

AR3A160 Lecture Series Research Methods

Self-Assessment on Research Methods

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DESIGN BY PRECEDENT IS DESIGN DONE WELL

I INTRODUCTION

As a bachelor student of architecture at the TU Delft, I believe I was never conscious of the relevance of research-methodological awareness in relation to design practices. In my opinion, choosing several, rather than only one, research methods and being conscious of them, will strongly influence and support design decisions that are going to be made during the process of my graduation. The broad scope of research approaches given during the series of lectures on research methods, have caused me to consciously use them rather than 'just' doing research what I consider to be intuitively. It is specifically interesting that these methods extend into a multidisciplinary field influencing our design approach within the field of Architecture. These methods can be used as tools to improve my thesis research, resulting into an improvement of my final design. The lecture series have given me the opportunity to not only blindly follow the approaches given by my studio, but rather search methods that will give further deepening, strengthening and backing to and of my topic.

I will be doing my graduation studio in the chair of Architecture and Dwelling. My topic is about a new expansion plan for the municipality of Amsterdam in which a conversion will be made of the old western harbors into a new residential area. The main goal is to design an affordable residential building in the so-called Haven-Stad of Amsterdam. For my graduation topic I will focus particularly on families as a group that is leaving the city because the supply and demand for housing do not match. Previous research has shown that the presence of families and children are beneficial for cities.¹ Media reports on societal and governmental unrest about the increased amount of vacating families in the cities. Analysis of these reports show that traditional housing is mostly unavailable, and unaffordable if available.² This problem is not necessarily unique for Amsterdam, most capital cities cope with increasing prices and decreasing availability.³ Although, unique to Amsterdam, is the amount of families willing to live in apartment buildings. They prioritize a house with a garden and a parking spot in front. As the city of Amsterdam is limited in its range of land available for building, it is impossible to meet the demand by building solely ground level single-family dwellings. The beforementioned problem statement has brought me to my research question: how can we design the proper housing and outdoor space to keep families in the city?

II RESEARCH-METHODOLOGICAL DISCUSSION

For my research topic it is important to combine two closely linked types of research methods to form guidelines for my design. A multi-case study will allow me to analyze the conditions under which families will be willing to live in other types of dwellings than those of typical single-family ground level dwellings. These conditions are of economic, sociological, environmental, ecological and political nature but also of measurable sizes and shapes. The word 'type' interlinks this research method with the second research method; a typological research into buildings, streets and accessibility. This

¹ Jolanda Keesom, *Nestelen in de Stad: Apartementen voor Gezinnen* (Amsterdam, BNA Onderzoek, 2013) 10-13

² Ibid, 14

³ Planbureau voor de Leefomgeving, *De Stad: Magneet, Roltrap en Sons* (Den Haag, PBL, 2015), 118

research should provide precedents on which theories and conclusions could be drawn to further aid and guide in the design. This combined strategy of mixed methods research, in a so-called two-phase research, and is what Jennifer Greene has argued to aid in research fields that are highly practical and creative such as architecture.⁴

One of the pioneers in case-study research is Robert K. Yin. In his book: *Case Study Research*, he states that case-study research is not merely the study of a simple phenomenon, rather the phenomenon in its surrounding and its tentacles to all other facets with which it continuously intersects.⁵ He also states that the amount of cases to investigate should round up to the amount that generates conclusions that are convincing enough to generalize. The subsequent conclusions should then be viewed from several viewpoints and angles, especially when the boundaries between the case studied and the context are not clear. This means that case study research is especially useful when you want the context to be taken into account. Whereas with an experiment for example, one deliberately takes the phenomenon and isolates it from its context to bring forth pure data and results.⁶ Geoff Easton made a step-by-step approach on case studies in his book: *Learning from Case Studies*. It is meant to provide experience in problem solving in simulated situations. This approach is effective within the fields of for example business, law and economics.⁷ However, the challenge for case study research within architecture lies with the range that is often considered to be case study research in general. As Sarvimaeki points out, rightfully so, case study methodology in architecture is not as finely defined as it is in the education of medicine, law or business.⁸ Case study methodology is not a clear-cut methodology that can be copied and implemented as in political studies or medicinal studies. In architecture, most skepticism towards any research methodology stems from the difficulties of implementing strategic and necessary elements of the methodology, in order to collect data that is useful merely from a pure architectural case study.⁹ This problem stems from the fact that knowledge gathering, intended for implementing solutions or the creation of building performances and such, cannot be merely analyzed from the viewpoint of an architect and its sole research background. Data analyzed from an architectural case study must be viewed from diverse disciplines such as sociology, economics and ecology as a design of any sorts contains elements from these disciplines. When researching case study methodology in architecture, the link with typological research is imminent and historically of importance for the development of the case study methodology in architecture specifically.

III RESEARCH-METHODOLOGICAL REFLECTION

Quatremère de Quincy was one of the first to develop an explicit formulation of the idea of type.¹⁰ Before Quatremère, architecture was merely a metaphor in language. By conceptualizing the structure of architecture, he built a framework which laid the foundation for architecture as a function that can be examined and explored. He made the comparison between type and model. He stated that: *“the model in the practical execution of art is an object that must be repeated as such; the type, on the other hand, is a concept to which everyone can conceive works that do not necessarily have to resemble each other. Everything is accurate and given in the model; everything is more or less vague in the type.”*¹¹ This refers to the ability to duplicate a model while a type is a concept that you can alter. Rather, the reference to vagueness should be replaced by a reference to adaptability. Quatremère considers the concept of type to form a link to the past, metaphorically this means that it was the first time that people started to see architecture as a form that allowed for analysis and further

⁴ Jenifer Green, *Is Mixed Methods Social Inquiry a Distinctive Methodology?*, (Illinois, University of Illinois, 2008), 13

⁵ Robert K. Yin, *Case Study Research: Design and Methods*, 4th ed. (Thousand Oaks, CA: Sage, 2009), 8

⁶ Ibid, p 12

⁷ Geoff Easton, *Learning from Case Studies*, 2nd ed. (Hemel Hempstead, Prentice International Group, UK, 1992), 1-14

⁸ Marja Sarvimaeki, *A Case Study on Case Studies*. (Charlotte: North Carolina University, 2013), 338

⁹ Ibid, 340

¹⁰ Rafael Moneo, *Oppositions: On Typology* (Massachusetts, MIT Press, 1978), 28

¹¹ J.H. Luiten, *Het typologisch gereedschap : een verkennende studie omtrent typologie en omtrent de aanpak van typologisch onderzoek*. (Eindhoven, Herz. uitg redactie, 1987), 13

development. This type is deduced from logic, the shape of a chair is designed by looking at the back of a man, logic in combination with reason and use defines the type and is thus the reason behind architecture. By doing this, the type that is reduced remains constant throughout history and cannot be refuted.¹²

Contrary to Quatremère, Jean Nicholas Louis Durand proposed a more pragmatic approach, by reducing typology to merely a classification of elements done through function. This is a more formal and structural approach that has not clear links to historical or traditional classifications. In his renowned work; 'Recueil et parallele des edifices de tout genre' he laid the foundations for this formal design methodology in which the combination of architectural elements is formed without an underlying idea, this work is considered to be an atlas of typological architecture. He considers these elements such as; pillars, columns and foundations for example, to be constructed and considered by the usage of materials and its function.¹³ He opposes Quatremère indirectly by stating that the word 'type' is not of significant use, rather, 'genre' is leading in classifying buildings. Their main contradiction lies in the fact that Quatremère considers the historical context of the elements, while Durand considers the usage, or 'program' of the elements. This creates the possibility of sampling squares, markets and churches because of their program rather than their type. Later on, in the twentieth century, this line of thought was adopted more widely.¹⁴ According to Moneo, this idea of type in architectural academic theory was increasingly more common as architects had to deal with a set of rules and restrictions rather than being a creator who could act with complete freedom on the object. He explains this by taking examples of Mies van der Rohe and Le Corbusier, who took complete liberty in their design by looking at a building taking in space whose function can be defined later on. Making the building adaptable and more timeless.¹⁵

Nowadays it is not a discussion whether either explanation is correct, the discussion is about the outcome of both of them. Christ and Gantenbein state that architecture is neither a result of the autonomous decision-making process of the designer or the passive adherence to a list of demands. It is a conflict between the personal attitude of the designer who involves its own approach towards societal, economical, technological etc. preferences and incorporates this.¹⁶ It is now more than ever important to reinvent practices and question the standards to create architectural responses. This also shows that there is a need for research in architecture, as the personal preferences need to be placed in historical, traditional and contemporary context. Christ and Gantenbein confirm what Quatremère says, everything that is created now has been created before, to put it shortly; nothing is newly invented, and everything has a predecessor.¹⁷ Architecture is according to them, a creative response to a list of must do's and must haves of a client but is simultaneously a product of the designers' preferences and all these sociological, technological, ecological etc. factors. The outcome of this is a duplicable concept that is generalizable for the research problem that was investigated. This is what they call typology transfer. With their research method they believe that they can research new forms of living, where the usages of buildings can be mixed and interchanged and where cities can be built containing denser public spaces. The main idea behind it is that it can help in creating and designing duplicable types of buildings that are universal solutions for problems that are faced throughout the world.

As my research problem states; how can we design the proper housing and outdoor space to keep families in the city? This need to incorporate city living with adequate housing. They dispute the idea, in contrast to what Durand states, that there is a typological and architectural model for the city of today. They state that the concept of 'type' is a matter of the principle and not its elaboration in any specific case. A principle is universal per se, hence the type is independent of a specific place or the

¹² Rafael Moneo, *Oppositions: On Typology* (Massachusetts, MIT Press, 1978), 28

¹³ Ibid, 29

¹⁴ Rafael Moneo, (1978), 29-31

¹⁵ Ibid, 32

¹⁶ Ibid, 28

¹⁷ Emanuel Christ & Christoph Gantenbein, *Typology Transfer-Towards an Urban Architecture* (Zurich, ETH, 2011), 1

city where it originated.¹⁸ This typology transfer is a more implementable form of typology research for my research problem, because it creates the opportunity to take what has been done before, improve this and implement it in a new situation.

IV POSITIONING

The lecture by Robert Alexander Gorny on Typology made me question what I am really studying, when I am studying a dwelling type, building type, type of access etcetera. Rather than conducting an actual case study or typological study, where conclusions and assumptions could meet. Intuitively, I looked at previous typologies and took predecessors into account and scrutiny. Even though I feel that designing without doing extensive research can work, it needs backing by research and it needs accountability, which can only be done by research. As Quatremère has stated, which I agree with, everything is in the end based on something that has been done before. As people are the product of all their experiences and the history of their being, one can never merely do something without it being defined by that.

Durand's work which can be considered as the atlas of typological architecture, serves as a guide to the elements of architecture. Where Durand mentions the elements that you can add or delete in a design, the mere taking apart and constructing, and therefore separately considering, the components lead to a design. But for my research it is not only important to consider the elements separately but to also look at the building type in its entirety. In other words, to look at a building type or access type in which separate elements can be changed without changing the essence of the type. This is what typological research allows you to do. And to then translate it into a universal, generalized design that can be implemented anywhere. By studying cases and the typology transfer, insight can be gathered on the basis of precedents, the answers to the question: what has been done before, lead to solutions for my own design.

One of the main issues with architectural research that returns in many peer reviewed research essays, and therefor also in the literary review that I have conducted, is the predominance of the lack of precise definitions or, in my opinion the confusing and imprecise usage of those. Both case study design, whether it be multiple case study or single case study, and the study into typologies require not only architectural knowledge derived from both quantitative and qualitative research, but also knowledge deducted from other research fields that may or may not be adamantly be present in the architect conducting the research or the one using the research. The limits of an architect are as much present as those of an econometric researcher conducting research on a societal issue. But whereas the econometric researcher can limit itself to the conclusions of a paper that are derived from a conclusive research methodology structured according to rules, the architect has to translate the results and implement them into a design that he can then account for. To then be able to conduct adequate research that is tested, implemented and cannot be refuted scientifically, is objective and leading in its results, seems nearly impossible, and to my opinion is unattainable. This is not to say that research in architecture is unnecessary, rather, research is essential for any architectural achievement of the sorts.

The question that remains after conducting the research into research methodology in architecture are the same as those we started out with. The frontiers, boundaries, rules and limits of any type of research within the field of architecture are not fully crystallized, and for those of us studying architecture in university it is a recurring question: what research is, and what is enough research, and how can we account for that what we create. In other words; how can I account for my dwelling designed for families who would've otherwise left the city?

¹⁸ Emanuel Christ & Christoph Gantenbein, (2011), 11-16

Bibliography

Easton Geoff. *Learning from Case Studies, 2nd ed.* Hemel Hempstead, Prentice International Group, UK, 1992.

Emanuel Christ & Christoph Gantenbein. *Typology Transfer-Towards an Urban Architecture.* Zurich, ETH, 2011.

Green Jenifer. *Is Mixed Methods Social Inquiry a Distinctive Methodology?* Illinois, University of Illinois, 2008.

Keesom Jolanda. *Nestelen in de Stad: Apartementen voor Gezinnen.* Amsterdam, BNA Onderzoek, 2013.

Luiten, J.H.. *Het typologisch gereedschap : een verkennende studie omtrent typologie en omtrent de aanpak van typologisch onderzoek.* Eindhoven, Herz. uitg redactie, 1987.

Moneo Rafael. *Oppositions: On Typology.* Massachusetts, MIT Press, 1978.

Planbureau voor de Leefomgeving. *De Stad: Magneet, Roltrap en Sons.* Den Haag, PBL, 2015.

Sarvimaeki Marja. *A Case Study on Case Studies.* Charlotte: North Carolina University, 2013.

Yin Robert K.. *Case Study Research: Design and Methods, 4th ed.* Thousand Oaks, CA: Sage, 2009.