Speculative scenarios in an academic context

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Date	**24-01-2019**
Course	**Research Methods**
Studio	**Complex Projects**

I INTRODUCTION

In 2018, the construction industry contributed to 9% of the GDP of Europe. Additionally, buildings account for 40% of European energy consumption, 35% of greenhouse emissions and between 25 and 30% of all waste produced.[1] A large part of this enormous societal investment is designed or directed by architects. With this comes the responsibility to make sure that the solutions architects propose make use of the available economic, material and energetic resources in a way that finds an optimum between efficiency and societal improvements. The complexity of challenges that designers face is large and typically makes finding such an optimal solution practically impossible, as described by Horst Rittel (1973) and later Richard Buchanan (1992).[2] They state that these are wicked problems, which are ill-formulated, contain confusing information and many stakeholders with conflicting values and confusing ramifications.

Given the immense responsibility for societal resources and the problematic solution-finding process of the design process, it is key for designers to understand and continuously improve how they perform their design and research. Additionally, they do not only need to be capable of defending their methods, but also of changing or adapting them when the situation demands it, which requires a great deal of research-methodological awareness and professional versatility in the fields of architecture and design. A very large body of literature on research and design methods is available, guiding designers and researchers in this difficult process, although a critical positioning is required.

Following the lectures on design and research has, as well as reading through for instance the collection of conversations between Rory Hyde and various architects and designers,[3] helped me a great deal in learning about the methodological skillset that is required from architects and for conducting research in the field of architecture. It gives a vision not only of the demanded versatility but also of the way the role of the architect may develop in the future: as a synthesising professional generalist that can unite specialists and stakeholders behind a convincing set of ideas, through a very rich set of skills and methods. This idea has greatly helped me in my design studio, where I was previously struggling in envisioning the role architecture would have in the future.

The Complex Projects approach looks at how large urban interventions can influence the future city. Students have significant freedom in choosing the subject and methods of research and design, but all presentation materials are strictly defined, making it possible to compare and relate to projects that are completely different in ambition, scale or methodology. More specifically, I need to look into the city centre of Amsterdam in 2100.[4] I started looking at automation and the circular economy, which led to a research into future waste treatment in inner cities and the development of a future scenario. From this the following research question emerged: How will waste treatment be incorporated in the urban fabric of the city centre of Amsterdam in 2100? With the results from this research I will then be able to make a design for an urban waste facility, showcasing this possible future in its scenario.

II RESEARCH-METHODOLOGICAL DISCUSSION

From a scientific perspective the assignment and research question make it rather difficult if not impossible to arrive at an unambiguous answer about the future. The projected year of 2100 means that, if the research and design project are not to remain vague and undefined, many choices in establishing a future scenario to serve as context for the design will have to be made. To make this scenario a valuable and usable addition to architectural discourse requires clear methodological argumentation, specifically of the analysis of past and present that determines why certain choices and assumptions are made.

In the Complex Projects studio, the scenario is used as a tool to investigate the development of typologies and their impact on the city. For this project the research and design are looking at an urban recycling facility in 2100. Based on a literature review and comments by experts it is established that three trends are driving current-day changes to this building type, namely technological advances such as automation, the efforts to establish a more circular economy, and new ideas for integrating waste treatment into the urban context (such as including public program and mitigating smell, noise and traffic). With these three themes in mind, research can be done to understand what drives these trends and how they manifest in the past and in the present. This is then extrapolated to establish a scenario for 2100, for which ultimately a design is made.

The research into these three trends and their past and present manifestation is done through literature review and typological case studies. Here a short motivation for the literature that will be used is given for each of the three identified trends and the general concept of using scenario-based and speculative research.
For the integration of waste treatment into the urban context primarily case studies are used, as well as architectural theory, for which Jencks' and Kropf's Theories and Manifestoes of Contemporary Architecture is used as a starting point.[17] For the case studies programmatic and conceptual analysis, interviews, site visits and archive research are conducted. Case studies will not be limited to waste facilities but also include other industrial, infrastructural and logistical buildings and a study of public program that exists in combination with such facilities. These research methods also come back in the historical/narrational, simulation and logical strategies as defined by Linda N. Groat and David Wang.[5]

Scientific literature exists on the subject of speculative research in general and its relation to design more specifically, and a lot of it has been written fairly recently.[8-14] To position this in the larger field of research methodology the book Architectural Research Methods by Linda N. Groat and David Wang (2013) is used, as well as Research Methods for Architects by Ray Lucas (2015).[5 & 6] Both of them offer very insightful information on the relation between research and design as well as different research methods and strategies.
Rory Hyde (2012), in his book Future Practice, and Nishat Awan, Tatjana Schneier and Jeremy Till (2011), in their book Spatial Agency, all write about the many ways in which architects and related professions operate and develop over time, in the past and in the future. Their ideas on the future development of architecture facing automation and the emergence of new, competing specialists, combined with their ideas on how architecture can deal with an uncertain and unpredictable future, can be very useful when talking about the relation between architecture and technological progress.[3 & 7] Works by French philosophers Foucault (Reviewed by P. Hirst, 1993) and Simondon (Original 1999, translated by M. Combes, 2013) are used for more theoretical visions on the relation between architectural discourse and dealing with technological change (specifically automation).[13, 14]

On the topic of circularity and waste management governmental publications are used that describe current practices, challenges and ambitions by the municipality of Amsterdam, the Netherlands, the EU and other international initiatives.[18, 20, 21, 22] Additionally, A Holistic Sustainability Framework for Waste Management in European Cities, written by A. Wandl, D. Tonini, S.E. Taelman and J. Dewulf (2018) is used to understand how sustainability for waste treatment should be assessed within the context of a larger society and what problems it needs to address (for instance not only regarding climate and resources, but also economical, social and ecological sustainability).[19]

III RESEARCH-METHODOLOGICAL REFLECTION

First, a brief historic overview of the development of scenario-based thinking is needed. Then the recent efforts made to establish speculation as a research method will be identified. Finally my own approach will be explained in relation to these developments.

Aristotle already stated that the nature of art is to show how things could be, not how they are. This gives us the possibility to think of scenarios without having to realise them.[5] We can envision a city without the expense of building it. As such, many used speculation as a tool to discuss a desired or undesired future: famously the utopia and the dystopia, for which Dunne and Raby show many historical and contemporary examples.8 The rational proposals for society during the enlightenment and modernism are good examples of this, but they have also been criticised for neglecting existing social, economic or cultural realities. Instead, many people held the positivist belief that given all the empirical facts, a perfect system was achievable.[5]

With the rise of postmodernism the use of speculative research and design changed as well, becoming more aware of the shortcomings of the previous ideas and more attentive to the complex relationships and realities that shape the urban environment. Foucault describes how objects are a form of discourse and can make statements, exert power and establish their own systems of knowledge, even if the designer did not intend it.[13] Robin Evans also states that imagination is formed by past encounters, and how your perception of what you encounter is simultaneously altered by your imagination.[12] Simondon (1999) adds to this that we have the tendency to extrapolate and impose our ethics, considering them as universal, even though he describes these ethics as a mere fabrication of that what resonates and amplifies our relations to our personal world.[14] Awan, Schneier and Till argue that even though modernists where naïve in their pursuit of social utopias, societal structures and political goals can be addressed through spatial actions: their book is filled with examples that do exactly that.[7] These case studies do show what is possible, but it is difficult to generalise them since they are often exceptional cases. As such, when looking at larger trends, it is very important to be aware of the extent to which one subject or model is representative for a larger type. Additionally, it suggests that it is very difficult for humans to think of a future truly different to our personal life, as we have been formed by the relationship to our surroundings, and that cherry-picking case studies to prove a point you already believe is problematic if not supported by more theory and research.

In this project generalisations are never based on case studies alone, unless combined with academic writing or theory. Case studies are used as examples, clarifications or exceptions, and they are put in their appropriate context, preferably using ones that are in a comparable location and social context to the scenario that is being developed.

Even today, the methods behind speculative scenarios as a research method are still being defined (the following all started after 2010). Wilkie, Savransky and Rosengarten argue that speculation can be a valid research method, although they are still cautious in establishing guidelines. They note that specifically in the sectors of governance, insurance, health, philosophy and financial institutions speculative research is very promising, praising how speculation has been used to mobilise society by architects in the past.9 Goldsmiths College has hosted workshops for researchers to discuss how to apply speculative research methods in the scientific field.11 Groat and Wang include the strategy of simulation. They state that even though we cannot predict the future we can learn a lot through the patterns of behaviour and thought that humans would have encountering these scenarios.5 Ray Lucas also states research can be conducted by producing works that provoke a response to test ideas, but warns of the limited value of this research if it is not put in an appropriate intellectual context.6 What all these approaches have in common is that they start by exactly determining what it is they are looking for, how they will look for it and what the goal of the research is: not just crucial steps for researching in general, but also for making a plausible scenario that can add to contemporary discourse.

The results of the research are not intended as a prediction or as a universal truth, but rather to encourage new ways of looking at the problem of urban waste and to learn about the reaction people have to the proposals. Liam Young describes how using fictional yet believable futures allows projects to gain a critical edge.3 Speculation in design and research is not about proving the future, but about anticipation and prototyping the developments that can shape it. As such, understanding the reaction of the public on the eventual design project becomes almost as important as the analysis that the scenario is build upon, which is why the results are exhibited and discussed both at the TU Delft and at the AMS institute. With this, the methodological apparatus of this project fits into the postmodern and more recent developments, rather than opting for a modernist/positivist view on scientific endeavours and resulting predictions of the future.

IV POSITIONING

Even though the scenarios we come up with will never be completely accurate, they can be scientifically valuable and plausible by combining case studies (with caution for over-generalisation and cherry-picking through proper contextualisation) looking at the historical development of typologies, academic writing and (institutional and academic) documentation of current challenges and ambitions. Here, my position is explained towards the Research Methods Lectures and the existing literature, followed by the conclusion on how scenario-development can be used as a research method in my thesis project.

In the Research Methods lecture by J. Mejia Hernandez, he stated that science always needs to be falsifiable.[15] This is also true for research using scenarios. On the one hand, the scenario can be disproven simply by the passing of time. On the other hand, the scenario can be intended as a tool to research the discussion and reaction it provokes, which, if properly set up, can also lead to results that can be replicated or are falsifiable.6 Here, the lecture by Klaske Havik on spatial narratives is worth referring to, in particular because of her emphasis on the narrative, imagination and the real-world implications it can have. This fits in with the earlier writings by for instance Foucault, and the many examples of speculative research and design mentioned by Hyde and Awan, Schneier and Till, as well as Dunne and Raby: the scenario does not have to become true to be effective, since the goal in this case is to support an ongoing architectural discussion.

Finally, the lecture by Robert A. Gorny on typologies is interesting.[16] In that lecture, Gorny asked how and why typologies change over time and if the current system of knowledge/classification is in theory replaceable. As the French philosopher Foucault stated, systems of knowledge and its related discourse is deeply embedded in our society and its actors and objects, making it virtually impossible to think outside of these systems.[13] With that in mind, made relevant by my thesis research on developments in the typology of waste facilities, I would argue that the introduction of a new system of knowledge regarding typologies - even though it could be valid - can only take place if the constraints imposed by our society make it possible. As such, a process of gradual evolution is easier to argue for than an abrupt revolution in the way we think, providing a starting point for speculative research in the field of architectural typologies: by looking at changes that are occuring in discourse and knowledge systems already occurring today, and seeing how they might influence each other. For a future scenario, this means that a radical change compared to now is plausible, but only if coherent and if the evolution from the present day is understood.

Compared to the research strategies methods identified by Groat and Wang,[5] the methods that will be used are somewhat somewhat undefined. Because of this the methodological concerns that Groat and Wang, Lucas and also Wilkie, Savransky and Rosengarten identify need to be addressed.[9] Setting up a speculative research proj-

ect and positioning it in the methodological field can support the current effort to understand how various methods address the current concerns regarding speculative research.

This thesis project will look at three major trends that have the potential to change architectural typologies, by combining literature and case studies. Then a design project will follow, establishing a narrative and an object of discourse. Finally the project will be exhibited, compared and discussed, the results from which will be documented.6 This comparison becomes possible because all Complex Projects results are set in the same scenario and the methods of representation are exactly the same.

It needs to be noted, however, that time constraints for graduating students mean that the rigour of the scientific research is limited because of the large and ambitious scope of the complex projects studio. Not all assumptions for the future scenario can be provided with a proper academic background. As such, it is crucial to make it very clear what assumptions are made to contextualise and enable a later design and what is actually based on methodologically sound research: in this case, the focus of research is on the three identified trends that can potentially change architectural typologies, which makes it possible to answer the research question. The actual urban context for the design proposal will be based on choices and assumptions that have a significantly less scientific backing and is to some extent made up on the spot; this is not a problem though, since the discursive quality of the design lies primarily in the typological developments and the discussion this creates, which is supported by more established research methods.

Conclusion

Establishing a scenario requires careful analysis of the past and present, an understanding that the results are not the truth but merely a scenario, and a clear idea of how this research can be used in a valuable way. We don't have laws for history, because they would also predict the future. Instead, we can shape our own future by creating scenarios, discussing them, learning from them, and adjusting our present-day actions in accordance. The architect, although not alone in that regard, is well positioned in society to take on the role of synthesising and communicating these ideas, mobilising society behind visionary concepts and navigating between the various fields of experts. In this thesis project, this will happen through an initial research into the development of a typologies through literature and related case studies, followed up by a design project to imagine the way this will change city life, and finalised by a public debate and exhibition combined with comparable research projects.

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