techniques -in which they are not aware of the spectator-, a truthful representation of their actions will be the result.

In my research I rely on the idea how the *Frankfurter Kitchen* was formed and how Bruno Taut looked at running lines through the house. Hereby, important questions are: What is the most logical and fast route through the house? How are spaces related and ordered in a logical way? How can life made easier by the use of architectural tools?

By means of depth interviews and questionnaires addressed to the target group, information can be gained about their lifestyles and behaviour. This information contains wishes related to their house and neighbourhood. Most important is information about their daily routine, which can be completely different than most other target-groups, because of their irregular working hours.

In the questionnaire they give insight in their daily routine on working days, but also on days off. For instance, how are running lines through their current house, when leaving for work in the evening? With this kind of knowledge it is possible to adapt the house to their lifestyle and improve the efficiency of running lines. Design interventions can be for example, a separate room for clothes, so you do not disturb someone sleeping. Or strategically positioning bedroom and living areas, so one can sleep quietly during daytime.

So how does this answer the research question I posted before; *how can a praxeological approach help to find the needs and architectural elements of this specific target group?* The interviews and questionnaires gave insight in the target groups' lifestyles and wishes. Most important are the descriptions of their daily routine and running lines through the house. This is the starting point for the design.

Although large scale observation could be useful input, however, this is out of the scope of my research due to time and cost considerations. Besides that, It should be noted that praxeological research strongly focusses on the target group. However, this is not the only research needed to design a complete building. It does not focus on e.g. the location, architectural experience, materials or housing typologies.

These aspects should be investigated too. The location for instance, what are characteristics of surrounding buildings and the landscape? How does that influence the design? By investigating this, the building will be anchored in the environment and be more meaningful to people.

IV POSITIONING

In my opinion a design should be functional, but at the same time it should feel familiar and like home. The question is; how to give a design a human touch and meaning? For example, this can be done by combining praxeological and historical research. By studying the historical context of a place and use that information in the design, people can feel more connected with it.

In my own research I search for this combination of the practical aspects -such as running lines, cleaning, organisation of spaces and material use- and this human touch. People should feel at home and feel related to their living environment. In my eyes, then, people will also feel more responsible for their environment. By conducting praxeological, environmental and historical research, I hope to address the practical aspects and the human touch.

By asking for their daily routines and running lines, the results will be practical in nature. But when asking about their wishes and lifestyles the results are more personal and the design can become more human.

Research like that of Bruno Taut and Margarete Schütte-Lihotzky is useful in my own research. The idea of studying running lines can be directly applied. The time-motion studies are difficult to adopt, because of time and scope of my research. The questionnaire is an alternative way to get an idea of the activities and time schedule of the target group.

Nowadays the Dutch face a large challenge, due to housing shortages, thousands of new houses must be built in the near future. In the past, large construction developers were in charge, they built for the mass; repetition and standardisation was the result. A diverse group of end-users had to adapt their lifestyles to this prescribed way of living. No account has been taken of the various households and lifestyles among end-users.

By conducting research on these diverse lifestyles and wishes, and building with this knowledge, there will be a more varied housing stock. The question is, if this is the task of project developers or of the people themselves. Why not build your own house and take matters in your own hands? In this way the house is custom-made and fits the residents lifestyle. However, these houses must be future proof as well. For instance, when moving, how can the house serve the needs of the next user? What happens when lifestyles change when people get older? This should be investigated further.

In all cases it is important to have a good idea how people behave and might behave in the future, in order to design a proper and durable house for their lifestyles. Hereby, praxeology can be a useful research method.

Reflecting on the past few years at the faculty of architecture, I noticed how my look on research has been changed. It has become more explicit and clear what I actually do. Initially I thought I could make an estimation of the target's group wishes and needs, just from personal insights and experience. Soon I found out that this was not the case; you have to get involved with real end-users by interviews, discussions or questionnaires. Often unexpected results emerge, things you had not even been thinking about or had found by literature research only.

In my view, architects are often mostly concerned with the appearance of a place or building, but ultimately it is how people use the place. It is a challenge in architecture to bridge this gap and become aware of the real end-user.

In order to deliver a coherent and complete design I found out that you have to conduct several kinds of research. One research method can have the emphasis, but is not sufficient for the whole. In my own research end-users have an important role, in my experience this can provide a starting point and direction within the design process. In addition, material use, location characteristics and housing typologies must be investigated too.

Lastly, research is about using the right tools to find an answer, it is about combining different methodologies at the right moment.

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