

Biases in Behavioural Research

Final assessment Lectures Series Research Methods

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24 januari 2019
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The soon-to-be-architects of today, me included, will be confronted with major challenges during their professional career. Challenges that our predecessors never had to deal with in such a quantity or with such urgency as today. We, the new generation of architects, are expected to find solutions to deal with all these challenges. These challenges are arising not only from climate change, but also for instance from overpopulation and scarcity of resources. Topics that are becoming more and more the number one occupation of architects and arrived on the agenda only since the past decades. The huge role the architect of tomorrow has to take is even more emphasized by the fact that the built environment has a huge deal in most of the coming challenges. And we are its designers, so we can design solutions for these challenges. Common sense or intuition can help with finding a solution, but a good solution mostly needs a good understanding of the underlying problem. Because there are always parts of the problem that you never had to deal with before and do not have enough knowledge of, especially when dealing with the big challenges that lie ahead. Being aware of the biases that you can have about the problem is especially important because this affects the way you look at the problem and the amount of knowledge you think you have about the problem. Doing research, collecting data and gaining knowledge forms the basis for understanding a problem. But how much research is actually done by architects? How well do architects today know the context of their projects? Is the architecture branch innovative enough? These are questions I sometimes ask myself when I see a new project being executed in my neighbourhood. Being a soon-to-be-architect myself I am quite critical on how the practice currently is being practiced. And I think mostly due to the financial crisis the practice became more financial driven instead of driven by ideas about what we imagine the world should look like. If this change was a necessity for surviving the collapse of the constructing branch or a mere shift in the interests of architects does not matter. What matters I think, is that even though you are driven by a particular interest, you still need to know what you are doing, what for, for who and what the consequences are of your activities. By knowing exactly what you are doing you can be more innovative and with that being more original and stand out as architect, something that in this branch is of great significance for surviving the tough competition. Adam Grant an American psychologist says in his TED lecture (Grant, 2016) that people that are original, what he refers to as "Originals", are the innovative people that are able to change the world. Not because they can think of a few good ideas, but because they are not afraid of making mistakes, try a lot and do a lot of research and only release their product when it reaches perfection. Steve Jobs was one of those "Originals" and he became one on the world most innovative people. Jobs himself also advocates in his Apple campaign "Think Different" to be original and think different to be able to change the world. To change the world, you have to come up with really good solutions for big problems, have a good understanding of the problem, have a good understanding of what you know and do not know and be aware of the research methods you can and have to use to gain the knowledge that supplements that what you already know.

What really opened my eyes during the course was the following statement: "Research is not about being right, but a way to increase knowledge." This statement really made me think about the goals of doing research for my graduation project. I know for myself that I am biased about the topic that I am

researching. Mostly because of the amount of attention the problem is given and the many opinions that are publicly discussed in the media these days. Because of my bias on the topic I already imagined a solution for the problem and my research was focussed on finding prove to substantiate my ideas for the solution, even though I did not yet understand the problem in its entirety. But because of the statement that was made during the lectures, I became aware of the fact that this research is not for proving myself right or to try to be right, but that this research is for understanding the topic better and to gain knowledge that will help me to find a good solution. So, my research goal shifted from proving to understanding. Related to this was the statement made by Marike Berkers during her lecture on the topic of praxeology: "By studying the praxis of architecture one can develop an eye for the actual users of a building, and not the imagined ones." This statement is even more related with my own research because I want to find out what influence behaviour can have on architecture and vice versa. Because of this statement I realized that my research really is about studying people's behaviour and not about what I imagine they would behave or should behave.

During the first part of the research for my graduation project I noticed that most of my research was based on preoccupations and biases I had on the topic. I was trying to find proof for my preoccupations in the data I was collecting and had no eye for the bigger picture. During my P1 presentation I was confronted with this. Although I already did a lot of research on the topic, the topic of elderly housing, I managed to overlook a very important part of the topic: The wishes of the user. It was clear for me that this was because I made some assumptions beforehand, about the user I was doing research for, that were not right. Moreover, I did not even conduct a research on this particular topic regarding the wishes of the users because I simply did not know that I did not know what the wishes of the users were, because I assumed that I already knew this. But it turned out I had a wrong bias. I think this is something that happens to a lot of designers; that you simply do not know that you do not know something because you assumed you already knew this. So, my research question for this paper is: "How can you prevent that biases will affect your research?" There are two types of biases that I ran in to during my research: The confirmation bias. (Wikipedia, sd) This is the type of bias that I was confronted with like I discussed above. This bias in general means that you are trying to confirm your beliefs which makes you conduct a one-sided research, and make you easily overlook other topics or possibilities that are also relevant. The other bias is that of a biased interpretation. This bias makes you interpret certain data on a different way than others because you are biased or have certain expectations from the data. For instance, when researching the target group of my graduation project I have to interpret a lot of data like statistics, and I often notice that I interpret the data different than my colleague students do. And that I draw totally different conclusions than I should do.

With my research on the topic of elderly housing I am focussing on the wishes and needs of the target group. Therefore, I need to know who the elderly is and what the demographic trends are, which problems they encounter and what their wishes are. A good insight in the behaviour and motives of the target group is needed to come up with a user-based solution. In the Health studio where I conduct my research, the user and its wishes and needs are seen as the centre and main objective for architectural design. Praxeology is therefore the methodology I use. Praxeology is based on the theoretical framework that is the base for studies about the human behaviour, and rests on the belief that human action is purposeful behaviour. (Dolan, 1976) Praxeology helps to explain human behaviour because it is based on the belief that human behaviour is logical and can therefore be explained by logical deduction. Focussing on undeniable facts that have effect on human behaviour make this possible. It does not imply that human behaviour is predictable, because people have unique ideas and can change these ideas. There are three conditions that make purposeful behaviour possible: there is an unease situation, the person can imagine a situation without unease and the person believes that he can make the change by action. The methodology starts with observations, an observation can be done by looking at the behaviour of people directly or by observing the effects of human behaviour. And by logical deduction you can explain why they act in that way. For instance, in my research I saw in the statistics that elderly people move less when reaching the retirement age of 65, by logical deduction I can tell that this is happening because of the undeniable fact that elderly are less mobile and therefor belief that by staying where they live will prevent an unease situation. For

gathering the data that I need for my research I use two different methods: A Qualitative method and a quantitative method. With the quantitative method the objectives for the research are defined and gives insight in what the important problems/aspects within the topic of elderly housing are. With the qualitative method are the reasons given for why the problems/aspects found with the quantitative method are important and gives insight in what makes these problems occur and what could prevent these problems regarding housing for elderly. Because of the supposition that human behaviour is logical and purposeful, most of my observations are easily and without any doubt explainable and therefore my research will come quite easily to conclusions. But the down side of this method is that biases can easily slip in the process. Because logic is not always based on the truth, therefore I have to be really conscious about my own biases. Generalisation is one of the main heuristics that is used in this methodology, this makes most conclusions also being generalized. To prevent that the research outcome will be too general, I really need a quantitative method to get more specific data, like with close observations from the target group.

The study of human behaviour is becoming more and more important because our society is changing faster and is becoming more individualized. But also because of sustainability reasons we have to make our living environment more efficient. This makes it important to get a good insight in the behaviour of people and their effect on architecture as well as the architecture's effect on people's behaviour and to design our living environment according to the findings from this insight. Behavioural research is mostly empirical research which means that the research is based on empirical evidence, this evidence is gained from observation and experience. (Bill Lammers, sd) The theories that are used in these researches are part of the psychological realm. For behaviour research we need participants to observe, how to treat these participants is an ethical question and must be considered really well. It depends on the type of observations that are conducted to determine which ethical risks can be a threat to the participant or the research. There are basically three types of observational research (Wikipedia, Wikipedia, sd): Covert observational research in which the researcher observes the subject group from a distance and/or without effecting the behaviour of them. The advantage is that you do not need the cooperation of the subjects, but there are some ethical remarks to make. A question like, is the privacy of the subjects not being compromised? Have to be answered. Another type of observational research is overt observational research. In this research the researcher identifies himself to the subjects and explain the purpose of their observations. The problem of this method is that people will adapt their behaviour to reflect the expectations they think the researcher has. The third type of observation is that of participant observation, in this way the researcher participates in what he is observing. This method has no ethical problems nor problems with getting a truthful outcome, but this one is more susceptible to contamination of the researcher. The problems of with these observation techniques also apply to methods like interviewing or doing surveys. Basically, when researching human behaviour, you can risk doing an unethical research but probably will gain truthful data, or you avoid ethical risks and contaminate the data.

When choosing for a more quantitative approach with the use of statistics much of the problems with observational methods can be avoided, but the research outcome will be more generalized. But for getting insight in the bigger picture of the issues that you are researching, statistics are a good method to use. Interpreting the data is therefor really important for drawing the right conclusions. Hans Rosling a Swedish professor of global health and expert in the field of statistics and the interpretation of data became world known because of his TED lecture about an innovative way of showing statistics. He also wrote a book, Factfulness (Rosling, 2018) in which he describes 10 reasons why most people have a wrong idea about the world. He states in his book that our limited frame of reference together with the filtered and outdated facts we obtain via the media give us skewed information about the world. This skewed information is interpreted by us and our intuition what results in a distorted view of the world. Rosling says that this is not our fault but that this is just a natural way we humans process information that comes to us, and that we have to be aware of this. In general, he states, if you want to be right, you have to think the opposite of what first comes to your mind, that is mostly the truth. Like, most people think that it is going bad with most things in the world, but the truth is that it is going better

with most things than we initially think. Basically, we are often fooled by our intuition when it comes to statistics. So, for interpreting lots of data, Rosling states, it is better to just look at the facts as they are and not to try to interpret it by connecting it with your frame of reference like you intuitively do.

The study of human behaviour became more of interest of the architect since the beginning of last century. Design became more user centric and less based on style or status. In particular in architecture this meant that the focus on architecture shifted from style to functionality. The most well-known example of implementing this shift in focus was the modernist movement. With the development of information sharing in the last decades it became easier to gain knowledge about our society and the world at large. Statistics is a tool that is used in all ages and on all continents, it is a basic need for helping to understand a complex thing as demography. This research method is used for more and more purposes and today with the help of statistics we can explain a lot. The only thing that has changed is the way we collect data or show the data. Technology for sensors or the invention of algorithms and the internet make it easier to collect and share data, and software like Gapminder invented by Hans Rosling and Google analytics make it easier to interpret and show the data. Today statistics is a commonly used method, used by both scientists as well as officials and designers, specifically because it is so easy to acquire.

The methods, observations and statistics like discussed above, are good methods for both gathering data and the analysis of the data. I use these methods because they give me two types of data that I can compare and with that I can prevent that much of my own biases influence my findings. I think by using at least these two methods in doing research on the human behaviour, we can get a better knowledge about the needs of our society and specific groups within our society, so that we can create better designs that have more value and that contribute to the innovations within the practice.

We as soon-to-be architects have a lot of problems to tackle, therefore we need to innovate in architecture, but how? Not by trying to be right but to creating more knowledge. And knowledge is derived from research. By knowing the pros and cons of different research approaches and methods and by being aware of the biases you have and with the use of different methods you can prevent your findings from being too one-sided and or wrong.

Sources

- Avemaete, T. (2010). The architect and the public. In T. Avemaete, *The architect and the public*.
- Bill Lammers, P. B. (sd). Opgehaald van <https://uca.edu/psychology/files/2013/08/Ch17-Summary-of-Behavioral-Research.pdf>
- Dolan, E. G. (1976). *The Foundations of Modern Austrian Economics*. New York: New York University Press.
- Grant, A. (2016). The surprising habits of original thinkers. TEDx.
- Koolhaas, R. (1978). *Delirious New York*. New York: The Monacelli Press.
- Polya, G. (1957). How to solve it. In G. Polya, *How to solve it*. New York: Garden City.
- Professor Chris Winch, D. M. (sd). *Methodologies*. Opgehaald van [socscidiss.uk: http://www.socscidiss.bham.ac.uk/methodologies.html](http://www.socscidiss.bham.ac.uk/methodologies.html)
- Rosling, H. (2018, april). Factfulness. Spectrum.
- Wikipedia. (sd). Opgehaald van Wikipedia: https://en.wikipedia.org/wiki/Observational_techniques
- Wikipedia. (sd). *Confirmation bias*. Opgehaald van Wikipedia: https://en.wikipedia.org/wiki/Confirmation_bias