Reflection P4

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The relationship between research and design.
For the research part of my graduation project, I used the set up of an experiment to measure emotional and behavioural responses of participants in a certain environment. The six environments I tested for this experiment were all situated at the Faculty of Architecture in Delft and the participants were students of this faculty. The goal of doing this research was to observe if various personalities will also perceive a specific environment differently. After analysing the results of the experiment, I established a list containing design input that can be implemented in further design.

Since the Faculty of Architecture was the case-study of this research, the proposed activities to the participants were all related to the acadamical design process. The outcome of this research showed me in what kind of environments students would like to undertake these activities. Subsequently, I simplified these activities into a gradation of interaction, which served as a guiding line throughout the design. Students will be able to build their won workspace inside this gradation of spaces, which follows the design proces of their personal preferences. These personal preferences will partly depend on the arousal-seeking tendency of the person (introvert-extravert) and which elements stimulate creativity and/or focus of the student concerning.

Since the design process was the focus area during the research, this led to the idea to develop an interdisciplinary design school at the univeristy campus, during the design phase of my graduation project.

The relationship between my graduation project and the master Architecture.
The first link between my graduation project and the master Architecture is quite clear. The activities undertook by students of this master functioned as a guiding theme for the development of my design. This new building will be centered around the academic design process. Not only the design process of Architecture students, but for all kinds of design projects of students of the TU Delft. The role of the architect in practice is getting more multidisciplinary, so in my opinion this collaboration between various disciplines should already be stimulated during the bachelor and/or master education of studies at the TU Delft. At this moment, the various faculties are quite closed entitities (especcially the Faculty of Architecture) and do not really encourage to find collaboration elsewhere at the campus.

Secondly, I started to realise that the relation between the built environment and the the way the human brain perceives this environment has been undervalued in the curriculum of the track Architecture. Since I experienced a brain injury, I started to perceive architecture differently. Considering my increased sensibility to lights and sounds, the interior of buildings could really have an overwhelming appearance to me. This aroused my interest for the brain and especcially in relation to our built environment. I think if students of the master Architecture learn more about how our brain perceives a specific environment, and how this perception can be different for various personalities, we can create a much richer built environment. Bridging the gap between architecture and the perception of the human mind means creating spaces that answer the needs of various users more closely.

Research method and approach.
The goal of my research was to analyse how our brain perceives our environments and how this perception can be influenced by the perceiver's personality. This part consists of a literature study and an experiment. For the first part, existing neuroscientic and architectual research related to the perception and unfluence of the built environment is being studied.

The second part, the field research, includes an experiments which takes several study environmets at the Faculty of Architecture as a case study. The experiment shows small videos of these environments, consisting of several images accompanied by auditity background noises related to that environment. Subsequently, various descriptions of feelings will be proposed to the examiners to measure their primary emotional responses, defined in terms of the three basic dimensions *pleasure, arousal* and *dominance*. Next, students will be presented statements related to their behavioural responses, e.g. if students are willing to undertake certain activities in the environment concerning. These activities are related to the *design process in creative, academic environments*. The experiment ends with several questions/statements related to the examiner's personality.
The results (the measured emotional responses, behavioural respondes and personalities) will be compared, to observe any relations between those three variables.

The relationshop between my graduation project and the wider social, professional and scientific framework.
We can all relate to the experience of wanting to shut of all the environmental stimuli around us, as our brain is overwhelmed and overstimulated by it all. Our surrounding environments can be improved if architects and designers learn more about how multi-sensory stimuli can enrich our perception of space, and when these triggers can take a back seat. Hence, we should strive for a well-balanced design regarding sensory stimuli, instead of creating overwhelming environments that are unnecessarily stressing ourselves.

A lot of research has been done on the human brain, and how our brain is perceiving the environment. Architects however are not always aware of the fact that buildings can affect behaviour and wellbeing of its users, and especcially not how and why this happens. The goal of my research was not to answer this very broad and complex question, but to make architects and designers more aware that creating spaces has certain effects on mental health of perceivers. And more importantly, that these effects can be different for each person. A design for a building should serve every user, instead of designing for the average person. Architects should take into account that every individual perceives a space differently and reacts differently to environmental stimuli. They should implement this varying demand for environmental stimuli in the building/environment, based on an individual's needs. A stimulating space is an environment that stimulates a person's way of working, thinking and being, whether it is stimulated by internal or external factors.

Concerning the design, I think its relevance to the wider context is quite straight-forward. Like mentioned before, the role of the architect is getting more multidisciplinary, but the way students are educated at our faculty is falling behind this multidisciplinary approach. My design for a design school at the campus will contribute to this collaboration. Besides that, it will show how we can design for every user, instead of for the average one, by offering a gradation of spaces, based on the order of interaction with the environment and the degree of environmental stimuli included.

Ethical issues and dilemmas encountered.
Environmntal psychology is very complex and hard to have a graps on. There are probably too many variables involved that have an influence on the perception of a space. It is therefore very hard to reconstruct reality in the form of an interactive experiment, which I established for condusting research. It is merely impossible to set up an accurate representation of reality, although I tried to come close. Therefore, It must be said that it is quite difficult to analyse the responses of the survey and to draw solid conclusions from them. However, there are some

interesting findings and relations to observe from the results. These findings could serve as interesting guiding points in further research. It provides us more clarification in which factors we should take into account in future research, and which not.

For the design part, my focus was to not limit myself to conventional elements such as walls, floors, doors and furniture. I wanted to create an environment that offers a gradation of activities, ordered from low up to high interaction with the environment or other people. Creating a gradation means also creating softer boundaries between various spaces, instead of organising them as closed entities. The appearance of a mountain landscape served as a reference for my design to be able to answer to this gradation issue. During the research phase I experienced that it was very hard to move away from these conventional elements mentioned before. We as architecture students are so used to develop buildings by using a toolbox that contains these conventional components. That makes it merely impossible to create a building that is not using them, but it still able to be realised in practice. Although I tried to substantiate myself from these conventions, I still believe there is much more to achieve concerning my design, on every scale.