

AS A DESIGNER:

I'M AN AMATEUR

I'M AN EXPERT

Operating on the fluid boundaries
of the design profession

Annemarie Piscaer

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KEY WORDS

Ecology
Wicked Problem
Changing Role of the Designer
Transdisciplinarity
City Lab

Amateur	-	Professional
Unlearning	-	Learning
Narrative -		Academic
Micro	-	Macro

ABSTRACT

Living in the Anthropocene, we are facing climate change and global inequality. These ecological issues require inclusive transdisciplinary cooperation. A city lab provides a 'safe' ground for experimentation and development of new knowledge, where all participants are the experts and amateurs at the same time. City labs are recent phenomena where 'the city' is used as a 'canvas of reality' for cooperation (between various experts, designers, and locals). Designers take on different roles in these transdisciplinary design practices and have an essential function within these newly built lab settings.

The emerging fluid boundaries create a potential for the urgently needed new knowledge in regard to ecological issues, provided that it bears in mind a critical framework. This is essential otherwise the fluid boundaries will hollow the professional standard.

The response of design education is urgent, as it should implement an ecological literacy into the curricula, as well as a critical framework that allows future designers to critically operate within the fluid boundaries of the profession and be an expert as well as a Pro-Am. I used the pedagogical strategy 'learning to unlearn' to create a critical framework, and developed this into the educational project GO TO THE MOON AND BACK. In order to understand the consequences of 'learning to unlearn' I tested the workshop in different design academies.

GO TO THE MOON AND BACK takes design students in an imaginary trip to the moon. The moon provides a canvas to deconstruct embedded professional knowledge and routines, because the elements that we take for granted on earth are so different on the moon (gravity, time, oxygen, life, etc.), which makes it possible to completely deconstruct these embedded and fixed notions. The moon also allows us to reflect back on earth, therefore reconnecting to reality and making it possible to critically examine the elements that shape the professional context, like values, positions, scales, time, and perspectives. The workshop has ecological awareness in its DNA.

PREFACE DUST

Starting this thesis with DUST is inevitable.

I'm I intrigued by dust as a material, but also by dust as a metaphor. Dust embodies both the material as well as the non-material. Dust provides me with a narrative.

1) "From dust to dust". Everything is created from dust and will return to dust. We are created from the same particles as all the other elements. Everything is connected: past, present, future. I am dust.

2) One particle can't make a huge impact in change, however a huge dust cloud can! In order to change something, we need to cooperate.

Cooperation in a dust cloud is a dynamic process, without one ruler. It's an organic responsive system. Is this an inspiration for finding new modes of cooperation?

3) Dust destroys and disrupts; it annoys. Dust can destroy ecosystems, but at the same time has the potential of new life because of the microbes that are attached to it. So after the dust has destroyed the old system, it also gives life to a new system. Is this the power of design? Can design critically question and disrupt a system but at the same time have the potential of creating an alternative?

4) The dust in a cloud is a collective made up of a lot of different materials (sand, carbon, salt). This diversity creates its essence. Is design a monoculture or does it potentially have a wide variety, as well?



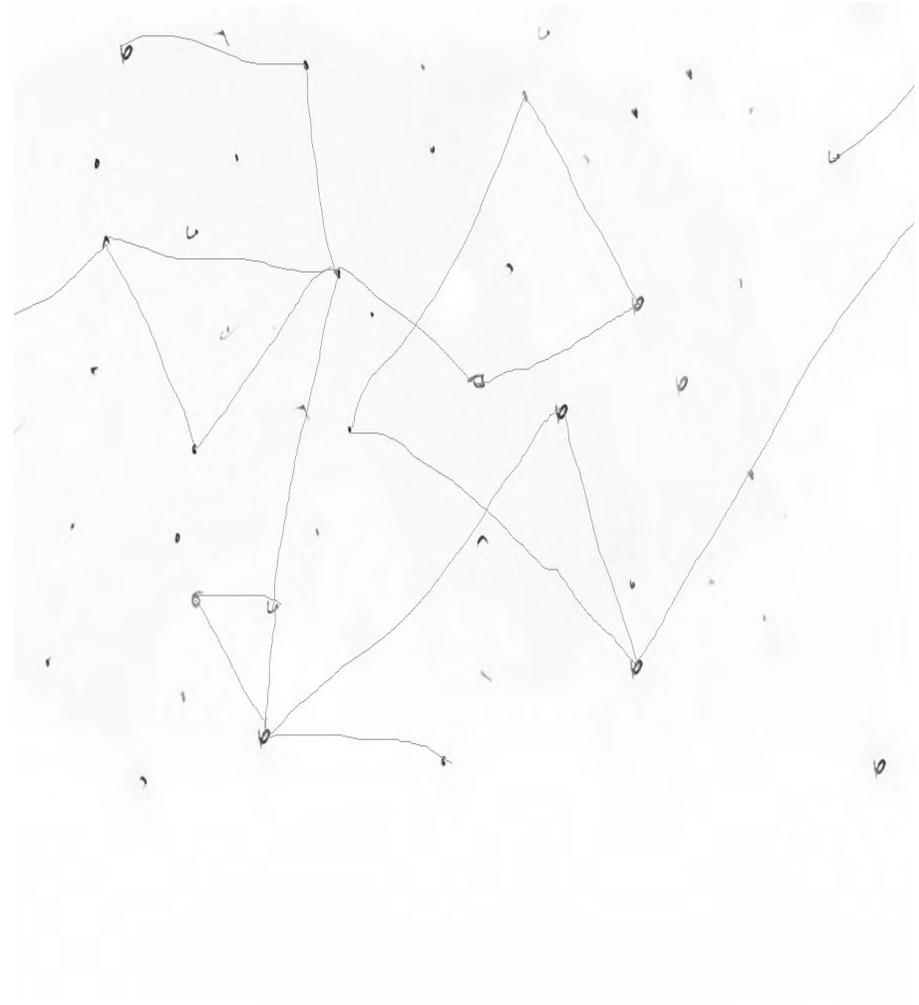
Dust cloud; Drawing Annemarie Piscaer

5) Over a period of time, a cloud of dust loses a lot of particles and gains new ones. It will have changed in shape due to the currents in the wind and moved over new territories. Is it still the same cloud? What constitutes its identity? This makes me question: what constitutes the identity of design, when designers are taking new roles and are overarching other disciplines?

6) Dust can show other invisible forces even through of its own intangible nature. It shows rays of light and currents in the wind and water. Dust reminds me of the importance of these natural resources.

The capability of showing these invisible forces makes me question if this is a role art/design can play in complex issues? Can design show invisible but elementary forces within a context?

7) The dust in the air has a similar visual appearance as the stars in the galaxy, despite that this bridges a giant spectrum in size. Is there a potential for design to operate in these opposite spectrums in size? Is there a potential in the ability for design to be able to zoom in and out?



Cooperative particles within a dust cloud; Drawing Annemarie Piscaer

PREFACE COUNTER NARRATIVE

It is important in the context of this thesis to bear in mind the narrative that dust provides me because it not only explains how I will continue to use various narratives throughout this thesis, but also explains my way of thinking rather in particles then in continuous flows. This creates a counter narrative that is needed because it reveals my unique individual knowledge beyond logic. The counter narrative is merging my expert position as a designer to my 'amateur' (based on my 'loves') position. In my thesis I will build an argument why I think those positions can't be seen separate from each other and need to be integrated. Consequentially my research plays with the fluid boundaries of being an expert and an amateur as a designer. The counter narrative pops up as small particles in my research but is connected by the #BLURRING REALITIES. These small particles that shape the 'Counter Narrative GO TO THE MOON AND BACK' are elements that follow my intrinsic fascinations, and could be considered as my 'amators' (the things I love).

I'm fascinated with dust; #DUST I love these small insignificant seeming meaningless particles as mentioned in the preface. Thinking about dust allows me to zoom in at each individual particle.

Zooming out on those dusty particles further and further the same pattern seems to appear in the shape of our galaxy; #GALAXY. The earth becomes a small and insignificant dot that is not even visible in the universe. I find it fascinating that by taking this perspective not only do we 'as humans' all of a sudden seem insignificant, but also seem part of something bigger; part of an ecosystem.

Pirates are my alter ego with a dominant will that pops up beyond my control when I'm on the quest of new territories, ideas and knowledge. The #PIRATES infiltrate my research on many occasions. Pirates became my alter ego a few years ago when I just started as a designer.

Designing felt like conquering new unknown territories. I heard the story that my Piscaer ancestors might have been pirates sailing the Portuguese waters, and the two first pirate-woman were called Anne (Bonny) and Mary (Read). Accepting my position as a pirate allows me to not be afraid of the unknown and feel like a hero sometimes.

The 'amator' I have for amateurs #AMATEUR is not opposite to my love for pirates. They are both hero's and anti-hero's at the same time. Amateurs follow their love's, and are on their particular quest. By doing so they are not afraid to fail, do things wrong, clumsy, strange or unconventional; they experiment and do it their way. This ability to fail and love is a treasure in my research.

Embracing the counter narratives makes this research non-linear, and by times messy. I experimented with equally valuing both the expert as well as my amateur position during the evaluation of this research, by creating a moment for celebrating the amateur position as well. I will explain this in chapter 6. It is operating on the fluid boundaries of the profession. To be an expert and amateur.

1 RESEARCH OBJECTIVE

In this section, I will outline my personal context and how it influenced the decision to study this subject and present my research question. I will also lay out the definitions and frameworks of the research, including wicked problems, ecology, the changing role of the designer, amateur / Pro-Ams / multidisciplinary, and transdisciplinary. I then discuss my research methods and give a reason for my application of these methods within this study for design education.

1.1 INTRODUCTION

Who am I as a professional? I'm a designer, researcher, and design-educator. I'm trained at the design Academy Eindhoven to become an 'expert' in product design within the field of wellbeing. I operate (with my self-founded Studio Dust) within the circular economy¹. The studio focuses on upcycling industrial waste 'dust' into products. My work consists of assignments related to material design regarding 'waste' flows and my own initiated projects. As a designer, I'm part of the city lab 'Stadslab Luchtkwaliteit'². For example: I'm currently co-operating with architect Iris de Kievith on a project to visualize and materialize the invisible fine dust from traffic pollution. We use the fine dust as a material for glazing ceramic tableware. We will harvest the dust with locals and organize dinners to eat from the seemingly 'dirty' tableware in order to start a discussion about the

1 Circular Economy aims to develop products waste out, while minimising negative impacts and use renewable energy sources. From: <https://www.ellenmacarthurfoundation.org/circular-economy> [accessed April 2017]

2 Stadslab Luchtkwaliteit: This is an open city lab addressing the issue of air quality, on a self-organized basis. It does not have a physical Lab Space. It consists of a trans-disciplinary team of 9 people varying in ages and backgrounds. It works together with professional air-quality institutions such as RIVM and is funded by the 'Creative Industries Fund NL' (2015 and 2016), the municipality of Rotterdam, and is part of the CityMaker Movement by the Rotterdam Architecture Institute.



Image: Harvesting Dust by cleaning the streets, and the fine dust on ceramic / Iris de Kievith & Annemarie Piscaer Jan. 2017

consequences of fine dust for our health. The dust on the tableware is the same as we breathe day in and out. The fine dust on the ceramic will be safe due to ceramic techniques. It is simultaneously attractive and repellent.

In my design practice, I notice that my assignments and projects often relate to complex problems like the topic of air quality or the circular economy. This embodies a shift in the context of design, from product related to a social context, for example. It also changes the role of design within a design process. I take the role of networker, facilitator, logistics, and data analyst. This changing role also requires me to gain a lot of knowledge from these different fields of expertise. I developed, for instance, a lot of knowledge on fine dust³. In the case of the circular economy, I balance between my expert design role and unconventional know-how of things like logistics. I'm placing my expertise into new territories. It not only changes my expert design role, but I also have to add new roles outside my expertise.

This process could be described as taking an 'amateur' role beside the 'professional' design role. The level of my knowledge is not at a professional level, but is lead by my passion for a topic. This personal balancing process makes me wonder if this is something that I do naturally or is it something that I'm educated to do? It makes me curious about how similar practices by other designer's function. What premise do these practices constitute? What can be expected of the of these practices' outcomes? Which skills then belong to the designer? Should future designers be taught different skills? And what are the implications for design education?

³ Fine dust consists of tiny particles with diameters of less than 10 micron.

1.2 RESEARCH QUESTION

Due to the previous concerns, my research question is:

'What constitutes the practice of a designer that assumes the role of a pro-am within the setting of a city lab concerning ecology (wicked problem) and what are the consequences for design education?'

Sub-questions:

- What constitutes the practice of a designer that operates outside the traditional field of expertise in a city lab?
- What do these new practices imply for design education?
- Does this have an implication for the pedagogical framework?
- Does it require a new application for the pedagogical framework?

These questions therefore provide a context to fully explore the context of the position of the designer within both academy and within the vital ecological contexts of our planet.

1.3 DEFINITIONS

Here, I provide some definitions of the research to explain both my position, but also the context of the research:

The design context shifts towards ecology; this is a wicked problem. It demands that designers change their current role and start cooperating in transdisciplinary settings like a city lab. Consequentially, it requires future design students to be trained a different set of skills. Unlearning is an essential part of the pedagogic framework. In the next chapters, I will explain this and build arguments regarding the research question. But firstly, I will start with a definition of these terms and how I will continue to use them in this thesis.

- 1 It does not have one definite solution.
- 2 Wicked Problems have no stopping rule. It does not have an end point.
- 3 No true or false.
- 4 A possible solution for a wicked problem is generating new problems and is intertwined with other problems.
- 5 Every solution to a wicked problem is a "one-shot operation"; because there is no opportunity to learn by trial-and-error, every attempt counts significantly.
- 6 It has various potential ways of addressing it.
- 7 All problems are unique and therefore not representable by a model.
- 8 A Wicked Problem could be considered a symptom of another problem.
- 9 A wicked problem has various explanations. The choice of explanation determines the nature of the problem's resolution.
- 10 The planner has no right to be wrong. (Rittel and Webber, 1973, p.161-167)

Wicked Problem

The environmental problems we are facing now are wicked problems. Rittel and Webber first described complex issues using the term 'wicked problems'. They developed 10 criteria to describe a wicked problem. (see text box) Global warming can't be perceived, for example, as just an environmental issue; it incorporates various problems like social issues and economic and political problems, as well. This is the case for environmental problems as Rittel and Webber described wicked problems to be 'a symptom of another problem'. These grand societal challenges are so complex that one person or discipline can't solve them; it requires cooperation. The position of wicked problems therefore succinctly describe the context in which must consider the ecology and I apply this framework to my research.

Ecology

Ecological problems are wicked problems. The term ecology defines the complex situation of our environmental problems interconnected to social problems and personal consequences.

Guattari called this interconnection 'ecosophy'. In 'The Three Ecologies' (Guattari, 1989), he described the relationship of complex phenomena "between the three ecological registers: the environment, social relations and human subjectivity." (Guattari, 1989, p.28) This interconnection of the environment to social relation and human subjectivity is of importance for the position of the designer; it defines the necessity of being aware of the position of design, as it needs to understand that dealing with environmental issues has an impact on social relations and human subjectivity for example.

Changing role of the designer

Design has a responsibility to start acting positively towards ecological issues, not only because of the urgency, but also for partially causing the ecological crisis. Design has to address this within the traditional context of design. Otherwise, design remains, as argued in 'Design for the real world' (Papanek, 1984), accountable for the ecological crisis, "by creating whole new species of permanent garbage to clutter up the landscape, and by choosing materials and processes that pollute the air we breathe, designers have become a dangerous breed." (Papanek, 1984, p.1) **#DUST** However, design also has the potential to address ecological issues. This requires using design expertise beyond the traditional boundaries and context. Design can take complementary roles on top of its expertise. For this thesis, I define this changing role of design as a situation where the design field is expanding its boundaries, adding new dimensions, and adapting to the changing economic, social, and environmental circumstances by taking new roles.

The papers 'Perspectives on the changing role of the designer: Now and to the future' (Tan, 2009) and 'Design activism beautiful strangeness for a sustainable world' (Fuad Luke, 2009) described this new practice. In these new practices, designers take on multiple roles, like "non-aligned social brokers and catalysts, facilitators, authors, co-creators, co-designers, and 'happeners'." (Fuad-Luke, 2009, p.189) Taking these complementary roles enabled them "to drive innovation in sustainable development." (Tan, 2009, p.3) In other words, adding roles to the design role and shifting the design context enables dealing with ecological issues.

Amateur / Pro-Ams / multidisciplinary

Adding these new roles to the traditional design context could be described as taking amateur roles on top of the professional context. The etymological origin of amateur comes from 'amator' (to love); it means a passion for doing something. To a lot of people, however, it has a negative connotation of untrained. For this thesis, the definition of amateur will be based on the research: 'The Pro-Am Revolution: How enthusiasts are changing our economy and society' (Leadbeater and Miller, 2004)

Leadbeater and Miller described amateurs as having a love for a topic, but they aren't seen as skilful. They created the term 'Pro-Am' for amateurs operating at a high skill level, highly motivated and highly connected. "In the last two decades, a new breed of amateur has emerged: the Pro-Ams, amateurs who work to professional standards. ...The Pro-Ams are knowledgeable, educated, committed, and networked by new technology." (Leadbeater and Miller, 2004, p.12) Leadbeater and Miller concluded that the Pro-Ams are the ones that will shape our future. In our complex networked society, there are new fields of expertise emerging (IT for example), and traditional institutions like education aren't able to respond quickly enough. This gap is filled with a variety of 'Pro-Ams'. The Pro-Ams are developing new innovative solutions especially in the field of ecology.

A Pro-Am is, in essence, different than an older term, multidisciplinary. A multidisciplinary person is an expert in various disciplines and is able to combine these knowledge fields. Buckminster Fuller, for example, operated within the field of ecology and education as a mathematician, architect, designer, educator, engineer, and writer. Fuller is not the Pro-Am that is emerging in our present time. Although he changed society radically as a multidisciplinary genius, he regarded himself as an amateur "...my own rules, I may not profess any special preoccupation or capability. I am a random element." (Fuller, 1962, p.2) #AMATEUR

The context of amateurism has changed in the last decade. Cristina Ampatzidou (co-founder 'Amateurcities' ⁴) described this in the interview (see appendix), explaining that young people interpreted the word 'amateurism' as 'having a love' for a topic, which is different to older

4 Amateur Cities is an online publishing platform on alternative ways of citymaking presented critically. It aims to connect city thinkers to city makers. (<http://amateurcities.com/about/>, accessed Aug. 2016)

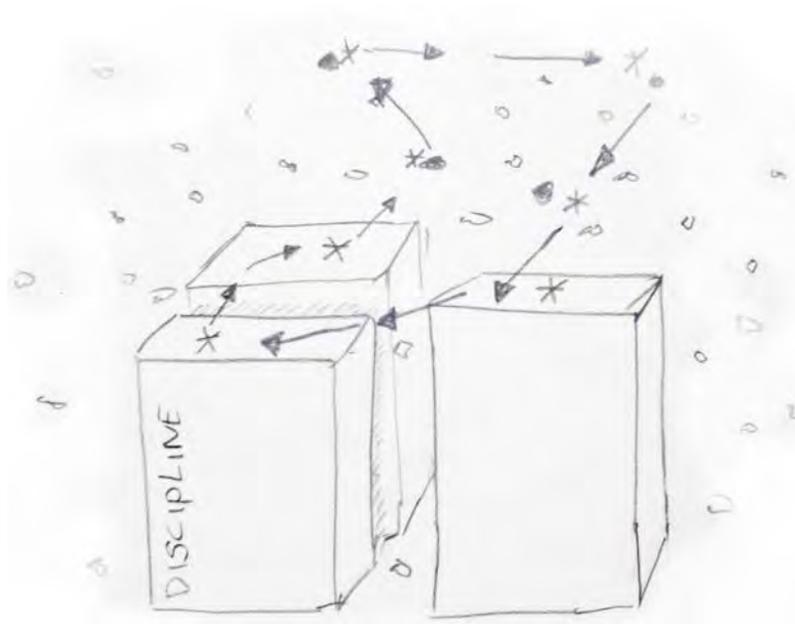
people, who interpret the word as 'untrained'. She thought this was due to the internet generation that is active on 'Etsy': amateur maker, 'Airbnb': amateur hotelier, etc. The term Pro-Am defines the fluid boundaries between 'professional' and 'amateur' roles. It is applicable in the context of the changing role of the designer. Designers connect their professional knowledge and skills to the new emerging fields in which they operate.

Transdisciplinary

Ecological issues are complex. In order to be able to address them, there is an urgent need for new knowledge. This knowledge cannot be generated within the current disciplines. It requires transdisciplinary cooperation. Transdisciplinarity connects the existing disciplines to emerging fields (in which Pro-Ams operate) that could be considered 'un-disciplinary'.

Transdisciplinarity is described in '*METHODOLOGY OF TRANSDISCIPLINARITY*' (Nicolescu, 1994). He stated that transdisciplinarity is not the opposite of inter- or multidisciplinary but rather 'a fertile complementarity'. (Nicolescu, 1994, p.5) He sees transdisciplinarity as an approach "beyond all discipline". In order to understand transdisciplinarity as a research approach, he stated that it is important to first define the 'boundaries between disciplines' and 'beyond', and second, what defines 'beyond'.

First, "the boundaries are like the separation between galaxies, solar systems, stars, and planets." Boundaries between disciplines are in 'fluctuation' and do not have solid edges. They change due to time and movement. Transdisciplinarity "crosses the boundaries where we meet the interplanetary and intergalactic vacuum. This vacuum is far from being empty: it is full of invisible substance... and without this vacuum there is no universe." (Nicolescu, 1994, p.6) #DUST #GALAXY He considered transdisciplinary cooperation as having the 'goal to understand the present world'. (Nicolescu, 1994, p.3) This is relevant in the context of this thesis, as it describes the way in which people cooperate in a city lab, with the fluid boundaries between professional and the Pro-Am context with the city as the canvas of reality, the present world. The definition of transdisciplinarity by Nicolescu as he uses the narrative of the galaxy is an inspiration for the educational project GO TO THE MOON AND BACK (see Chapter 4).



Transdisciplinarity is a fertile complementary of disciplines, connecting individual particles in the 'vacuum' that is surrounding the disciplines; Drawing Piscaer May 2017

City lab

City labs are recent phenomena. The term city labs describes the context to ecology and how designers can engage in experimenting with alternative perspectives within the fluid boundaries of their profession in a transdisciplinary setting. City labs use 'the city' as a 'canvas of reality' to which they can connect their vision.

Marijke Bovens (she is a journalist and researcher specialist in the field of architecture and culture) conducted research within the framework of

Creative Industries Fund NL⁵ about city labs. She described city labs as learning networks that experiment cooperatively with various complex (urban) issues. Within the investigation, she found a wide variety of city labs, but all labs had as commonalities to be hybrid; city labs have a wide variety of professions, connecting both experts and non-experts. They also have a pragmatic nature; city labs have a problem-solving mentality, however the laborants (people working in the lab) are aware of the complexity and never claim to have THE solution. They are run by independent professionals, and city labs function as a learning network. This functions both online and in the real world. (Bovens, 2017)

Speculative design

Within the city labs designers are engaging in experimenting with alternative perspectives. Speculative design is a term that describes methods that proposes alternative visions. It materializes these visions while not losing the qualities of being still opaque. Speculative design can, therefore, enable divergence between context, beliefs, and methods because it relates to 'reality' while giving space to other imaginable possibilities.

The method described in 'Speculative Everything: Design, Fiction, and Social Dreaming' (Dunne and Raby, 2013) reveals how design can serve as "speculation about possible futures; and as a catalyst for change." (Dunne and Raby, 2013, p.33) Design is a medium that allows one to speculate by posing 'What if?', and "to be inspirational, infectious, and catalytic, zooming out and stepping back to address values and ethics... blurring distinctions between the 'real' real and the 'unreal' real." By doing this through design, it materializes the speculative concepts and "contests 'official reality'..."

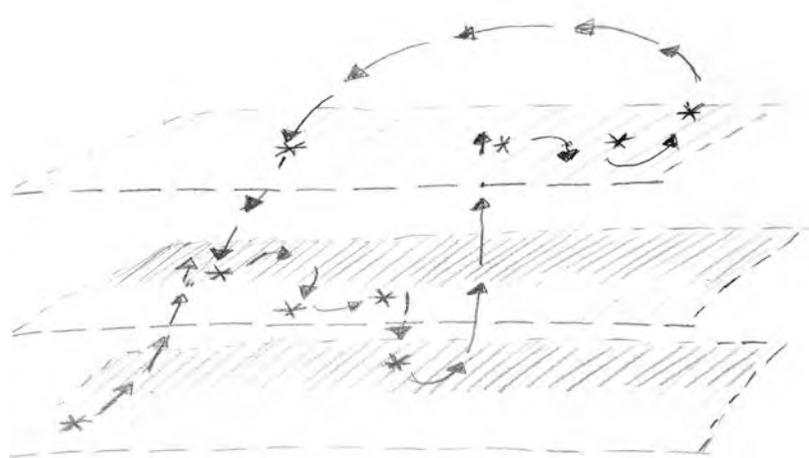
#BLURRING REALITIES Design speculations can give form to the multiverse of worlds our world could be." (Dunne and Raby, 2013, p.159) This definition of speculative design is relevant in the context of this thesis as it defines the blurring situation between an imaginable future and reality itself. City labs create a canvas for designers to operate in these blurring realities and provide them a materialized situation to act upon ecological issues. Designers can use speculative design to make the "invisible

⁵ Creative Industries Fund NL is the biggest Dutch cultural fund for architecture, design, and digital culture, as well as every imaginable crossover. The Fund supports exceptional and innovative projects and activities by designers, makers, and cultural institutions in the creative industries. (http://stimuleringsfonds.nl/en/the_fund/organization/about_the_fund/, accessed Aug. 2016)

substance” (Nicolescu, 1994, p.6) tangible, this allows envisioning a possible future.

Unlearning

An important framework in the context of this thesis is ‘unlearning’, as it is necessary in order to be able to operate in the fluid boundaries of the changing role of the designer. The term ‘unlearning’ is an ambiguous term and is interpreted in various ways. Unlearning in my view is a not an ‘undo button’ in a linear process, but is a method of critically switching and re-positioning between systems. In order to do that, one has to be able to ‘unlearn’ routines and fixed ideas existing in the other systems. The essay ‘Unlearning: A Duologue’, published in the ‘The Pedagogics of Unlearning’ (Fradenburg and Joy, 2016), described the urgency of unlearning in our complex networked society with all its fluid boundaries between knowledge ‘institutes’. ‘Unlearning’ is a process not opposite to ‘learning’, it rather is a process of diverging between beliefs and methods. “Unlearning is a process that shows people they should no longer rely on their current beliefs and methods. Because current beliefs and methods shape perceptions, they blind people to some potential interpretations of evidence. ...” (Fradenburg and Joy, 2016, p.176).



Unlearning is diverging between context, beliefs, methods; Drawing Piscaer May 2017

1.4 RESEARCH METHOD

My chosen research methods are uniquely related to my personal context: In the context of design education, I have an outsider position. I’m an independent lecturer and do not have a tenured position.

MY POSITION

I’m a member of ‘Stadslab Luchtkwaliteit’. In the context of this research, it provided me with a lot of experienced based information. This information is subjective. In order to be able to create valuable data out of my experience, I reflected with other members of the ‘Stadslab Luchtkwaliteit’ and researcher Marijke Bovens, who conducted a study on ‘Stadslab Luchtkwaliteit’.

CASE STUDIES + INTERVIEWS

In order to uncover these new design practices and discover under what circumstances these practices have the most relevance, this qualitative research is based on literature research, case studies on city labs, interviews with designers that assume a Pro-Am role within those labs, and a reflection on the collected data, because these methods provide detailed information.

Case Studies:

- 1) ‘Stadslab Luchtkwaliteit’, Rotterdam
- 2) ‘Zero Footprint Campus’ Utrecht⁶

Both studies fit the research, but vary enough in circumstantial settings to create valid data. This is done through a background research on these Labs and an interview with the initiators of the Lab. Marieke de Keijzer from Stadslab Luchtkwaliteit, she is a landscape architect and Cynthia Hathaway from the Zero Footprint Campus, she is a designer. I’ve also interviewed the designers that assume a Pro-Am role in the Labs. Kirsten Kentler, she is an interaction designer and a Pro-Am on the topic air quality and a member of Stadslab Luchtkwaliteit. Guido Marsille, he is an interior architect and a Pro-

⁶ Zero Footprint Campus is the first project by artist Melle Smets and designer Cynthia Hathaway, established within the context of Department of Search, in which artists and scientists work together on urgent issues at Utrecht Science Park during the academic year.
(<http://www.zerofootprintcampus.nl/en/about-zero-footprint-campus/>, accessed aug.2016)

Am 'chemist' for his project 'van Blankensteyn' where he started a soap factory with ecology in mind within the setting of the Zero Footprint Campus.

Reflection:

In order to gain depth from experts, the research reflects on the collected data with experts in the field, because this provides a context for the urgency of the research in the current design field and within design education. Within the city labs, I reflection on the data with an interview with Marijke Bovens, who is a expert on city labs within the Netherlands and has a distant view on the practice of designers in these labs. I also include my own reflections when I attended expert meetings on City Labs by Creative Industries Fund NL who are a national body that supports such City Labs.

In order to get insights in the topic amateurs I interviewed Cristina Ampatzidou, she is an urbanist and initiator of 'AmateurCities'. She is an expert on amateurs, because she conducted a wide research and publishes about amateurs in the context of the city for the platform 'AmateurCities'. And I also reflected with amateurs regarding this research. I've spoken to an amateur weaving group.

Lastly I reflected on the data with both design students that will have their future practice in these emerging new design practices and with design educators. I gave a seminar regarding the content of this research 'CROSSING BOUNDARIES⁷ for students from the Master Eco-Social design programme at the Free University of Bolzano Italy together with Professor Fuad-Luke who is not only a design professor but also an expert within this topic. The seminar addressed the changing realities and roles of design within collaborative design practices. And this research was situated within the HOT⁸ research program of the Hogeschool Rotterdam / Creating010 under the topic: "education in labs, communities of practice

⁷ 'CROSSING BOUNDARIES': Seminar about collaborative design practices. Piscaer presents research for Master Education in Arts and StadsLab Luchtkwaliteit. Fuad-Luke shows ongoing work with the Make Yourself... local clothing project in Bolzano.

⁸ HOT is a Learning Community of lecturers from the Rotterdam University of Applied Science from the Institute Communication, Media and Information Technology, Willem de Kooning Academy, Department of Education, Research Centre Healthcare and Creating 010. (<https://www.hogeschoolrotterdam.nl/onderzoek/projecten-en-publicaties/creating-010/smart-and-inclusive-society/hogeschooldocenten-ontwikkel-team/>, accessed aug.2016)

and stations." This provided a possibility to reflect on the data and content with experts regarding this topic in the context of design education and educators. Under the guidance of Anne Nigten, who is a Lector of Design for Network Ecologies at Creating010.

1.5 RELEVANCE FOR DESIGN EDUCATION

IMPLICATIONS

First; this thesis seeks to inform design education about the changing practice of the designer. This change is something that future designers will be confronted with in their future careers. Do the changing circumstances of these practices require a redefinition of how designers could be educated? What competencies should design students learn? Second, the ecological issues require an urgent response from design education, since the design discipline as a whole has a responsibility to start acting positively towards these issues. Future designers his should be trained in this mentality.

Where designers continually add more and more layers to the core of the discipline, changing their, "roles, significance and functions" so too must education to create pathways for what designers can do to do today, and where they could be taking design in the future. (Tan, 2009, p.12)

APPLICATIONS

To create an understanding of the implications of the changing circumstances of these practices for design education, it is important to have tested various applications in which it could be implemented within design education.

1.6 CONCLUSION

In this chapter I have described my research question and given definitions as well as a framework to my study, including the context of wicked problems, the nature of the Pro-Am, and multi- and trans-disciplinarily. In doing so, I have framed the current 'problem' of designers within design education, and in the following chapter, I will provide a theoretical framework through which to explore this problem.

2 THEORETICAL FRAMEWORK

In this part, I present the theoretical frameworks for the research. I will elaborate on the ecological urgency of the planet; the context of 'change makers' and investigate the cooperative transdisciplinary circumstances between them, including a critical framework of such, the role and expectations of design, and a pedagogical context, which includes both a critical framework of 'unlearning' and the consequence of all of these upon design education.

2.1 ECOLOGICAL URGENCY

In this chapter, I will elaborate on the ecological urgency, as it gives the context for design to act upon.

We are living in the Anthropocene⁹, facing climate change, (global) social inequality, increasing poverty, pollution, material scarcity, etc. Design as a

⁹ Anthropocene: scientist Paul Crutzen first suggested we were living in the "Anthropocene," a new geological epoch in which humans had altered the planet. An area of human dominance of biological, chemical and geological processes on Earth. (http://e360.yale.edu/features/living_in_the_anthropocene_toward_a_new_global_ethos, accessed April 2017)

discipline cannot be seen as separate from this context. Design is part of this ecological system. Design depends upon natural resources for materials and energy, and also depends on the people that produce the designs, for example. Design needs to re-think design systems that contribute to pollution and have a negative effect on people's lives.

There is urgency for design to start acting positively towards ecology, because the consequences are a threat to humanity. United Nations Secretary-General António Guterres stated that consequence of "climate change is an unprecedented and growing threat – to peace and prosperity" ... "these are scientific facts, not politics. ... Climate change is a direct threat in itself, and a multiplier of many other threats," (Guterres, 2017). The issue of climate change is interconnected to prosperity and peace. This consciousness of the interconnectivity is the core of ecology as described by Guattari (1989). The ecological issues are urgent and reveal a necessity to become aware that we, as designers, are part of the ecological system.



First image of the earth as seen from the moon on the cover of by LIFE MAGAZINE; The 1968 Special Issue featuring NASA

The first image of earth seen from the moon was the moment we got a visual understanding of this ecology. This image was featured on the cover of LIFE MAGAZINE; 'The 1968 Special Issue featuring NASA'. #GALAXY

Buckminster Fuller connected and popularized the term "Spaceship Earth" to this image. In 'Operation Manual for Spaceship Earth', (Fuller, 1969) Fuller described the urgency for gaining an awareness of being part of the ecological system that we depend upon, as "Astronauts" aboard "Spaceship Earth". He described it as "paradoxical but strategically explicable, that we have been misusing, abusing, and polluting this extraordinary chemical energy-interchanging system for successfully regenerating all life aboard our planetary spaceship." (Fuller, 1969, p.15) Fuller said that since we were not given an 'Operation Manual for Spaceship Earth' "we are forced to use our intellectual capabilities." (Fuller, 1969, p.16).

CONCLUSION

The ecological issues are urgent and need to be addressed. In order to be able to do this design has to be aware to be a part of the ecological systems. Design needs to start acting positive towards ecology. Design needs to start cooperating with others. These others could be regarded as change makers. I will elaborate on this in the next chapter.

2.2 CHANGE MAKERS

Who, then, have these intellectual capabilities in order to 'learn' how to survive on 'Spaceship Earth'? Who are the ones that are capable of addressing these ecological issues? Who can be regarded as change makers?

In the traditional context, problem solvers are regarded as experts. However, this concept of experts solving problems isn't sufficient anymore. The complexity of these ecological problems requires a drastic new perception of the ones that are capable of contributing to new insights. As Rittel and Webber concluded, "The professionalized ... are not readily adapted to contemporary conceptions of interacting open systems and to

contemporary concerns with equity.... the complex nature of these ecological issues demand different approach in cooperation's that are inclusive". (Rittel and Webber, 1973, p.156)

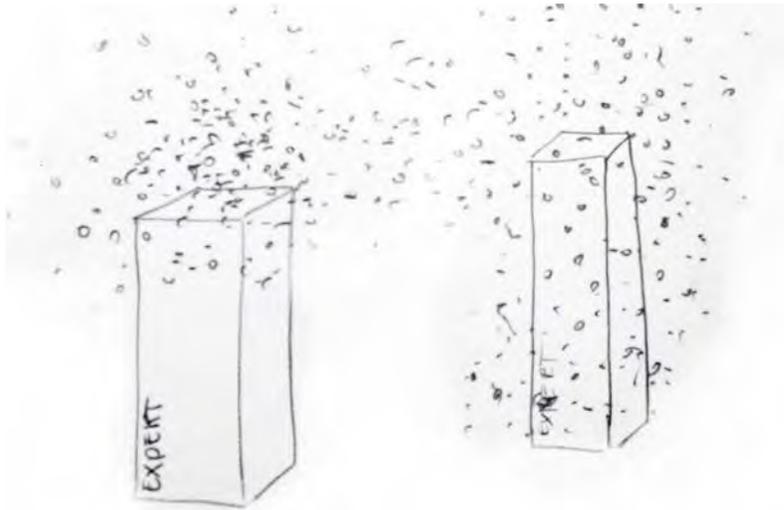
This means that the experts can no longer be regarded as the change makers. It demands a redefinition of who the new change makers are and how this process functions. If the change makers aren't the experts anymore, then can the non-experts be seen as the new change makers? This provides a problem to explore.

Papanek argued that both experts and non-experts could be considered change makers. He called for an inclusion of "the people for whom the design team works", or the non-experts as clients of the expert design team in order to deal with ecological issues. Because "without the co-operation of the eventual 'clients', no socially meaningful design can be done." (Papanek, 1984, p.119) Dunne and Raby described our reality as a co-existence of seven billion individual human beings living in a unique world and regarded all human beings as these change makers. They argued that "change starts with the individual and that the individual needs to be presented with many options [through speculation] to form an opinion." (Dunne and Raby, 2013, p.159) Leadbeater and Miller described the change makers as "the Pro-Ams; the new driving force, creating new streams of knowledge, new kinds of organisations, new sources of authority". (Leadbeater and Miller, 2004, p.71) #AMATEUR The Pro-Ams embody an inclusion of both expert as well as non-expert knowledge into one person; this creates new unique individual knowledge that is needed to deal with ecological issues.

How will this process of including expert and non-expert knowledge work? Rancière described the process of merging knowledge (not in the context of change makers towards ecology) in 'The Ignorant Schoolmaster: Five Lessons in Intellectual Emancipation' (Rancière 1991). The process of merging expert 'Learned' and non-expert 'Ignorant' knowledge as 'equality of intelligence' (Rancière, 1991, p.32) where merging knowledge happens if both are equally valued. This process of 'equality of intelligence' is a responsibility of education. In other words, there is a need to see all individuals as change makers. This means seeing experts not as the opposite of non-experts, but a convergence of both where they are equally valued.

In 'Operating Manual For Spaceship Earth', Fuller called these change makers "Sea-Mastering people, the great outlaws or Great Pirates." He thought that people (experts as well as non-experts) operating bravely as outsiders in the real world are the ones capable of dealing with ecological

issues. He described this as being "simply because the arbitrary laws enacted or edicted by men on the land could not be extended effectively to control humans beyond their shores and out upon the seas. ... only laws that could and did rule them were the natural laws - the physical laws of universe which when tempestuous were often cruelly devastating." (Fuller, 1969, p.6) #PIRATES In other words, he highlighted that the context of 'reality' allows for the development of merging knowledge (experts and non-experts), and the creation of change makers.



Change Makers diverge between their expert core and an individual particle network; Drawing Piscaer May 2017

CONCLUSION

Change makers aren't the opposite of experts. They could be considered as individual people operating within a 'real' context, fluidly moving between expert and non-expert knowledge where both are equally valued. They can critically switch and re-position between systems and contexts. In other words, they embrace being a professional and an amateur; a Pro-Am. The process of merging knowledge won't happen on an individual base as Rancière argued and there is a role for education. For this new unique knowledge to be beneficial towards ecological issues it requires transdisciplinary cooperation, I will elaborate on this in the next chapter.

2.3 COOPERATIVE CHANGE MAKERS

How will the process of including the change makers in a cooperation work? In this chapter, I will describe how this cooperation functions, including in the city lab setting.

INCLUSIVE COOPERATIONS

An interdisciplinary cooperation is based on the concept of various disciplines and expertise's working together on a problem. It is a process of connecting the dots between expert knowledge. As experts cannot be seen as the change makers, neither can an interdisciplinary approach be seen as a way of dealing with ecological issues, as it doesn't give space to include the voice of the change makers. Transdisciplinary cooperation allows unique knowledge to be developed beyond the traditional canvas of an interdisciplinary approach.

Expert knowledge is still key, but in order to get new insights, this expert knowledge should be combined with the non-expert knowledge. Transdisciplinary cooperation includes the change makers in a co-creation process. Papanek argued for heightened awareness of the constitution of the team. He proposed that "integrated design needs teams of specialists, too ...and.. the people for whom the design team works must have representation on the team itself." Change makers can contribute by "making directly aware of needs which the professional opinion takers didn't realize or considered unimportant.' (Papanek, 1984, p.119) The complexity and urgency of the ecological issues demand an awareness of the cooperation between experts and non-experts. As experts and non-experts are not opposite to each other and are integrated, it makes the boundary between them fluid.

How do these cooperation's with these fluid boundaries work?

FLUID BOUNDARIES

First it is important to define how the fluid boundaries are generated. The way Pro-Ams merge expert and non-expert knowledge fields is on a very intuitively base and is guided by their love for a topic. These unintentional combinations are not aggregated.

Rancière called this the 'power of the intelligent being'. It is the individual combination of the 'learned' with the 'ignorant' that will create this new knowledge. "There is no intelligence where there is aggregation.... there is

intelligence where each person acts, tells what he is doing, and gives the means of verifying the reality of his action." This 'power of the intelligent being as such' is something that can't be developed solely on an individual basis. It requires cooperation; responsibility for this "is at once one of duality and one of community." (Rancière, 1991, p.32) Communities have a responsibility to facilitate this transdisciplinary cooperation because it facilitates the creation of these fluid boundaries, as these do not appear out of the blue. Institutions like education, therefore, have a responsibility for this, as well.

Second a mutual interest in a topic and purpose connects various individual people to one another. City labs focus on a certain topic that creates a common purpose. Rancière described this as the connection of "intellectual beings, intelligence directs individuals alone; their union is subject to the laws of matter ... immaterial minds cannot be linked together except by making them submit to the laws of matter." (Rancière 1991, p.76) #DUST Fluid boundaries (expert and non-expert merged into one person) connect a wide variety of people. This connection generates new knowledge if people start cooperating in transdisciplinary settings whilst having a tangible common purpose.

Lastly these fluid boundaries allow us, in essence, to become true individuals whilst creating an 'us' as well. Connecting our individual loves for a topic to our professional knowledge creates true individual knowledge. By sharing the mutual interests with 'others', it connects 'me' and 'you' into 'we'. Fuller described the transdisciplinary process of 'The Great Pirates' as "free in the sense that they will not struggle for survival on a 'you' or 'me' basis, and will therefore be able to trust one another and be free to co-operate in spontaneous and logical ways." (Fuller, 1969, p.34) There is huge value towards our ecological problems in being a true individual; creator of unique individual knowledge needed to tackle these complex ecological issues, and creating an 'us' at the same time; sharing the knowledge and connecting people and ideas rather than disconnection.

ESSENTIAL SIDE EFFECTS

This 'Common Purpose' enables a wide variety of people to start cooperating. Leadbeater and Miller recognized the side effects of the unintentional cooperation between Pro-Ams; it creates the building of social capital. "Networks of relationships that allow people to collaborate, share ideas and take risks together. ...it can help glue a society together and allow people to trust one another more easily, thus helping them to adjust to change collaboratively and share risks." (Leadbeater and Miller, 2004, p.49)

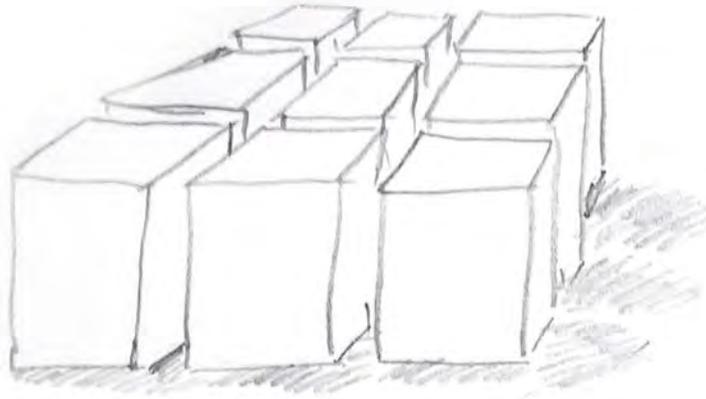
Because of the nature of ecological problems, these side effects are essential, as such. They are unintentional and start by coincidence. However, acknowledging the relevance of these side effects enriches the inclusive cooperative process and allows it to become an effective instrument. These side effects are key to what Guattari (1989) described as "practices which, in the short term, 'profit' no one, but which are, in the long run, vehicles of processual enrichment for the whole of humanity." (Guattari, 1989, p.65) Or as Fuad-Luke put it, 'the process is part of the impact.' (Fuad-Luke, 2015, p.303)

LEARNING NETWORKS

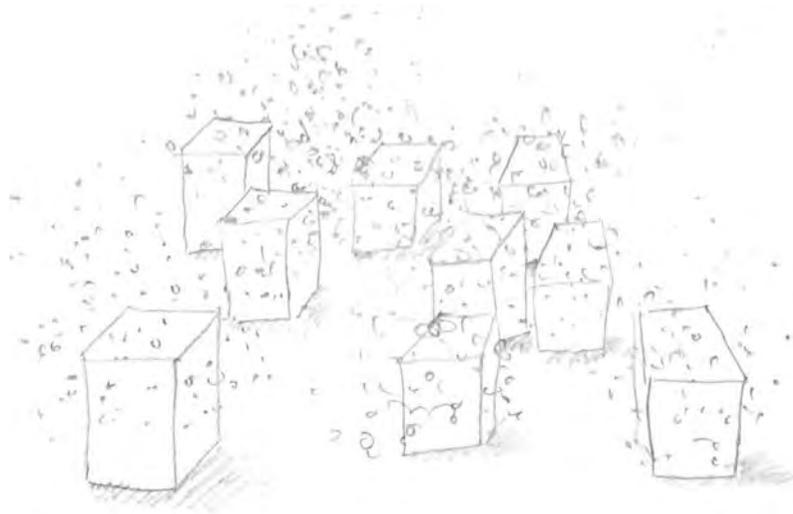
It is important that change makers co-operate, because it also enables the creation of unique individual new knowledge that is urgently needed for addressing ecological issues, as Rancière described. These cooperative settings are networks that could be described as 'Learning Networks'. How are they set-up?

The way Pro-Ams are organised embodies great potential, because of its un-deliberate nature. Coincidence plays an important role. Leadbeater and Miller described the non-deliberate set-up of learning networks this way: "Pro-Ams will bring new forms of organization into life, which are collaborative, networked, light on structure, and largely self-regulating." (Leadbeater and Miller, 2004, p.71)

The recent phenomena of city labs are an example of these flexible networks where knowledge is shared and received both online as well as analogue in the real world. It connects a wide variety of people and knowledge. Learning networks also have another function: it enables the 'changing role of the designer', as Fuad-Luke described "the role of the internet in opening up new opportunities for design/designing, a widening of ecological reform to embrace technocratic to strong democratic approaches, and the shifting canvas of design praxis." (Fuad-Luke, 2009, p.143) Sharing knowledge from other fields enables the designer to overarch their own discipline and take on a new role because the learning networks provide the input of how to do this. These learning networks therefore are essential in creating the fluid boundaries.



OLD: NON_FLUID



NEW: FLUID

Fluid boundaries between expert and non-expert knowledge allows individual particles to connect, creating an 'us'. Drawing Piscaer May 2017

CITY LAB CONNECTS TO EVERYDAY LIFE

The transdisciplinary cooperation's connect experts and non-expert in the setting of 'reality'. This provides a canvas for dealing with ecological issues. These can't be dealt with in an isolated, sterile model setting. City labs provide a canvas to connect to daily life, in contrast to, for instance, 'scientific labs'. This daily life generates moments of tangibility as well as uncertainty. Certeau called this canvas the 'practiced place' in 'The practice of everyday life' (Certeau, 1984). This is needed since "perspective vision and prospective vision constitute the twofold projection of an opaque past and an uncertain future onto a surface (the city) that can be dealt with." (Certeau, 1984, p.93-94)

The city also provides a moment for uncertainty, for un-deliberate things to happen. "He thus makes a selection (he goes here and not there). The user of a city picks out certain fragments of the statement in order to actualize them in secret." (Certeau, 1984, p.98) In other words a city lab provides a canvas for a learning network to connect to daily life and thus provides the essential elements of 'tangibility' or 'matter' and 'uncertainty' or 'coincidence'.

CONCLUSION

The ecological urgency demands experimentation with new forms of cooperation. A City Lab can facilitate a safe yet 'real' ground for this. These transdisciplinary, fluid set-ups can generate new forms of knowledge, build social capital, and create a wider understanding of others. It allows 'us' and 'them' to connect into 'we', while remaining (or becoming), in essence, true individuals and the creator of the urgently needed individual new knowledge. In other words being a professional, being a Pro-Am, being a citizen, creator of individual knowledge, becoming a true individual in the monoculture of the professional context and therefore enriching the process of inclusion.

2.4 ROLE OF DESIGN

It is essential that experts and non-experts start cooperating in these transdisciplinary settings with its fluid boundaries, as it will develop urgently needed new knowledge. Do designers have a role in this? What is the role and expertise of designers in these transdisciplinary setting or city labs? Design has the potential to bridge the gap between experts and non-experts with knowledge and ideas because they are skilled in visualisation

and have the imagination to translate ideas for, for instance, their clients. The change makers can contribute by having radical ideas, but those ideas need to be understood by the experts, designers can translate these ideas. Designers Diana Krabbendam (designer and co-founder The Beach¹⁰) stated in an interview with Fuad-Luke in 'Agents of Alternatives – Re-designing Our Realities ' (Fuad-Luke, Lisa-Hirscher, Moebus, 2015), that "organisations are often not capable of adapting to such radical new things easily... the designers [are skilled] in linking to the business world." (Fuad-Luke, Lisa-Hirscher, Moebus, 2015, p.299-300)

Designers can diverge between 'making', 'thinking', and 'feeling', which gives them the capacity to be able to diverge between scales, systems, methods, and positions. Designers, therefore, have the ability to critically reflect on these various systems because by taking different positions. In that interview, Krabbendam pointed out that this is an emerging new role for design. "We are in the process of transformation, it goes so fast. I think it is important to be critically reflective all the time... so it is a role to take." (Fuad-Luke, Lisa-Hirscher, Moebus, 2015,p.309)

Designers have the expertise to catalyse change, because they are skilled in making visions tangible. They can do so by actively contributing to and experimenting with these ideas and this gives a tangible (materialized) canvas in which change makers can operate. Experimenting and acting upon these 'alternatives' can disrupt current systems. According to Fuad-Luke, "alternatives that create friction, generate friction, and gain genuine traction to change the present." (Fuad-Luke, Lisa-Hirscher, Moebus, 2015, p.476) The possibility of design in materializing the non-existent possible positive future and to experiment in reality with different scenarios creates a new narrative that runs parallel to the current situation. Fuad-Luke argued that "design activists can offer a potent contribution to developing counter-narratives, counter-dialogues, and counter-actions which reframe every day problems as possibilities." (Fuad-Luke, Lisa-Hirscher, Moebus, 2015, p.289)

10 the beach: Social engaged Design Lab. At the core of The Beach' activities is designing situations that allow for the shaping of new meanings and new relationships. (<https://www.thebeach.nu/en/page/356/the-beach>, accessed June2017)

CONCLUSION

Designers play an essential role in transdisciplinary cooperation due to their expertise in visualisation, materialization, possibility to critically reflect and their ability to fluidly move between roles and scenarios as it connects various stakeholders. Design as a profession is operating on the fluid boundaries in these settings and therefor has a potential in addressing ecological issue's. In the next chapter I will elaborate on the consequences of these fluid boundaries for the professional standard in general and specific for design and what then can be expected from the design field.

2.5 CRITICAL FRAMEWORK ON THE CHANGE MAKERS

What are the consequences of the fluid boundaries between Pro-Ams and experts in general?

CRITICAL FRAMEWORK

Keen (digital entrepreneur and author) described the downside to the development of fluid boundaries between professional and amateurs in 'The Cult of the Amateur: How Today's Internet Is Killing Our Culture' (Keen, 2007). He argued that the knowledge, produced on the Internet by the wisdom of the crowd (the amateurs), lacks critical validation. For instance in regard to the profession of journalism, "every post is just another version on another person version on the truth, every fiction just another version of another person's version of the facts.". This validation (as a critical framework) is embedded in academic education. He described the danger of downgrading the professional field itself if knowledge is more and more produced by amateurs rather than in an academic setting, and that "talent, as ever, is a limited resource..... nurturing talent requires work, capital, expertise, investment." This talent should be created by professional education. He advocated for a critical evaluation of the professional field itself to deal with the, as he called amateurs, 'Amateur Monkeys' and to be aware of pitfalls. "These days, kids can't tell the difference between credible news by objective professional journalists and what they read on joeshmoe.blogspot.com." (Keen, 2007, p.3) The recent use of term 'alternative facts' emphasizes this development.

The continuing change where amateurism and professionalism fluidly merge into each other is happening in the wider perspective; this causes a friction that becomes visible in for example discussion around Uber or Airbnb. The discussion around how a critical framework can be implemented is interesting to bear in mind when viewing the 'changing role of the designer'. Keen is very sceptical and thought that this critical framework could only be developed by professionals themselves in order to distinguish them. Leadbeater and Miller thought that this critical framework is developed mutually by professionals as well as Pro-Ams. "Professionals are more likely to understand the theory behind good practice, while Pro-Ams might have strong know-how and technique... The relationship between amateurs and professionals is becoming more fluid and dynamic. It is not a zero-sum game. Professionals and Pro-Ams can grow together." (Leadbeater and Miller, 2004, p.23)

CONCLUSION

There is an urgency to debate this critical framework. It can't be trusted within a fluid mechanism in a mutual understanding between professionals and Pro-Ams, as Leadbeater and Miller argued. This leaves too much space for 'everybody has their own truth' and 'the mass is right' or even 'alternative facts'. However, the potential, the urgency, and the growing reality of fluid boundaries between professionals and Pro-Ams can create opportunities when they start cooperating within transdisciplinary settings, as mentioned in the previous chapter. These fluid boundaries are essential to overcoming our ecological issues. There is, therefore, an urgency to start implementing a critical framework that doesn't ignore the existing fluid boundaries. This should be developed within the professional arena, starting with education.

2.6 EXPECTATIONS OF DESIGN

How does this discussion reflect on the context of design /design education?

Design as a profession has become a mentality that can be applied in various fields. Nowadays, design belongs to the field of design management, social design, service design, design thinking, etc. There is potential danger in the devaluation of the professional standard if it doesn't

create a redefinition. Designers lose their specific knowledge and skills (materials, techniques, manufacturing, colour, etc.) if they are also educated at the academy in design thinking, social design, service design, etc. Design academies should be very careful in educating 'multidisciplinary' designers rather than expert designers.

Lucas Verweij (design critic) is very sceptical about the role design has in addressing wicked problems. He claimed that the design profession should be very careful in stepping into new territories if expectations aren't well considered. In 'The First Deserter of Design' (Verweij, 2014), he argued that design does have a role to play, however "design is claiming expectations it can't deliver. It shouldn't make the assumption that design will solve the plastic soup or create a smog-free situation in China. And at the same time, is delivering graduated design students that have projects that dream of a better future but have no clue about industrial production processes and costs, or material and technical processes." (Verweij, 2014, p1.) Verweij warned against a 'design-bubble'; design can't solve all the big issues and shouldn't imply that it can. Design has a role to play, but a humble one.

This doesn't mean that design doesn't have the potential to operate outside the traditional context however. But it does require redefining the implications. Fuad-Luke called for a need for designers to get a grip on what this co-creation within design and its fluid boundaries implies for the design profession. "If sustainability is the most challenging Wicked Problem of the current era, then participation in design.. seems essential. ...designers need to get a firm grip on what it means for the design profession." (Fuad-Luke, 2009, p.143)

CONCLUSION

Reframing expectations of the design profession towards wicked problems, as Verweij argued, includes a responsibility for design education to educate expert designers (rather than multidisciplinary). It also includes defining a critical framework for the changing role of the designer. It is up to design education to define what (in many forms) this critical framework is and how it can be taught to future designers. In the next chapter I will suggest a possible framework.

2.7 PEDAGOGICAL FRAMEWORK

These circumstances surrounding the new practice of a designer who assumes the role of a Pro-Am within the setting of a city lab concerning ecological problems have a consequence for the pedagogical framework within design education.

Before answering the question of what this 'critical framework' is and its implications, there first needs to be an understanding of how to educate designers for this changing new practice.

"What usually happens in the educational process is that the faculties are dulled, overloaded, stuffed and paralyzed, so that by the time that most people are mature, they have lost use of many of their innate capabilities. ... If we alter the education process in such a way as only to help the new life to demonstrate some of its very powerful innate capabilities." (Fuller, 1962, p.4)

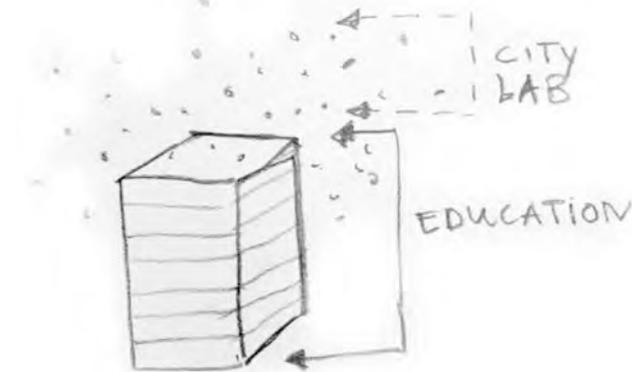
TRAINED TO BE EXPERTS

The notion of 'Pro-Ams' vs. multidisciplinary is relevant in the context of education. As Verweij stated, that designers shouldn't be educated as multidisciplinary designers, because otherwise it will hollow out the design profession itself is a true point. The designer is able to relate to these wicked problems because they are educated to be professional designers (specific experts in their knowledge field), including expert knowledge with regard to ecology. Future designers should be educated as professionals with ecology in their DNA.

LAB AS A PLACE FOR LEARNING

In order to adapt to the changing practice, students need to 'learn' how to become 'Pro-Am'. With regard to this research, Buckminster Fuller is an inspiration. In his view on education in the 1960s, 'experience' played a central role and could accelerate inventions that generated a sustainable future. He talked in 'Education Automation' (1962) about the innate capabilities humans have to learn and experiment in order to gain knowledge. Having a love (amator) for a topic is an innate capability we as humans have and nurture. #AMATEUR This innate capacity gets lost in design education. Fuller was connecting information/knowledge to a wide

audience (lovers/amateurs). A networked society could easily share information and create an increasing amount of knowledge, then connect this to academic education. This could accelerate inventions regarding ecology. He described the potential towards ecological issues as the fluid situation where the 'world' and the 'academy' merge into each other.



Education constructs Experts. City Labs facilitate becoming a Pro-Am in a new field of interest through experience-based learning to. Drawing Piscaer May 2017

Rancière called the situation of learning outside the institutional framework 'universal teaching'. He argued that if the 'ignorant' is "emancipated, he could conduct the education of his children, without the aid of any master explicator and—one could teach what one didn't know." (Rancière 1991, p.15-18) #AMATEUR This 'universal teaching' is needed in order to create the urgently needed unique individual knowledge where the 'learned' and 'the ignorant' are equally valued.

Learning networks (city labs) can be considered as learning outside the institution and have the pedagogical framework of 'universal teaching'. However, in order to allow students to have this as a canvas, they need to be 'emancipated'. This 'emancipation' could be implemented in a critical framework and applied within design education.

CONCLUSION

The academy should educate for expert designers with an ecological mindset in their DNA. In addition, it requires adding a fluid boundary between the academy and 'the outside world'. This means opening up the academy to 'the others' and actively facilitating students to go and experience 'in the

world' within a setting of a lab. It creates a canvas for 'universal teaching'. The academy should play a vital role in creating learning networks /labs in co-creation with society. The academy should incorporate a critical framework into its curriculum.

2.8 CRITICAL FRAMEWORK: LEARN TO UNLEARN

So what is this critical framework and what are its implications? This framework should be incorporated within the professional design context. In order to allow the critical framework to be part of the professional design context, it should be applied within education. 'Learning to unlearn' is a method that creates this critical framework. For this thesis I will test 'learn to unlearn'. But first I will need to define the method 'learn to unlearn'.

CRITICAL FRAMEWORK

Addressing ecological issues requires being an expert as well as a Pro-Am in a new topic. This demands to have learned 'unlearning'. The embedded knowledge and routines existing in the expert context prevent deviation from those frameworks, and therefore prevent one from becoming a Pro-Am in a new topic. It is important to unlearn routines and embedded knowledge.

Fuller used the notions of learning and unlearning as pedagogical tools in his lessons. This is relevant when it comes to dealing with wicked problems. He argued that we could only understand the new if we unlearned everything we've accepted and learned. "The frontiers of science are such that almost every morning, many of our hypotheses of yesterday are found inadequate or in error. (...) If a capable student wants to become a front-frank scientist, he has to be able to unlearn everything he has learned." (Fuller, 1962, p.4)

In order to understand synergy and ecology, we must get rid of our 'automated' frameworks and knowledge. "None of you is consciously routing the fish and potato you ate for lunch into this and that specific gland to make hair, skin, or anything like that. ...All of this is automated, and always has been. There is a great deal that is automated regarding our total salvation on Earth..." (Fuller, 1969, p14)

Annette Krauss (artist and researcher) reviewed routines in 'Site for Unlearning' at Casco¹¹, as well. In order to appreciate and revalue these routines they first need to be understood. She used 'unlearning' as a method of understanding them.

Rancière's notion of 'understanding' is about getting rid of received images and routines. Reflection on the 'learned' and 'the ignorance' creates a possibility of 'understanding' as he called it, the conquest of new territories'. "To understand this, we must rid ourselves of received images.... be removed from his routine. ... It is about recognizing that there are not two levels of intelligence, that any human work of art is the practice of the same intellectual potential. ... What is possible is reflection." (Rancière 1991, p.36-37) He argued for a need to have learned 'critical reflection'. In my view this is a part of the method 'learning to unlearn'.

METHOD

The process of unlearning isn't linear. I consider it to happen in constant flux, as an individual process using methods of imagination, reflecting, zooming in and out, critical observations and connecting it back to reality. The essay 'Unlearning: A Duologue' in 'The Pedagogics of Unlearning' (Fradenburg and Joy, 2016) described the method as "To diverge rather than undo." Unlearning is an instrument of critically reflecting on conditional knowledge. This can be done by "... methodologies—a range that includes critique and creativity, analysis and immersion, learning and unlearning. The classroom is an ecology, but like all ecologies, infinitely enmeshed in many, many others..." (Fradenburg and Joy, 2016, p.155) #BLURRING REALITIES

CONCLUSION

Learning to unlearn is a pedagogical tool that should happen in constant flux. It is not a linear process, but an instrument for critically reflecting and speculating on both the 'learned' that belongs to the expert's knowledge and skills as well as the 'ignorant' or amateur skills and knowledge. It is about critically/reflectively re-examining what is learned. It is deconstructing the build up of embedded (conditional) ideas and knowledge. Learn to unlearn gives therefor shape as a method to the critical framework and needs to be implemented in the curriculum.

¹¹ Casco - Office for Art, Design and Theory - is for artistic research and experiments that are cross-disciplinary... (<http://casco.art/casco-case-study-2-site-for-unlearning-art-organization-0>, accessed May 2017)

2.9 CONSEQUENCE FOR DESIGN EDUCATION

What is the consequence for the pedagogical framework within design education? This thesis doesn't give an answer as to the specifics of what should be adjusted or changed in the curriculum itself, since these differ very much from academy to academy.

WHAT

This research shows four elements that are important to consider. First the academy should educate for expert designers with an ecological mind-set; ecology should be in the DNA of design. On top of this it requires for the academy to open up to 'the others'; to society. And they should play a vital role in supporting learning networks in co-creation with society. These learning communities could be regarded as a form of city lab (or be inspired by it). Lastly the pedagogical framework 'learn to unlearn' gives shape to the critical framework and should be implemented into the curricula.

"You never change things by fighting the existing reality. To change something, build a new model that makes the existing model obsolete."
(Buckminster Fuller)

HOW

These elements can't be developed within a design educational system by simply adding them to the current curricula. This requires a drastic adjustment of the current situation. 'Ecological Literacy in Design Education.' (Boehnert 2015) and 'Design Activism: beautiful strangeness for a sustainable world' (Fuad-Luke, 2009) described the unanswered ability of academies to include ecological literacy in the current curriculum.

First, design education has a responsibility to educate students that have ecology integrated into their future design practice. Ecological literacy should be in the DNA of design academies. According to Boehnert, design education has a "responsibility to ensure that students graduate with an understanding of the consequences of unsustainable design and the skills

to do something about it. ... This task will only be possible when supported by ecological literacy." (Boehnert, 2015, p.1)

There is a friction between the urgency of ecological literacy and the lack of implementation in design education. Implementation still remains very marginal. Boehnert claimed that is still the case. "Since ecological learning disrupts and challenges educational cultures and assumptions about what constitutes good design, there has been institutional resistance to the idea..." (Boehnert, 2015, p.1) This notion is also described by Fuad-Luke. "There is a growing need for new design heroes and heroines to provide some guidance to meet the enormity of the scale of the environmental, social and economic crises in the global, and regional/local, economies. ... the silence from wider design education and practice communities is notable." (Fuad-Luke, 2009, p.49-50)

Second, design education does not recognize the implications of ecology as a wicked problem, because this requires a different implementation. Ecological literacy cannot, as Boehnert argued, be implemented "in a token 'green week' fashion. Nor is it adequate for ecological literacy to be an elective that staff and students can decide to ignore." (Boehnert, 2015, p.1) The complex nature of ecology means that it has an impact on various scales and levels within design education and subsequently demand implementation on all these various levels.

CONCLUSION

Ecological literacy should be in the DNA of future design students. Implementing this requires changing the current system on various levels and scales. This inability of design education to 'act' raises questions: can the 'learning network' (city lab) catalyse a change regarding this from the outside in? Could the lab be a supplement to education in which implementation of ecological literacy can be experimented with? Should education unlearn behaviours and habits that are embedded into the current design curriculum?

2.10 CONCLUSION

The ecological issues require inclusive transdisciplinary cooperation. A city lab provides a 'safe' and tangible ground for experimentation and the development of the urgently needed individual unique new knowledge, where all participants are experts and amateurs at the same time. Because ecological issues affect social problems as well, it means that the process is just as important as the outcome. The process builds social capital, glues a society, and creates a wider understanding of the others. Designers take on new roles in these changing design practices and have an essential function within a city lab in their expert position as well as their Pro-Am position.

Emerging fluid boundaries can create urgently needed new knowledge, if they bears in mind a critical framework that responds to what is otherwise a hollowing out of the professional standard. The response of design education is urgent, as it should implement ecological literacy into the curricula and educate for expert designers with ecological literacy in their DNA, as well as a critical framework that allows future designers to critically operate in the fluid boundaries of the profession and be an expert as well as a Pro-Am.

This critical framework uses the 'learn to unlearn' pedagogy because it contests the embedded knowledge and routines that prevent attempts to break out of existing boxes within both the professional and Pro-Am contexts.

3 FIELD RESEARCH

In this chapter, I present the field research in order to discover the circumstance of these new design practices and the consequences for design education. I will elaborate on my findings of the case studies on city labs, interviews with designers that operate in these labs as a Pro-Am in a new topic. I will also elaborate on the skills and competencies these designers need for these new practice by interviewing the designers. Lastly I will reflect on this collected data with design education; students as well as educators.

3.1 INTRODUCTION

The theoretical framework described the urgency for a designer to become a Pro-Am in other fields in the context of transdisciplinary cooperation and the implications for design education.

REFLECTION: PRACTICES

Does the theoretical framework connect to the reality of design practices? I conducted two case studies and interviewed designers in the city labs to reflect on and gain an understanding of the circumstances of these practices and which skills are required.

REFLECTION: DESIGN EDUCATION

The theoretical framework described the implications for design education, but understanding how it can be applied required reflecting on the theory with design education, first with students, since they are educated for these design practices, at the Master Eco and Social Design at the University of Bolzano, second with design educators in the HOT programme: 'education in labs, communities of practice and stations'

TEST APPLICATIONS: DESIGN EDUCATION

To understand the applications and implementation of the pedagogical framework in design education, it is important to have tested the learn to unlearn framework.

3.2 CASE STUDIES

This research examined two case studies: the 'Stadslab Luchtkwaliteit' city lab and 'Zero Footprint Campus'. What are the circumstances of these city labs?

INITIAL START OF THE LAB

-Stadslab Luchtkwaliteit:

Stadslab Luchtkwaliteit started organically. In 2014, the municipality of Rotterdam issued an open call to locals for ideas regarding the bad air quality in Rotterdam. Locals (experts, non-experts) started to share ideas and knowledge and decided to join forces because of a lack of response by the municipality after the open call. 'Stadslab Luchtkwaliteit' started as a city lab in order to catalyse a change and improve the ideas and designs.



Ideas for improving the Air Quality vary in the Lab. For example, experimenting with the effects of plants and moss on Air Quality. Image Source: <http://www.resilientrotterdam.nl/en/initiatieven/city-lab-for-clean-air/>

-Zero Footprint Campus:

After an initial, two-year cooperation with individual projects, Cynthia Hathaway (initiator of the lab and designer) and Melle Smets (initiator of the lab and artist), along with Utrecht University and its campus, decided to upscale. They invited other artists to realize artistic research at the campus and connect science to art.



Start Zero Footprint Campus; Barn Raising 11 October 2016; Build up of the Department of Search-pavilion. Image source: <http://www.zerofootprintcampus.nl/2016/10/14/paviljoen-department-of-search-is-gehesen/>

COOPERATION IN AND BEYOND THE LAB

Because of its unintentional character, **Stadslab Luchtkwaliteit** has engaged a wide variety of people who vary in age, educational background, and profession. This hybridity also has an impact on the network and cooperation with external partners. Kirsten Kentler (member of Stadslab Luchtkwaliteit, interaction designer and design educator) described the importance of a wide variety of people operating in the lab because it allows for different opinions and therefore also for critical questions that aren't asked in a uniform expert environment. "The notion that we disagree with one another in the lab makes me question more. So I call the experts. But it is easier to connect to them and get an appointment with a bigger group of people." (Kentler, 2017) Marieke de Keijzer (initiator Stadslab

Luchtkwaliteit and landscape architect) described the lab as an independent context in which cooperation creates a canvas for reflection that can ask critical questions to the outside world. "I get the input from people and Internet. But this requires me to be trained, to be very critical. It bothers me that a lot of people hear and read stuff about dust, for example, and simply accept it as the truth." (De Keijzer, 2017)

Zero Footprint Campus has a core of expert artists working together with expert scientists from the university. In this cooperative process, 'the others' are deliberately integrated. Cynthia Hathaway included, for instance, 'others' such as amateur felters in her project, 'Sweat(er) Shop'(see appendix). In the project, a community of students, hobbyists, and academics felt a new university sweater with wool from local 'campus' sheep. She curates unconventional cooperation. She describes this process as a strategy to create 'disruptive interventions'. She sets up the circumstances for co-operation and designs the process. "This can't be developed on a drawing table and it isn't mouldable. It is action research", she explained, "to put things into a 'space of reality, daily life', and to respond to the given feedback. This can only be done if you have taken the time to know the people and know your way around." Her description of the process affirmed the importance of a tangible purpose as explained in chapter 2.3.

COMMON PURPOSE IN THE LAB

The topic of **Stadslab Luchtkwaliteit** is very specific: air quality. This makes it possible to transcend various boundaries and differences. Marieke de Keijzer explained that simply having a common interest isn't sufficient for creating solutions for bad air quality as it leaves too much space for only talking rather than acting. Getting to solutions require cooperation in various levels; talking, doing, reflecting etc. It requires being able to be specific as well as a generalist in order to develop this common interest into a fruitful cooperation. She explained that, because she is a landscape architect, she has a broad perspective and can therefore recognise commonalities as well as what can be gained from cooperation.

Zero Footprint Campus has a strong ecological vision. The initiators are very much aware of the importance of a commonality of purpose. Cynthia Hathaway 'united' in quite a few projects amateurs to experts. This experience made her realize the importance of what she calls a 'commonality of purpose' and that it isn't evidential to find. There is a role for designers to play in allowing people to find this commonality. She explained that it requires understanding your role, and that you can be

instrumental. And emphasized acknowledging the 'hobbyist' in the process, and that she sees her role as opening the façade of the expert to 'the others'. She underlined the importance of the role of designers within cooperation's.

Designers can also facilitate in materializing the common ground for people in order to find and discuss their common purpose. Guido Marsille (member of zero Footprint Campus and designer) is experimenting with 'Van Blankensteyn' Soapmaker within the Zero Footprint Campus. I consider him a Pro-Am 'chemist'. He is developing organic soap, including its factory, using local food waste as ingredients (see appendix). The project is developed together with students and scientists from the campus. He started the project by sharing his washing machine with others and creating a physical 'washing' space people could use, resulting in people talking to each other and finding common interests due to the materialized washing space.

NON-EXPERT ATTITUDE OF THE LAB

In the research, I discovered that both city labs use the notion of 'being a non-expert' as an attitude of the lab. Members of **Stadslab Luchtkwaliteit** have an open and critical curiosity. The lab questions and experiments instead of giving answers and therefore never claims to have THE solution. Because they are not purporting to have the answers, it creates an open space for expert air quality institutions to think differently; it opens up new possibilities, new knowledge, and new connections. Kirsten Kentler for example plays with insecurity. She understands that her naïve questions can be valuable for the experts, but she can only ask them if she is really informed herself. She said that kind of "insecurity is liberating but constraining at the same time" in a design process. But by being aware, it can be instrumental. "It is good to realize the importance of insecurity. ... are my questions not naïve? After I gained a huge amount of knowledge, then I was able to ask these naïve questions again. ... My role as a designer is to realize that these naïve questions have a huge value, and is an import attitude." (Kentler, 2017)

The urgency of ecological issues demands a wider perspective to generate better questions and new knowledge. This needs to be provoked. **Zero Footprint Campus** is, for example, proposing the 'this leads to nothing' idea; this allows for 'search' rather than 're-search'. They very deliberately use the idea of generating 'no result', but 'just doing something', 'working on nothing important'. This notion is used as a radical-design on all graphic elements for example at their website.



Twelve artists are conducting artistic research at



-website Zero Footprint Campus- source:
<http://www.zerofootprintcampus.nl/en/> April 2016

CONCLUSION

Both city labs provide insights into the circumstances of the city lab and can be an inspirational base for design education to understand how they could play a vital role in creating learning networks in co-creation with society. The following circumstances are important to consider: First the process is important and could be considered to be a product, as well. Second designers are able to guide the processes and unite people in

finding their common purpose in order to cooperate; they play an important role in the lab. Third tangible topics create a common purpose and designer can materialize these topics. Lastly managing expectations in the lab (claiming to be a non-expert) is important, because it allows the outcomes to be beneficial, critically question, link unusual 'suspects', and therefore provide the setting for new knowledge creation.

3.3 INTERVIEWS

In the interviews, the dialogue covered the required skills and competencies needed for the changing practices of the designer. This is relevant because it informs design education, defining which skills need to be taught to future designers.

CURIOUS

In all of the interviews, curiosity was mentioned as one of the most important skills. It could be considered to be a continuing process – not only curious about new topics but also about the process of working, context, new roles, etc.

OPEN

Openness is regarded as an important attitude. Marieke de Keijzer described it as a necessity to learn: "I do have the willingness to learn and have an open attitude on new topics." (de Keijzer, 2017) Kirsten Kentler talked about openness and insecurity as a way of connecting to people. This is relevant within the design process in order to be able to ask critical questions. Openness engages designers with wide variety of people.

Open attitudes allow listening to one another. This benefits inclusive, transdisciplinary cooperation as experts and non-experts start to listen to each other. Cynthia Hathaway described the 'openness of linking the unusual suspects' needed in order to bring people together. She emphasized the importance of being vulnerable in this process. In her view, openness and vulnerability belong to each other.

Christina Ampatzidou described the urgency of openness. "Cities bring together people that do a lot of great things. There is urgency because cities become more exclusive, losing diversity that made them great. There is a need to bring back inclusivity. Amateurs help to think in a different way. A luxury that is lost within professionalism: lots of openness..." (Ampatzidou, 2017)

POSITION

In the changing practice of the designer, you have to take on new roles and operate in new contexts. There is an importance to understanding your position. Cynthia Hathaway described it as "knowing where you are in a certain context, understanding your role, you can be instrumental," and what you can contribute: 'the importance of a small change'. (Hathaway, 2017) Guido Marsille said that understanding his position developed during his career. "The way my career developed is also due to age. It took me years to create the wisdom and learn. It's an organic process." (Marsille, 2017)

CRITICAL

As a designer operating in these labs, engaging with complex ecological issues requires being critical. Marieke de Keijzer argued for the urgency of critically questioning things and that this belongs to the role of design as mentioned in Chapter 3.2.

DISRUPTING

Dealing with ecological issues and experimenting in city labs with alternative visions requires disruption of the current systems. This is a skill that can be trained. Designers have the ability to disrupt a system from within as they are used to working within a system rather than outside of or against a system. Cynthia Hathaway called this ability from design "to be able to disrupt from within" in contrast with the position of artists that can disrupt a system from the outside. She mentioned that designers can learn from artist as they are often more radical.

INDEPENDENT + RISK

Designers have their independent businesses. This creates the possibility to respond quickly to new situations and take more risks. "I can do that because I'm an independent practitioner. This means if I see an interesting business opportunity or if I see an urgency to work on a specific topic, I can react very quickly. I do not need to take care of a big and slow organization." (Marsille, 2017)

ZOOM IN AND OUT

Lastly, the ability to 'zoom in and out' was mentioned as important; being a generalist as well as having specific knowledge. This ability is important in order to be able to diverge between scales, methods, and beliefs. Christina Ampatzidou described this as the ability to think "in $1+1=2$, but also 3 or 4 at the same time." (Ampatzidou, 2017) The whole of individual parts can become more in the total composition by its interconnectedness.

CONCLUSION

These skills and attitudes seem relevant within the traditional design context, as well, to have an open or curious attitude, for example. But the total composition of all these skills is needed for these changing practices. In other words, $1+1=4$. The combination of the set of skills (open, curious, critical, disrupting, independent, understanding your position, taking risk, zooming in and out) is more than the sum of the individual parts; it creates a canvas to be an expert designer as well as a Pro-Am in another field within transdisciplinary settings.

3.4 REFLECTION WITH THE FIELD

I reflected upon the theoretical framework within design education, with both students and design educators.

DESIGN EDUCATION: STUDENTS

The reflection happened during the 'Crossing Boundaries' seminar at the Master Eco and Social Design UNIBZ Bolzano. The students named the urgency for designers to be involved in addressing ecological issues in inclusive, transdisciplinary settings with non-designers ('complementary relational designer'), because a changing planet and society, with growing levels of complexity, can't be addressed by a single discipline anymore. This requires working on flexible scales, from micro to macro. It involves recognizing the possible scope of design. Design has the capability to link

these scales with new contexts by storytelling and finding other (visual) narratives.

The Master students conduct practice-based research, including a project, in a set period of time. The process is an important aspect of this. They recognized this as the most difficult part. How to get in contact with people, how to engage people into their project? How to make their project into something that matters to a community? Designers can contribute to these changing practices by 'designing' the process (and not only the outcome). The topic air quality at 'Stadslab Luchtkwaliteit' questioned the 'commonality of purpose'. In order to be able to include the non-experts in the process, it is simply not enough to have a common purpose that only engages with 'the happy few'. Air quality is a topic that engages with a wide variety of people (everybody breathes). This opens up the co-creation process to more people. So it is important, for example, to understand how exclusively or inclusively the topic engages with 'the others'. Discussing the design role of designing a process in these transdisciplinary cooperation's made me aware that it is possible to learn how to design a process but that the complex nature of designing a process makes it difficult to teach this within the framework of design education and rather needs to be learned in the outside world. A lab can facilitate a 'safe' ground for students to acquire these skills.

Fuad-Luke showed ongoing work with the 'Make Yourself..' project ¹². He explained the complexity of involving non-experts "complementary relational designer' (Fuad-Luke) into a process and addressed the notion that the process of co-creating provides a rich context. For example, in 'Make Yourself...', designers, locals, and migrants co-create fashion, and in the process they exchange values, cultural traditions, and ideas about a sustainable world. This enriches not only the ideas regarding fashion, but also builds 'social capital' (glues the society) due to the collaboration between the different cultures.

¹² A design research project in Bolzano Italië: Make Yourself... is a series of events focused on co-creating fashion, a 'makerspace', and pop-up shop by and for everyone (designers, locals, visitors, migrants, and refugees). <https://modeuncut.com/2016/12/15/seminar-disruptive-fashion-practices/> (accessed June 2017)

DESIGN EDUCATION: EDUCATORS

This research was part of the HOT program, 'education in labs, communities of practice, and stations' at the Readership Creating010.

In their educational practice, both Leo Remijn and Peter van Waart (associate professor/researchers Institute Communication, Media and Information Technology; HOT) experienced that students sometimes seem to lack intrinsic motivation. According to them, intrinsic motivation is the core competency required in order to start learning. This raised the question of how the intrinsic motivation could be regained. Leo Remijn noticed that students never seemed to lack this motivation in the maker space 'Stadslab' ¹³. This made me question whether a lab (for example a city lab) can facilitate in regaining (or maintaining) this intrinsic motivation within education. The discussion about intrinsic motivation in the context of this research revealed that, currently, there is a friction between the 'professional' (as an expert) and the 'amateur' (as having a love), in education. I think it shows the importance of connecting the professional and the Pro-Am (to learn how to be a Pro-Am), because by embracing this, students are better equipped to learn how to maintain intrinsic motivation (and become better professionals).

The HOT session in May 2017 involved 'monitoring'. In the context of this research, I asked: "– If design students start learning in a City Lab, what are the implications for monitoring?", posing Rancière's statement that 'universal teaching' could be possible as long as there is 'emancipation'. Marlies Bedeker-Van der Wee (researcher at the University of Applied Science Rotterdam, HOT) reflected on this statement and pointed out that monitoring could be a moment of reflection (peer feedback) and helps to understand the learning process rather than measuring the content. "Do we measure what we value, or do we value what we measure?" (Marlies Bedeker-Van der Wee, 2017) Does 'learning in a city lab' imply a different role for the teacher, then, where the teacher is not resource of all the required information, but a coach guiding an individual learning trajectory? Anne Nigten (Lector of Design for Network Ecologies at Creating010) proposed a learning community as a commune of students and teachers, both moving along the boundaries of 'education' and 'the lab'.

This requires drastic changes of the curricula, because it can't be added to the existing situation, it requires a systematic transition.

¹³ Stadslab is a maker space of the University of Applied Science Rotterdam that combines the Fablab, Open Data lab, and a Sensorlab.

Designers for example need to learn how to design a 'process' rather than only the 'product' (outcome), this has implications for the current methods of 'monitoring'. And also changes the position of the educator for example; currently the teacher is regarded as 'the resource' of information, and monitors if students are able to generate that 'good outcome'. Van Waart noticed that this is a wicked problem itself. Remijn talked about the possibility for this transition through 'pilot projects'. Labs could facilitate this experimentation with pilot projects from the outside in.

The HOT discussions made me aware that design education needs to actively engage in facilitating labs as it allows students operating in the fluid boundaries of their profession. Since city labs could provide a canvas for students to maintain intrinsic motivation, it could provide a learning community for both students and educators into the 'real world', and a safe ground to experiment with new applications for educational changes.

CONCLUSION

Reflecting with the students from the Master Eco and Social Design as well as reflecting with educators with the HOT context made me aware of the complexity of implementing the required changes needed for educating these future designers in these new practices. For example the consequences of learning to design a process rather than a product requires a different role for the teacher (as a coach versus a resource of information), learning to design the process requires a different learning context (not within an academic structure but rather in the real world) and it has implications for monitoring a learning trajectory (monitoring as a moment for peer feed back rather than measuring content).

3.5 CONCLUSION

The interviews, case studies, and the reflection with the field provided detailed information on the practice of designers in a city lab as well as the current response of design education for these practices and what will be needed for the future. It revealed the urgently required design skills for these practices, (like openness, curiosity, etc.). It clarified that students need to be trained as experts in designing the process as well as the outcomes.

The field research showed the complexity in design education answering these needs for change, as it will have a drastic and systematic change on the curricula. It has implication for the role of the educators where they are coaches and part of the learning community with the students and, both moving along the boundaries of 'education' and 'the lab'. It changes the nature of monitoring in moments for peer feed back rather than measuring the content. However there is a possibility if design education starts with actively engaging in labs, in co-creation with society. Labs create 'pilots' or 'safe' ground that allows change to be implemented.

4 EDUCATIONAL PROJECT

In this chapter I will elaborate how I gave shape to the critical framework learn to unlearn, by developing and testing a workshop GO TO THE MOON AND BACK. I will also reflect on the workshop and connect my findings to the wider scope of this research.

GO TO THE MOON AND BACK

The critical framework learn to unlearn (mentioned in Chapter 2.8) requires testing if, and under what circumstances, you can 'unlearn'. In order to find the parameters for a format that enables 'learn to unlearn', I brought together different elements. I took these elements from previous educational experience, 'Pirate meets Adventurer' #PIRATES (see appendix), and the 'Transdisciplinary Research & LABs. Tools to Hunt for Tools: The Artist/Designer as Contemporary Hunter/Gatherer of Vital Alternatives?' workshop with Arne Hendriks. (see appendix) These workshops weren't set up as an experiment for this research, but by reflecting on it, I learned what to integrate into the educational project, GO TO THE MOON AND BACK. #GALAXY



GO TO THE MOON AND BACK at Piet Zwart Institute MAE.
Photo Ilse Leenders Dec. 2016

GO TO THE MOON AND BACK WORKSHOP

In the GO TO THE MOON AND BACK workshop, I took bachelor design students on an imaginary trip to the moon and back. Ecological issues demand that we experiment with alternative ideas. Those new visions require the ability to disconnect and re-connect to reality again. The moon provides a canvas to deconstruct embedded professional knowledge and routines, because the elements that we take for granted on earth are so different on the moon (gravity, time, oxygen, life, etc.), which makes it possible to completely deconstruct these embedded and fixed notions. The moon also allows us to reflect back on earth, therefore reconnecting to reality and making it possible to critically examine the elements that shape the professional context, like values, positions, scales, time, perspectives, etc. (see appendix) In the workshop, the process is important. The students need to cooperate in order to take 'the Space Shuttle' to the moon and back to earth. The tasks in the shuttle are very complicated and demand that the students have to leave their comfort zone and switch roles. They have to be 'astronauts'. They have to get into a different mind-set, that makes them able to think beyond the professional context, allows to think as an amateur.

The workshop has ecology in its DNA, for instance because by reflecting on earth you feel the interconnectedness and fragility of all things on earth (as the first image of earth -Chapter 2.1-was the first image to understand ecology), but also because there is only moon dust as a resource on the moon. It makes design students aware of what the 'material scarcity' on earth means, it also emphasizes the availability of the resources on the earth.

I tested GO TO THE MOON AND BACK, with students from the Design Academy Eindhoven and the Art Academy Utrecht (HKU) Product Design. Both groups consisted of 2nd year design students.

WORKSHOP

The workshop was adjusted to the specific context of the students and attempted to connect to their current assignments. Roughly the workshop GO TO THE MOON AND BACK is divided in eight steps. In this part I will explain the context and reasons for my decisions for the workshop.

Step 1: Find your routine. What task do you do everyday? For example: coffee at 10 in the morning? Go to the toilet. Start the day with mailing. Etc. Take this routine with you in your pocket in our trip.

About Routine: As a professional you develop routines by doing things (experience) over and over. As an amateur you didn't develop these routines yet. These routines are fixed notions that prevent to break out of current reality and prevent the creation of new idea's and knowledge.

Step 2: Put on a helmet. We will go on an adventure. You need a helmet to keep you safe



About Helmet:
I choose some strange hats, because I hoped by putting them all on, we all feel ridiculous, but we are in it together. In order to feel vulnerable but to trust each other. The hat's are also quite warm, it makes you feel to be in a different setting, and perhaps helps in imagining to be an Astronaut and take a different role.

Step 3: Choose a difficult task.



Complicated:
You have to choose a difficult task from that cockpit. By doing so you will forget about "the routine you just put in your pocket".

Step 4: Lets go.



Step 5: How does it work on the moon? Take the routine out of your pocket. How does it work on the moon with different parameters?



Deconstructing:

With taking the perspective of the different parameters (different gravity, no oxygen, other time frame etc.) on the moon, it makes you able to deconstruct the 'routines', or element that you take for granted. Routines and embedded knowledge simply work completely different under these different settings.

Step 6: Have a look at 'our spaceship earth'. Reflect on your findings by having a look at the fragile small earth.



Reflection:

What is the value of things? What is significant? What is essential? Understand the 'whole' interconnectedness of things on earth. The earth is an ecology. The distance creates this awareness and the ability to zoom out and reflect upon it, by simply not being part of it yourself.

Step 7: Lets go BACK!!

Step 8: Can you 'reconstruct' the routine you took to the moon?

Reconstructing:

I think the constant loop of learn-unlearn-learn is important in order to change something. By this way you connect visions to reality, and make the knowledge tangible.

Images used for the workshop at the HKU:



Leaving Earth from Utrecht at location 'de planeet' (the planet)



Arriving in Utrecht, Whilst looking to the Moon again.

EVALUATION GO TO THE MOON AND BACK

In specific at the HKU: First the workshop took place on a 'Monday' at the beginning of a new assignment. This made it difficult to connect the workshop to their context of the assignment and the academy. However they connected it to a more general position of design and how this affects their own position, this discussion was possible because they took the role of the astronaut themselves and therefore were able to disconnect from their design role. In the discussion the students talked about their role as future designers. What do they want their practice to be? By being on the moon it helped defining what other kinds of positions within design could be possible. Since on the moon there was no predefined context of what design 'should be'. It's about what design can contribute. This discussion on 'the moon' was very interesting in regard to current roles of design as the students regarded those roles very fixed and drifted away from the 'context' (the earth) it is positioned on. On 'earth' the students were able to connect the discussion about the possible roles of design to their own personal life's. This revealed their intrinsic motivation of wanting to be a designer. What triggers them in general? How do they work? What is the process? The discussion in my view was literally about the ability of switching roles (to be an amateur) in order to find an intrinsic motivation (amator) in the context of design. It reminded me of the cliché 'love you to the moon and back', and gave it a new context. The earth provided a canvas to zoom in on their personal reality. This is important because it reframed 'learning' and 'unlearning' as it questioned the embedded ideas about what design is or should be and the potential it has when these fixed notions are lost.

Specifics about the workshop at the Design Academy Eindhoven:

The workshop was done as a collaboration with Marina Martina Garcia. The topic of her lessons were 'Ecology'. This workshop fits that context. That made both this workshop as well as the other classes more effective. In the discussions with the students 'on the moon' we talked about abstract notions like time, space, scale. These notions are of importance to realize and 'disconnect' (unlearn) from as they determine our concepts and embedded knowledge that makes it otherwise difficult to understand ecology and the relationship of design toward it. Being on the moon allows to zoom out towards these notions. Back on 'earth' we discussed how these abstract notions (time, space. Scale) are really embedded concept that are not often enough examined within design. But that it urgently is needed in order to understand ecology and the position (or potential) design has in this.

I used specific images of 'returning to Eindhoven' (as the students study in Eindhoven, a city synonym for the lighting city) that showed the incredible amount of light that is produced each night in greenhouses, and used more references fitting the context of the students. Like the different concept of 'time' on the moon. (On the Moon one day is as long as a 'month' on earth)



1) Helmets on.



2) Take-off of the Space Shuttle: All students have an imaginary, complicated task to fulfil.



3) Reaching the Moon.



5) And we're back on earth!!



4) Looking back on Earth.



Reflecting on the workshop GO TO THE MOON AND BACK

IMAGES: Design Academy Eindhoven. Photo Marina Martina Garcia Feb. 2017

CONCLUSION

In both cases, the workshop was observed by the students' regular lecturer (Marina Martina Garcia, DAE, Kirsten Kentler, HKU). I received feedback from the students via their lecturer.

In general; I didn't expect to determine whether or not someone could unlearn something because of the ambiguous and complex nature of unlearning. However, I can conclude that in both cases, this workshop provoked a re-examination of reality and the position of design. It critically questioned the embedded elements that are fixed in the 'professional' context. By asking, 'why (on earth) is this so?', it created the possibility to think beyond the existing frameworks about 'what if'.

The feedback from both tests was that it needs a firm context. It can't be seen as separate from students' work, like assignments.

They also mentioned that the workshop needed the context of my professional background. In both cases, I didn't give any input about my work; this was felt to be lacking. GO TO THE MOON AND BACK needs to relate to some form of reality. It couldn't possibly stand on its own. It's not a standard solution to fix the system. It's an intervention on a micro scale.



image taken at the graduation exposition in TENT Rotterdam;
presenation of this research, photo: Piscaer June 2017

5 RESEARCH CONCLUSIONS

With this research I tried to diverge between realities and methods. The research question ‘What constitutes the practice of a designer that assumes the role of a Pro-Am within the setting of a city lab concerning ecology (wicked problem) and what are the consequences for design education?’ cannot result in one solution on one level. It rather results in enmeshed particles touching and connecting realities of “the real ‘real’ and the ‘unreal real” (Dunne and Raby, 2013, p.159)

Ecological issue’s demand new unique individual knowledge, that can’t be generated within the traditional ‘expert’ disciplines anymore. It requires transdisciplinary cooperation where all participants are experts and amateurs at the same time. In order to create beneficial new knowledge it needs to touch ‘reality’, this reality and ‘safe’ ground is provided by city labs. Designers (as experts and Pro-Ams) play a vital role in these city labs. They provide an open, informed curious attitude needed to start cooperative alliances. They have the power of visualising an imaginable future, connecting an unforeseen unreality to a possible ‘real’ future. These new alternatives are ‘matter’ (Rancière 1991, p.76) which can be dealt with by experimentation. Experimenting with alternatives in these labs makes it subject of uncertainty; and creates new knowledge. Fluid boundaries between Professionals / Pro-Ams as well as design education / labs have the potential of addressing the ecological issue’s and the creation of the urgently needed new knowledge. Design education should educate professional designers with an ecological mind-set in their DNA. Academies should also facilitate students to learn according to ‘universal teaching’ (Rancière, 1991) in labs to learn how to be Pro-Ams. But it requires an implementation of a critical framework (learn to unlearn), because otherwise it will hollow the professional standard. There is a responsibility for education to implement this critical framework. Educating future designers with an ecological literacy at the core of their expertise and trained with this critical framework and learn to be a Pro-Am’s in a new topic is essential. Implementing these changes could be regarded a wicked problem. This requires other forms of implementation. Fluid boundaries between design education and labs provide the possibility to experiment with different forms of transitions. A city lab could be a canvas to change education from the ‘outside’. The essential side effects of Amateurs, Pro-Ams and Experts working together, as it builds social capital, could also have a similar effect of uniting ‘society’ and institutions (education), if it allows fluid boundaries.

This research connects to a 'real' possible future, as it poses between the lines: What if we are not educating anymore for professionals in the context of 'workers'? If the automation is continuing and the concept of 'workers' becomes obsolete? Will we start educating 'professional amateurs'? Can education educate people to become a 'change maker'? What if the lab could be a supplement to (Academic) education; as 'school' has the etymological origin of 'skholē' (Greek): 'leisure time'? I'd love to end this thesis by mentioning that I'd like this input to be used by all 'the amateurs' in the world. Let all the small particles in this research disintegrate into something else. Lets allow it to become 'from dust to dust'.

6 POST RESEARCH

This research revealed the urgency to develop counter narratives on the fluid boundaries of the professional and amateur context. This made me decide to experiment with the possibilities within and after this research to find these counter narratives. I did this first by unlearning my own research and second by experimenting with a counter narrative alongside the official presentation of this research.



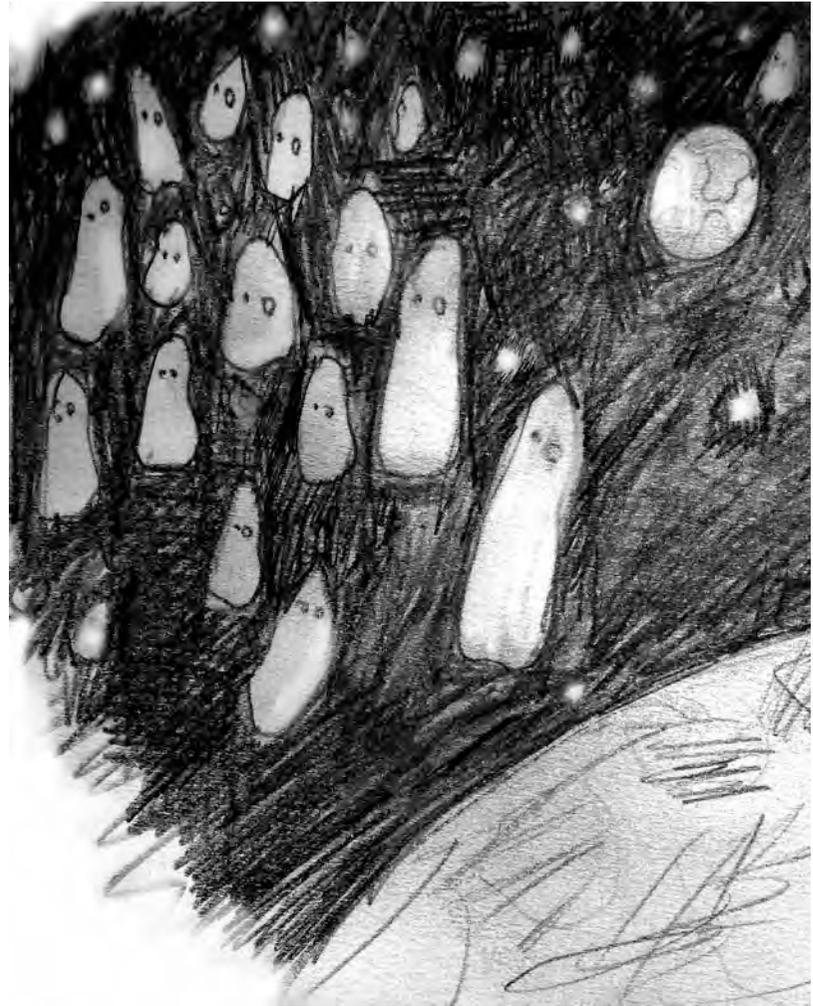
6.1 POST-EDUCATIONAL PROJECT

The GO TO THE MOON AND BACK workshop revealed the complex and ambiguous nature of unlearning. This made me question what happens during the process of unlearning. What new knowledge or insights does it generate?

I took this research to the moon and back. My process transformed into a narrative about the journey. I wrote down the story; called 'A counter narrative GO TO THE MOON AND BACK'. This fairytale could be regarded as the counter narrative to this thesis. The fable provided a 'safe' space for experimenting with concepts, notions, and elements that only appeared in the vacuum of this research and that I couldn't touch within my 'expert' framework. In other words, conducting research is about shaping solid elements. This is an active process that releases small particles of essential information; they are floating into the vacuum space as real 'material', but seem unable to exist within the professional context (of this research). Unlearning and operating on fluid boundaries re-connected to this information.

The story is being published as a counter narrative that is complementary to this thesis. This thesis is searching for the opaque, fluid boundaries and blurring realities between the 'real real' and the 'unreal real' (Dunne and Raby, 2013, p.159) that gives a space for the counter narrative to exist. I did this by creating references within the theoretical framework and educational project to my 'amators', which are 'dust', the 'galaxy', 'pirates' and 'amateurs'. These references are loopholes and a gateway to the 'A counter narrative GO TO THE MOON AND BACK'.

The main conclusion of my process of unlearning is that the absurdity of truly imagining being on the moon can propose radical new ideas because I am disconnected from the reality of my 'expert box'. This required taking risks, leaving the comfort zone, and trusting my innate capabilities. In this research I tried to become an expert with expert insights. However I experienced unlearning this thesis as well. There is a radical potential of new knowledge by conducting research as 'an amateur and an expert'. How can this be further explored within the academic framework? This will be a continuing journey for me to explore.



6.2 POST-PRESENTATION

"Do we measure what we value, or do we value what we measure?"(Marlies Bedeker-Van der Wee, 2017) This quote triggered my imagination. What if I could create also a counter narrative for the 'evaluation' that runs parallel to the official presentation for the Master Education in Arts and appreciated the moment of evaluation? Like the 'amateurs' embrace moments of measuring, as moment for celebration (by giving each other medals and trophies for example). In the context of studying the topic education and being a student myself and be a subject to monitoring and evaluation this was an important experiment because I played with the 'equality of intelligence' (Ranci re,1991, p.32) where merging knowledge only happens if both are equally valued. In order to value my 'expert' knowledge equally to my 'non-expert' knowledge I needed to create a moment for this. This process of 'equality of intelligence' allows for a moment of measurement to be turned into a moment of joy and celebrating?

I developed a ceremony to honour my peer students that joined in this adventure in the past 2 years of studying this Masters. I took the role of the Captain-Astronaut put on my red (astronaut) suit and honoured them with their well-deserved badges. In the ceremony they honoured me as well and allowed for me to officially become 'the expert and the amateur'.

I'd like to conclude therefor with stating: I'm an expert, I'm an amateur.





images Ilse Leenders June 2016

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Appendix: case studies, interviews, educational experiments

CASE STUDY 'STADSLAB LUCHTKWALITEIT'

Reference to Chapter 3.2

Here I show some of the different projects from city lab 'Stadslab Luchtkwaliteit' that I found relevant for this research.

1) Lunch at a high traffic street in Rotterdam in order to discuss the impact of fine dust on our health. By situating projects in 'the city' it connects to various other citizens.



photo Leon Richard Okt. 2015

2) StadslabLuchtkwaliteit organized several 'Expert' meetings about Fine Dust and invited both expert as well as non-experts. Top Image: meeting about 'Measuring Fine Dust' with amongst others experts on the topic like RIVM; Bottom image: 'Fine Dust and the impact on our health' at Erasmus Academic Hospital Lung Department including experts from various disciplines and non-experts.



photo Leon Richard 2015

3) Co-Creation session for making a 'Burgerbrief', a letter to governmental institutions with recommendations to improve air quality. The co-creation session was organized by Stadslab Luchtkwaliteit and included organisations with opposing opinions (experts as well as non-experts). Getting these opposing groups to join forces was possible because of the Stadslab Luchtkwaliteit members' 'open attitude'. It creates a 'safe' space for all participants to give their opinion and listen to others.

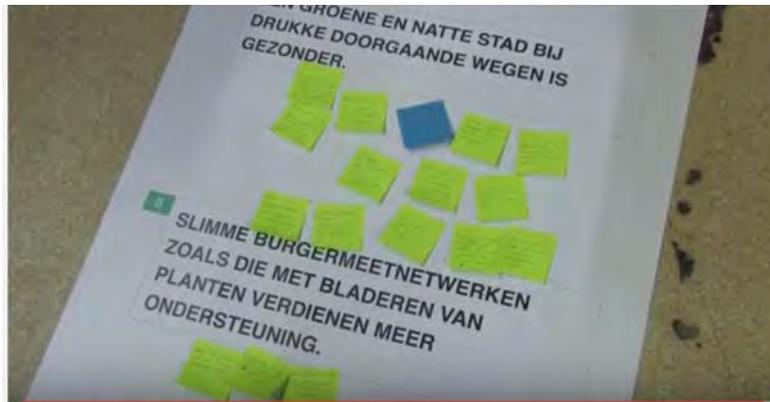


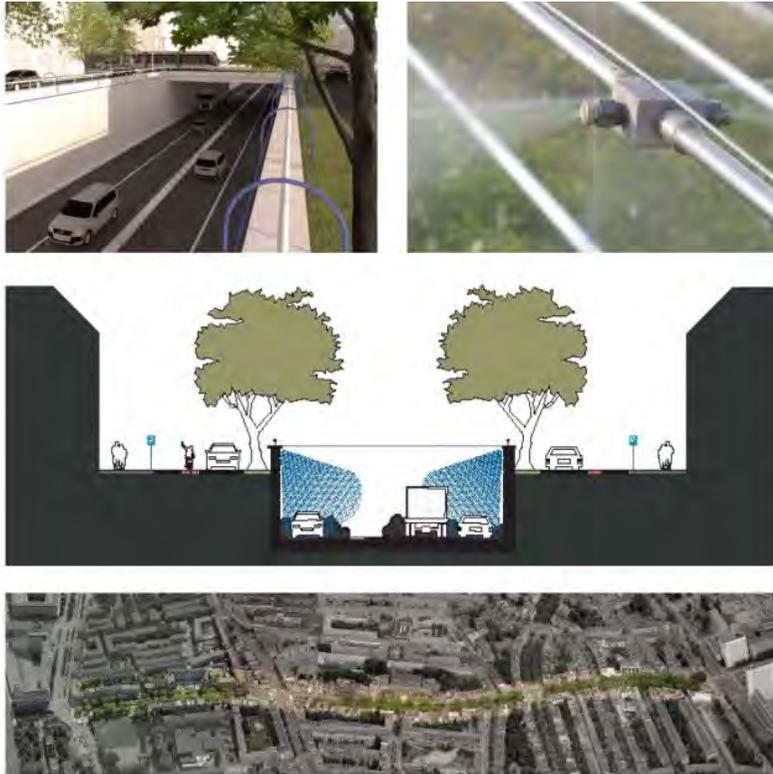
photo Leon Richard. April 2016

4) 's-Gravendijkboswal' (by Marieke de Keijzer and Eric van Ulden) is an experiment in the public space. It monitors for a long period of time what the effects are of plant and moss towards air quality. The experiment also tests how these particular plants respond to the local conditions. In cooperation with other lab members (specialized in measurements) and the expert institutions like municipality and the RIVM/ DCMR the effects are monitored.



photo De Keijzer. 2016

5) s'-Gravendijkwasstraat (by architect and social designer Robbert de Vrieze) is an experiment in the public space, and tests the effects of an water nozzle system that will purify the air and monitors the impact on the air quality. It drains the collected fine dust produced by the traffic. This project is funded by the 'CityLab010' of the municipality of Rotterdam. In regard to this research it reveals the practice of experimenting in public space where Robbert de Vrieze connects with a cooperative mind-set various expert and non-expert stakeholders.



images Robbert de Vrieze. 2016 source www.stadslabluchtkwaliteit.nl

INTERVIEW MARIEKE DE KEIJZER

Reference to Chapter 3.2 & 3.3
Summary of the dialogue:

Date of interview: 21-02-2017 Rotterdam

Position: She is a landscape architect and one of the initiators of Stadslab Luchtkwaliteit.



THE LAB

AP: How did the Stadslab Luchtkwaliteit start? We started the Stadslab Luchtkwaliteit in a very organic way. You need to be able to respond to things that appear. This requires an open attitude. We felt our ideas were good and thought it was a pity that the municipality didn't continue with the open call. We also discovered that air quality is a complex issue. That is why we started to join force in the lab.

She described the lab as a situation to learn from each other. To work together and make all projects benefit from one another. Working in a lab requires an open and critical attitude. She described the willingness to learn and have an open attitude on new topics. She gets the input from people and Internet. But this requires to be trained to be very critical. She gave the example that it bothers her that a lot of people hear and read stuff about dust and simply accept it as the truth. That's why a lab is so important: to be critically and cooperative. It allows stepping out of the comfort zone.

She described the urgency for cooperating but also the urgency for critical independent places. "You need to question things the whole time!! For example it was in the news last week that cooking produces even more fine dust than traffic. Last week a lot of people told me this and questioned me why I then bother with dust pollution from traffic? I'm irritated that it isn't questioned what this dust does to your health, nor by the journalist, nor by the people. It should be critically questioned, because dust from traffic is toxic and burned food isn't. That makes a huge difference. This is important. Because we are part of a lab that researches we gain more knowledge and question things. We dare to question and not give a solution. There aren't many of these independent places anymore. "

The topic fine dust is complicated. But by being open it is easier to connect to people and make contact. She is trained as a landscape architect, this makes that she can think on both large as well as small scale; to be specific as well as a generalist. She can explain from a wide perspective to others what they have in common but understand in detail the differences and what can be gained from each other in cooperation.

The interview with Marieke de Keijzer made me realize the importance of critically question things and that there are many ways of doing this. The way she is critical is not by standing aside and shouting on things. She actively engages with a variety of topics and methods and dares to try out thing into reality. She dares to make mistakes, or ask naïve questions at first sight. This provides an open attitude in which people feel a possibility to answer and think about her critical posed questions. Because she actively engages in the process it also generates new knowledge.

INTERVIEW KIRSTEN KENTLER

Reference to Chapter 3.2 & 3.3 Summary:

Date of interview: 24-01-2017 Rotterdam

Position: Interaction Designer and teacher product design at HKU Pro-Am in the topic Fine Dust. She is member of Stadslab Luchtkwaliteit .



POSITION

She described first that it is difficult to explain what constitutes her practice. She is trained as an interaction designer. But calls herself quite often storyteller in the field of research and design or 'narrative designer'. "The context determines the medium. But I'm curious about stories. That is the motor of my design process. I still search what defines my practice. I'm a Chameleon"

THE LAB

AP: What is the role of the Lab in your practice? "The lab is important for meeting others. To learn from others, it facilitates meetings... I gain knowledge from Internet, but after a certain moment I do need more input, and critically ask if all my info is true. The notion that we disagree with one another in the lab makes me question more. So I call the experts. But it is easier to connect to them and get an appointment with a bigger group of people."

The city lab is important for meeting a wide variety of others. To learn from others, it facilitates meetings and interactions. These are essential in order

to learn about the difficult topic of air quality. She describes the lab as a learning network.

ATTITUDE

She relates to the context of amateurism in her practice as a metaphor for a certain attitude. She finds amateurism relating to naivety. This attitude is important as a designer because it creates the possibility to question the 'obvious'. "Insecurity is liberating but constraining at the same time. But is good to realize the importance of insecurity, it creates a moment for an equal contact. What can I deliver if I contact the experts on a topic? Is it ok to ask for input, are my questions not naïve?"

After I gained a huge amount of knowledge then I was able to ask these naïve questions again. That was my role as a designer to realize that these naïve questions have a huge value. This is an important attitude for a designer." She described that this attitude is important in order to interact with people. To realize that you do not know it all means that there is a moment of equal contact.

'Now I'm less insecure. This means that I'm less afraid of doing it together. Insecurity is liberating but constraining at the same time. But is good to realize the importance of insecurity, it creates a moment for an equal contact.'

AP: How did your education influence your current practice? She described she was educated as an interaction designer at a time it was still a new profession. A lot needed to be 'invented' within her education. This required an open attitude. This open attitude is still important in her continuing changing practice.

AP: How does your current practice influence your role as a design educator at the HKU? "As an educator all this is playing a role. It is about starting small. Otherwise it is too much for students to understand. Going from small to big is easier than the other way around. The boundaries are fluid, what is a designer? What is an educator? We need to educate strong personalities. That is the most important. It is about educating a person. Personal attention. All individuals need to be educated different."

CASE STUDY 'ZERO FOOTPRINT CAMPUS'

Reference to Chapter 3.2 Summary:

Here I show some of the different projects from city lab 'Zero Footprint Campus' that I found relevant for this research.

1) READ-IN

The project read in by among other Annette Kraus is relevant in the context of this thesis as it discusses 'unlearning' and the necessity of it towards fixed notions.

About READ-IN: A guided walk with a library staff member through the University Library Uithof, along special bookshelves, categorizing narratives, and a glimpse into one of the back-end depositories of the library. Moreover, Read-in members Svenja Engels, Annette Krauss and Laura Pardo invite visitors for an analogue bookshelf research in the space of the Utrecht University Library, and introduce their project '*Unlearning my Library. Bookshelf_Research*'. ¹⁴

This will take place in June 2017

Source: (<http://www.zerofootprintcampus.nl/en/2017/05/09/guided-walk-through-library-by-read-in/>)

¹⁴ Read-in is a self-organized collective since 2010 that experiments with the political, material, and physical implications of collective reading and the situatedness of any kind of reading activity. Recurring investigations include the legacy of feminist reading groups, reading aloud, the infectiousness of words, library and bookshelf research, reading (in) films, collective memorizing, (un-)disciplinary pedagogies and listening intonationally. source: <http://www.zerofootprintcampus.nl/en/participants/read-in/>





Source: (<http://www.zerofootprintcampus.nl/en/2017/05/09/guided-walk-through-library-by-read-in/>)

taken away to feed elsewhere. Some restaurants on campus import less than that annually, so questions arise if it is possible to complement or intervene with the present import system and consider a local feeding system.

The campus also has areas of extensive pasture where approximately three hundred and twenty five sheep graze. The sheep are part of the Tolakker research farm for veterinarian studies. At present, Hathaway has approximately 450 kilos of wool normally taken away after shearing, and has found out wool is a rich resource for clothing and vitamin D3. With a campus focused on sustainability, wearing a sweater indoors allows for heat to be turned down and making a sweater with your own sweat curbs reliance on sweatshops elsewhere and complements a majority of mind work. Additionally, expertise from chemistry and the glass lab of Science Instrumentation can be used to highlight the uses of lanolin from the oily wool. With the aim of making a sweater and Vitamin D3 with local labor the Sweat(er) Shop tests the desire and ability of local consumers in this context to “go local”.” Source:

<http://www.zerofootprintcampus.nl/en/participants/cynthia-hathaway/> , accessed September 2017-09-06

2) ‘Sweat(er) Shop’; project by Hathaway to felt al university sweater from local sheep, with the academic community, hobbyist, and artists. The project questions the local resources at the university and its value to the community.

“For the Department of Search, Hathaway is looking for possibilities of keeping campus resources in, and has been working with feeding the campus locally grown giant vegetables. Recently, she has opened at the Department of Search Barn the Sweat(er)shop and D-stillery. Hathaway unites artistic (including hobbyists) and scientific thinkers around the question: how do we make space public and productive through the use of local materials? Her search shows the richness of the Utrecht Science Park in terms of local food production opportunities. The organic cows at the Tolakker farm produce about 750,000 liters of beautiful milk per year and



Image Source: <http://www.zerofootprintcampus.nl/en/2017/06/06/guided-tours-in-june/>



Image source:
http://www.zerofootprintcampus.nl/wpcontent/uploads/2016/12/15541210_10154038387677617_5146261257535212759_n.jpg



Image source:
<http://www.zerofootprintcampus.nl/2017/03/28/hoe-maak-je-met-een-sinaasappel-de-wc-schoon/>



Image Source:
<http://www.zerofootprintcampus.nl/en/2017/06/06/guided-tours-in-june/>

3) 'Van Blankensteyn'; Project by Marsille.

About the project: Van Blankensteyn is a collaboration between designer Guido Marsille and Zero Waste Consultant Alexander Prinsen. They draw inspiration from the history of Van Blankensteyn soap factory in Rotterdam. The story goes back to 1902 when this water distillery started to produce soap for the neighbourhood. Since 2015 Guido and Alexander decided to rediscover his soap making skills and started producing their own local organic soap. The two follow the ideas of Gunter Pauli, the author of *The Blue Economy*. A blue economy is another way of economic thinking, in which the basic needs are met by what is available locally. This idea is based on how nature works and on collaboration instead of competition. Van Blankensteyn applies artistic research which makes it possible to image the impossible. To reach this goal Van Blankensteyn seeks for collaboration with scientists, corporations and schools to develop an inclusive local production model.

About the search question: Van Blankensteyn started their search on the campus by asking a very simple question: "How do we keep the campus clean with local resources?" They went to a variety of experts, from biologists, chemist, physicians, and cleaning ladies, kitchen staff and gardeners. Their approach creates commonality of purpose how various specialisms can work together to answer this simple question. Looking at local food waste on campus they discovered an abundance of orange peel waste. An orange peel is garbage in the food processing industry, but could be a valuable resource for making soap. For the Department of Search, Marsille and Prinsen set up a cleaning production unit using the waste stream of orange peels. By observing nature the orange in its original habitat, they started to study the biotope around the orange tree. How do tree roots collaborate with the soil, bacteria, oranges and weather circumstances? By combining observations from looking at the tree and knowledge from chemistry, biology and engineering they started a fermentation lab searching for the perfect balance in extracting the useful resources for cleaning products. Van Blankensteyn introduces natural fermentation processes to transform orange peels into cleaning products. Their approach is a radical new way of thinking about waste, hygiene and the perception of cleaning.

Source: <http://www.zerofootprintcampus.nl/en/participants/guido-marsille/>
 accessed September 2017-09-06

Top image: His house where he shares his washing machine. Bottom image: working together with students at the Campus. Image right: Zero waste Juice Bar during the events-month in June 2017.

INTERVIEW GUIDO MARSILLE

Reference to Chapter 3.2 & 3.3

Summary:

Date of interview: 26-01-2017 Rotterdam

Position: Designer. Pro-Am 'chemist' for his project 'Van Blankensteyn' Soapmaker. With the project 'van Blankensteyn soap maker' ¹⁵ he is part of the Zero Footprint Campus.



POSITION

AP: How did you develop your practice as it is today? It took me years to develop the position where I'm now. I'm trained as an interior architect. I've learned to zoom in and out. It is important to keep on developing in the practice and do a lot of different things. I can do that because I'm an

¹⁵ In 1902, the Blankensteyn company in Rotterdam manufactured soap and supplied the neighbourhood with hot water. In 2015, designers Guido Marsille and Alexander Prinsen carried on the soap factory under the name Firma van Blankensteyn and opened a small laundry where organic soap is used without the addition of substances that are harmful to the environment. With Van Blankensteyn Zeepmaker Marsille wants to show that detergents can also be made in a different way and that multiple value flows, such as local employment, can be developed in the process.

independent practitioner. This means if I see an interesting business opportunity or if I see an urgency to work on a specific topic I can react very quickly. I do not need to take care of a big and slow organization."

URGENCY

AP: How is co-operative practice shaped? ... I could start the soap factory, and develop this project because I'm able to respond to emerging situation since I'm an independent designer, and I'm open for co-operations... I think that it is important to work together. To start an alliance. I work together with Alexander Prinsen for this project. You need (specially when you are independent) places to meet, and connect, and learn from each other. ... That is how to trigger renewal. I'm interested in the public space because that is where all kinds of people meet... I'm interested in daily life, because that is where design is acting and changes life of people."

He noticed that by sharing his washing machine it also created a situation where people would meet each other, and started talking. This network is important. Sharing means communicating and starting with cooperating.

"It started with sharing my washing machine. This made me question the soap that is used; can we make a soap together that isn't bad for the environment? Can we use vegetable waste as soap? I'm interested in the impact design has on the daily lives of people."

LEARNING

AP: How did your education influence your current practice? The way my career developed is also due to age. It took me years to create the wisdom and learn... It's an organic process.

He described the skill 'zoom in and out' as something he learned at the academy. But emphasized the importance of keeping on developing during your career. Certain wisdom needs a lot of time.

INTERVIEW CYNTHIA HATHAWAY

Reference to Chapter 3.2 & 3.3

Summary:

Date of interview: 14-03-2017 Utrecht

Position: Designer and Co-initiator of Zero Foot Print Campus



“Cynthia Hathaway is fascinated by people living at remote locations, who use alternative production methods or who are different in one way or another from what is considered normal. Hathaway followed car hobbyists, giant vegetable growers, Inuit hunters, farmers from Mennonite and Amish communities, repairmen and mavericks. Hathaway documents these peripheral communities and sheds light on their expertise in survival and resourcefully fending for themselves. In her work, she creates platforms where various experts collaborate and exchange experience, creating room for alternative and accidental views on designing a sustainable future and forms of new communities.”

Source: <http://www.zerofootprintcampus.nl/en/participants/cynthia-hathaway/> , accessed September 2017-09-06

THE LAB

After an initial cooperation of two years of Cynthia Hathaway and Melle Smets (initiator Zero Footprint Campus and artist) with the Utrecht University and its Campus, on an individual way with projects, Cythia Hathaway and Melle Smits decided to upscale this cooperation and invited other artist to realize artistic research at the Campus. She described the urgency of addressing ecological problems and that cooperation is important.

“...Cooperation is important that is how we can challenge ecological problems. But to do so you need to be vulnerable. You first need to know your way around, this takes time. And requires to be careful. Not simply getting from A to B, it is a process that is not mouldable, a process that happens in daily life. That is how people meet. Strategy is action research: putting things into space and getting feed back and going on with the feedback. It generates a funnel of knowledge of linking the unusual suspects in a situation of informality.Integrating from within can reveal disruption towards the system.

Individual feeling of balancing between strategically and to keep your own entity in a flux. Believing in process, that is a product.”

AP: What is the role of the Lab then? Cynthia Hathaway described the role of the Lab as ‘Openness of linking the unusual suspects’ This is needed in order to bring people together. She included for instance the ‘others’ like amateur felters in the project ‘Sweat(er) Shop’ . A community of students, hobbyist and academic are felting with wool from local ‘campus’ sheep a new University Swaeter. She is the curator of finding new unconventional co-operations. She described this process as a strategy to create ‘disruptive interventions’ and argued that this is the role artist can take. She sets up the circumstances for co-operations, she designs the process. She creates moments for informality.

ROLE

AP:What is your role then, how does that process work?

It requires knowing where you are.. Understanding your role, you can be instrumental. But there is a great opportunity for the public to inform the science. You need to make the experts understand this. To open up their facade...simmering knowledge. Amateurs have no risk in saying anything and revealing knowledge, they can add humour and questioning things.”

She described the difference between art and design in taking these roles. Both disciplines can have an impact in creating 'Disruption interventions' but take a different position. "Disruption interventions is what art can do design takes a more servicing position. Integrating within the system can reveal and be disruptive towards the system.. Showing the invisible and political forces. Being disrupters is a strategy."

AMATEURS

Cynthia Hathaway 'united' in quite a few projects the knowledge of amateurs to experts. This experience made her realize the importance of what she calls a 'Commonality of Purpose' and that it isn't evidential to find. There is a role to play for designers in order to allow people to find this commonality. Depending on the context this role is varying from for instance networker or facilitator but it is always a delicate process of revealing to all stakeholders what the this Commonality of Purpose is.

AP: In your work 'Hobbyists' play a very important role. What do you think is their contribution in these processes?

"Hobbyist came to help with 'The pumping Station: a survivalists guide to eat locally.' The knew how to grow giant vegetables. It exposed the expertise of the hobbyist by talking to the scientist from the Campus as well as the people working in the Campus-canteens.. These conversations cuts away the boundaries of the institutional knowledge. Hobbyist can dream with you. This understanding of the dream is what designers can contextualise. And the designers connect the fields of knowledge. For instance the botanic garden from the Campus understood the dream of giant vegetables due to this 'design'-project and is now hosting a giant vegetable festival. A hobby is also showing that is not only meant to be funny. It is making knowledge tangible. Hobbyist aren't earning any money with it. So there is no risk in doing certain things. Younger generations of hobbyist use the connectivity and share a lot of knowledge. Older people are trying to keep away from society and spend time with their hobby more isolated or in a small group.

The interview with Hathaway provided a lot of valuable input on what way design contributes in connecting experts and non-experts. She made me understand very clearly what the role of design is in these processes. She also provided a lot of input on how this new knowledge can be made valuable towards all stakeholders and be beneficial towards ecological issues.

INTERVIEW CRISTINA AMPATZIDOU

Reference to Chapter 3.3

Summery:

Date of interview: 19-01-2017 Rotterdam

Position: She is a researcher and writer with a background in Architecture and Urbanism and a founder of Amateur Cities. Currently pursuing her PhD at the University of Groningen on the topic of gaming and urban complexity.



DEFINITION:

AP: How do you define an amateur: 'We always ask what people do, never what they are driven to. That is what I like about amateurs. It doesn't exclude anyone. That's why I don't see it as an opposite of professionals, but complementary. Nowadays the unskilled view on amateurs is changing because of the Internet. It is more about 'love' again. Hotelier Airbnb, Etsy etc. This shift is starting a discussion on the boundaries of what defines your profession. I hope so as well, I find it very interesting.

URGENCY:

There is an urgency to think about amateurs because cities become more exclusive, and are losing the diversity that made them great. There is a

need to bring back inclusivity. Amateurs help to think in a different way. In the debate around cities there are a lot of disciplines involved, it is not only the territory of planners any more. It involves also disciplines from a technical, social or political background. Next to this there is a growing dynamic of citizen driven projects. Amateurs can question and glue the citizen driven projects and the measurable knowledge of sociologist and technology driven initiatives.

ATTITUDE:

We can learn from amateurs that we need to include the possibility to fail, to make mistake. Cities bring together people that do a lot of great things. Important in this is 'amateur' as an attitude: try out things. This is a luxury that is lost within professionalism, the lost of openness. It is about trying to improve small things. Bringing together that normal wouldn't come together. I'm an amateur in almost everything I do. I'm doing a PhD in gaming, but I'm not good in gaming so I'm an amateur in that. I have to publish articles but I'm not good at it, I'm not trained in it.

LEARNING

AP: How do you learn then as an Amateur? 'I learn: I google stuff. And asking people. It is underestimated to ask people. You can learn a lot from people! Sometimes I read something, and then I simply email the author. The network is important. '

AP: How did your education influence your current practice? As an Urbanist I had the best education: It was abroad education. It included Philosophy, Cinema studies History etc. We could become nothing and everything. Openness is important.

First you need to learn in a general way: to know what you want to learn about; and what you want to be focussed on. Then you need to learn and get deep knowledge. Designers/architects are good in this. They have an analytical skill in order to compose and recompose. The total is more than the individual stuff. The building is about bringing together not only the individual wall, doors etc. But composing these parts as a new thing. I see this in my PhD, my colleagues are coming from a other background (politics, sociology) they think in part. $1+1=2$ we can think in $1+1=2$ but also 3 or 4 at the same time. Merging of knowledge. Fluid knowledge.

MONITORING:

We are in a system that is about the good outcome. It requires a systemic change that is a shift of the outcome to a love of the process. You need to love in order to be able to make mistakes. This requires that we need to

change the system of evaluating. The hacker culture is interesting, it is about Peer recognition. We need to find a way to integrate this in our evaluation system. Current evaluation is about fitting everything into the models. But nowadays the boxes and models don't fit reality anymore. Its enriching to embrace all the different positions, being a mom, amateur, professional etc.

'It could be a self evaluating system. It shouldn't be a system of the wisdom of the crowd. I don't have an answer on what this system should be. But we can learn from the open source hacker culture and amateur culture... But very important to change the system. It doesn't fit the opaque and fluid boundaries anymore.

FLUID BOUNDARIES

AP: Do you think there is a downgrading of the professional field by having these fluid boundaries? This is what Keen says. 'I don't think the talent will get lost. No lost of good designer, the talent will find its way. I disagree with Keen because professional and amateurs are not opposite to each other, but it is much more integrated and situated. I think there is much more the professionals can gain from the fluid boundaries.

INTERVIEW MARIJKE BOVENS

Reference to Chapter 1.3 & 3.4 Summary:

Date of interview: 19-01-2017 Rotterdam

Position: She is a journalist and addressed by Creative Industries Fund NL to research the funded City Labs.



image: Maarten van Haaff

Creative Industries Fund NL¹⁶ organised in October 2016 the session 'Get involved: experimenting in creative labs'. The session investigated the various labs in which designers operate. From a workspace that can be a 'Makerspace', 'InnovationLab' 'Living Labs' and 'City Labs'. This session illustrated the popularity of a lab, its variety and its goals, varying from innovation in making to creating social engagement in cities for example.

16 Creative Industries Fund NL is the biggest Dutch cultural fund for architecture, design and digital culture, as well as every imaginable crossover. The Fund supports exceptional and innovative projects and activities of designers, makers and cultural institutions in the creative industries.

(http://stimuleringsfonds.nl/en/the_fund/organization/about_the_fund/, accessed Aug. 2016)

Marijke Bovens (2017) conducted a research in the framework of Creative Industries Fund NL about city labs. She describes city labs as learning networks that experiment in an inter- cross trans- disciplinary setting with various complex (urban) issues.

Within the investigation she found a wide variety of city labs but all labs had as commonalities:

- Hybrid.; city labs have a wide variety internal and external in professions. Connecting both experts and non-experts.
 - Pragmatic nature; city labs have a mentality of problem solving, however the laborants are aware of the complexity and never claim to have THE solution.
 - city labs function as a learning network. This network is functioning both online as in the real world.
 - Run by independent professionals.
- People that operate in those labs have strong motivations to change something; they want to 'act' upon the issues that they are facing in their (urban) living environment. They cooperate with institutions like local municipalities and start alliances.

This requires an almost conflicting set of skills. From social enabled to stubborn; from tactful to assertive; from visionary to practical; from knowing a lot but not be stopped by too much knowledge, for example.

Bovens explained that the economic crisis gave a boost to city labs. Because there was a growing group of people with extra time, it created empty buildings that were available to re-develop and the crisis revealed environmental, social, economic and political issues that had been simmering for a while. Bovens expects that new Dutch governmental regulations (start in 2019 regarding environmental licence) will create a growing number of city labs. Since these regulation will ask from the governmental institution more openness and involvement of their citizens.

In the context of research the interview with Marijke Bovens revealed the wide scope of the city lab, as it is a recent phenomena it is still unknown what the impact will be on all these various scopes. Because of her distant view complementary to my own more personal findings the interview made me aware of the impact on the various levels. She described the interest and reasons of institutions (for example the new Dutch governmental regulations that start in 2019) in city labs.

REFLECTION STUDENTS 'CROSSING BOUNDARIES'

Reference to Chapter 3.4

Summary:

Date: 02-03-2017 Bolzano Italy

Seminar 'CROSSING BOUNDARIES' at UNIBIZ University of Bolzano, Master Eco and Social Design with professor Fuad-Luke.

ABOUT: CROSSING BOUNDARIES.

Annemarie Piscaer, StudioDust, NL and Prof. Alastair Fuad-Luke, Unibz

What happens when professionally trained designers collaborate with 'other designers' or 'non-designers'? Annemarie presents BlueCity, a playground for circular business, the new economy and radical disruption, and StadsLab, an air quality project in Rotterdam. Alastair shows on-going work with the Make Yourself... local clothing project in Bolzano. These short talks form the basis for an audience discussion about the roles and realities of collaborating with 'complementary relational designers'.

URGENCY

The students named, the urgency for designers to be involved in addressing ecological issues in inclusive transdisciplinary settings with non-designers ('complementary relational designer'), because a changing planet and society, with growing levels of complexity (wicked problems) can't be addressed by a single discipline anymore. "... interdependency in creating opportunities for change, designers are catalyst of change. A society needs to be aware of the universal conditions of its existence... designers help in recognising the scope of design. (Fuad Luke 2017)

SCALES

This requires working on flexible scales; from micro to macro. It involves recognizing the possible scope of design. To understand ecology and the impact of design it requires to think and move in these scale levels. Design has the capability to link these scales and new contexts by storytelling and finding other (visual) narratives.

INCLUSIVE TOPICS

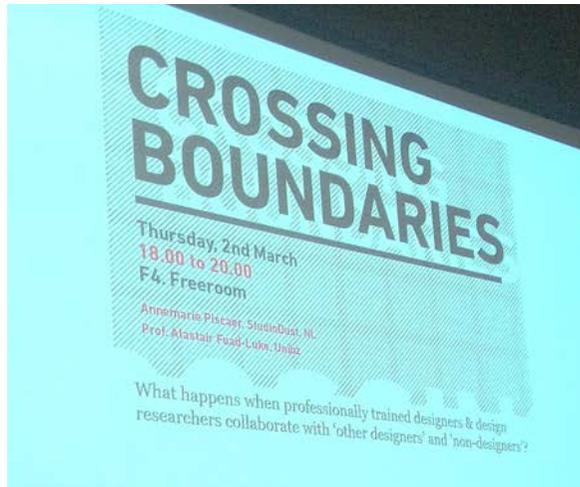
The topic air quality of 'StadsLab Luchtkwaliteit' questioned the need of a 'commonality of purpose'. In order to be able to include the non-designers into the process it is simply not enough to have a common purpose that is so specific that it engages only with 'the happy few'. Air quality is a topic that engages with a wide variety of people (everybody breathes). This makes the co-creation process more open.

Within the design practice it is important to understand how exclusive or inclusive the topic engages with 'the others'.

PROCES

The Master students conduct a practice-based research including a project in a set period of time. The process is an important aspect of this. They recognized this as the most difficult part. How to get in contact with people, how to engage people into their project? How to make their project into something that matters to a community? Designers can contribute in these changing practices by 'designing' the process (and not only the outcome).

The practical side makes a designer humble and realize there is only little to contribute. The activist nature of the 'Design Activist' (Fuad-Luke, 2017) is difficult to maintain in reality. Balancing between being humble and having an activist attitude. This underlines the relevance of learning to act of various scales and levels. And to be able to zoom in and out. Discussing the design-role (designing a process) in these transdisciplinary cooperative processes made me aware that it is evidential to learn how to design a process. The complex nature of designing a process makes it difficult to teach this within the framework of design education. A lab can facilitate a 'safe' ground for students to enquire these skills.



INTERNET

Internet opened up the socialization of design. It is an important recourse for information but also to network and include the 'non-designers' into a process. Internet is an important tool for these new design practices. The social turn in design started parallel to movements like co-creating as for example Wikipedia as Fuad-Luke explained.

UNDISCIPLINARY

Fuad-Luke introduced the term 'un-disciplinary' in the discussion. Questioning in the context of the discussion: Do we need to become un-disciplinary, in order to involve the 'complementary relational designers' in a co-creation process? The question remained unanswered but influenced this research.

DISCUSSED CASE STUDY

Fuad-Luke showed on-going work with the 'Make Yourself..' project ¹⁷He

¹⁷ A design research project in Bolzano Italië: Make Yourself... is a series of events focused on co-creating fashion 'makerspace' and pop-up shop by and for everyone. (designers, locals,visitors, migrants and refugees). <https://modeuncut.com/2016/12/15/seminar-disruptive-fashion-practices/> (accessed June 2017)

explained the complexity of involving the non-experts ('complementary relational designer') into a process. And addressed the notion that the process of co-creating provides a rich context. For example in 'Make Yourself..' designers, locals and migrants are co-creating fashion, in the process they exchange values, cultural traditions, and ideas about a sustainable world. This enriches not only the ideas regarding fashion, but also builds 'social capital' (glues the society) due to the collaboration between the different cultures.

This seminar allowed me to reflect on this research towards design education and the consequences for students. It made me realize that these new design practices demand a specific set up competencies and that it is difficult to learn this with the traditional educational context. For example the discussions with the students were very specific, as they understood that facilitating within a design process a common purpose is about recognizing the scope of inclusivity (air quality vs circular economy). Learning these specifics is difficult while remaining inside the institution, however going 'outside' stumbles along practicalities.



image source: <http://unibz.github.io/pattern-library/v7/patterns/04-pages-00-homepage/04-pages-00-homepage.html>

REFLECTION EDUCATORS 'CREATING010' / HOT

Reference to Chapter 3.4

Summary:

Date: January /June 2017 Rotterdam

This research was part of the HOT program 'education in labs, communities of practice and stations' at the Readership Creating010.



source: (<https://www.hogeschoolrotterdam.nl/onderzoek/projecten-en-publicaties/creating-010/smart-and-inclusive-society/hogeschooldocenten-ontwikkelt-team/>, accessed aug.2016)

About: HOT is a Learning Community of lecturers from the Rotterdam University of applied science from the Institute Communication, Media en Information technology, Willem de Kooning Academy, Department of Education, Research Centre Healthcare and Creating 010.

With:

Anne Nigten: Lector Design for Network Ecologies
Peter Troxler: Lector Revolution of the Making Industry
Liane van der Linden: Research-coördinator

HOT Peer-group:

Peter van Waart and Leo Remijn: associate professor/researchers Institute Communication, Media en Information technology

Reflecting within the context of HOT provided valuable insights. It made me understand the consequences towards education in its various levels and scales: (curricula, teaching, consequences for students and their personal situations)

INTRINSIC MOTIVATION

Leo Remijn and Peter van Waart both experienced in their education practice that students sometimes seem to lack an intrinsic motivation. According to them; an intrinsic motivation is the core competency required in order to start learning. This questioned how the intrinsic motivation could be regained. Remijn noticed that students never seemed to lack this motivation in the Maker space 'Stadslab'.

This made me question; can a Lab (for example a City Lab) facilitate in regaining (or maintaining) this intrinsic motivation within education? The discussion about intrinsic motivation in the context of this research revealed that currently there is a friction between the 'professional' (as an expert) and the 'amateur' (as having a love), in Education. I think it shows the importance of connecting the professional and the Pro-Am, (to learn how to be a Pro-Am) because by embracing this, student are better equipped to learn how to maintain intrinsic motivation and become better professionals.

MONITORING

The HOT session in May 2017 involved 'monitoring', in the context of this research, I questioned: 'What if Design Students start learning in a City Lab, what are the implications for monitoring?', posing the statement of Rancière that 'universal teaching' could be possible as long as there is 'emancipation'.

Marlies Bedeker -Van der Wee (*researcher University of applied science Rotterdam, HOT*) reflected on this statement and pointed out that monitoring could be a moment of reflection (peer feed back) and helps to understand the learning process rather than measuring the content. 'Do we measure what we value, or do we value what we measure?' (Marlies Bedeker -Van der Wee, 2017)

LEARNING COMMUNITY

- Stadslab is a Maker space of the University of applied science Rotterdam that merges the fields: Fablab, Open Data lab and a Sensorlab.

Does 'learning in a City Lab' imply a different role for the teacher then? Where the teacher is not resource of all the required information, but a coach guiding an individual learning trajectory? Anne Nigten (*Lector Design for Network Ecologies at Creating010*) proposed a Learning Community as a commune of both students as well as teachers both moving along the boundaries of 'education' and 'the City Lab'.

An open situation between the Academy and 'Society' allows a situation where it is easier for the academies to respond more flexible and quickly towards grand societal challenges and changes.

IMPLEMENTATION

How can all these urgently needed changes be implemented in Design Education? Van Waart noticed that this is a Wicked Problem itself. This research does not aim to give any specific answers on this, because as mentioned it would differ from academy to academy. Remijn talked about the possibility for this transition through 'Pilot Projects'. City Labs could facilitate this from outside in.

OUTSIDER: PROCES

Unintentional did my position as a Non-Expert-Educator within the expert centre Creating010 provide me insights in the value of the Non-Expert. The people I reflected upon this research are all experts in either 'education' or 'research', but appreciated my unconventional know-how.

CONCLUSION

The HOT discussions made me aware that design education needs to actively engage in facilitating City Labs. Because City Labs could provide a canvas to maintain an intrinsic motivation for students, it could provide a learning community for both students and educators into the 'real world', and a safe ground to experiment with new applications for educational changes.

Attached the Dutch summary of the session 'Monitoring':

*HOT Verdieping Toetsing/assessments
maandag 8 mei, 14.00 – 17.00 uur, Wijnhaven 99, 01.017
<https://learningthroughmaking.wordpress.com/verslag-verdieping-toetsing-en-assessments/>
Verslag: Liane van der Linden (HOT vanuit Creating 010)*

Op 8 mei wisselde het Hogeschooldocenten Ontwikkel Team (HOT) samen met drie andere HR-docent-onderzoekers kennis en ervaring uit over toetsing en assessments. Ter voorbereiding van deze verdiepingssessie hadden HOT subgroepjes drie vragen/statements geformuleerd, voorzien van context met literatuur en een documentaire:

- 1 *Toetsen is de essentie van onderwijs. Daarom geven studenten en docenten in (peer-) learning- situaties elkaar continu feedback*
- 2 *Hoe maken we van toetsing een betekenisvolle ervaring, die recht doet aan a.) persoonlijke interesse, b.) ontwikkelproces en c.) competentieprofiel?*
- 3 *Als ontwerp-studenten buiten de muren van het instituut in bijvoorbeeld een Stadslab leren, hoe verhoudt zich deze praktijk tot monitoren? Is het nodig?*

Iedere deelvraag werd kort toegelicht, waarna een van de gast-peers met een eerste reactie kwam, als opmaat naar een gezamenlijke uitwisseling en geleid door Anne Nigten en Peter Troxler, lectoren bij Creating 010.

- 1 *Toetsen is de essentie van onderwijs. Daarom geven studenten en docenten in (peer-) learning- situaties elkaar continu feedback*
Kitt Bosman (deelnemer HOT vanuit Instituut voor Sociale Opleidingen) komt niet uit het 'maakonderwijs' en is geïnteresseerd in wat het betekent voor toetsing. De documentaire Most likely to succeed geeft een mogelijke richting. Kenmerkend voor deze Amerikaanse High Tech High-school is dat er niet met vaste programma's wordt gewerkt; het accent op integrale vraagstukken ligt die samenwerking van de leerlingen vereisen. De nadruk ligt vooral op het ontwikkelen van generieke competenties en 21st century skills, en dat de docenten op verzoek en 'just in time' begeleiden.
Wat Kitt naar aanleiding van de documentaire ter sprake brengt is de rol van de docent in peer reviewing: de spanning tussen meewerken met de leerlingen als peer en docent blijven. Onderling geven de docenten elkaar ook voortdurend feedback en dat is voor veel docenten niet gebruikelijk, zoals blijkt uit de ervaringen van CMD met Contextual Learning Environment (CLE) en het studiomodel. In het papieren ontwerp van dit model ligt de nadruk op het sociaal constructivisme en hoe studenten niet alleen leren om als peers met elkaar op te trekken en elkaar feedback te geven maar ook om proactief te handelen. De docenten moeten als aanjager van het leerproces terugtreden en zich hoeden voor de rol van cipiër, zoals Biesta signaleert als consequentie

van een sociaal constructivisme dat te veel leunt op de docent (Het prachtige risico van onderwijs, 2014). Belangrijk is dat docenten hun eigen rol kennen en weten waar hun waardetoevoeging in het leerproces ligt (of dat nu op het gebied van kennis of op persoonlijke ontwikkeling van de studenten is).

Kanttekeningen bij Most likely so Succeed

In reactie op Most likely to succeed zet gast-peer Anne Potters (HR, Onderwijs en Ontwikkeling), twee kanttekeningen:

De documentaire plaatst onderwijsvernieuwing helemaal in een economisch frame (van banenverlies door automatisering en digitalisering) en is daarmee superpolitiek. Een van de geïnterviewden zegt letterlijk: we need to **produce** people who seem to do well in this new information economy. In de documentaire lopen allerlei paradigma's door elkaar en dat vraagt om een bewustzijn van de verschillende frames die de documentaire ons voorhoudt. En die discutabel zijn, want bijvoorbeeld kennis wordt in de documentaire gereduceerd tot uit het hoofd leren en reproduceren.

De tweede kanttekening gaat verder in op **leren** en op **hoe** mensen leren (zie hiervoor ook onderwijspsycholoog Paul Kirschner).

Narratieve feedback

Terugkomend op toetsen en beoordelen wordt gevraagd of er bij de inrichting van CLE ook is gekeken naar kunstacademies die gewend zijn andere manieren van beoordelen en monitoren te gebruiken (ontwikkelingsgericht). Ja, naar voorbeeld van de WdKA is toetsen bewust narratief gemaakt en de terugkoppeling bewust rijker ingevuld.

Toetsen is veel minder een afsluiting van leren, en meer een handreiking voor verder-leren. Bij CMD zitten de docenten nu in een spagaat van het studiepuntenmodel dat moet worden gevolgd en narratieve feedback, gericht op hoe studenten leren: namelijk niet op dezelfde manier, wel met individuele tempowisselingen en tempoverschillen, en via verschillende leerwegen. Nu aanbodsturing steeds meer verschuift naar vraagsturing vindt er veel meer differentiatie in de groep plaats. Feedback gaat daarbij vooral in op tempo en niet op de leerweg. Die ligt open.

Bij CMD kun je sinds kort kiezen in welke volgorde je de verschillende competenties wilt behalen. In jaar 1 wordt met name gelet op het ontwikkelen van leerzaam gedrag, maar hoe signaleer je leerzaam gedrag. Dat is een kwestie van attitude en houding, op **willen leren**, en dat wordt afgemeten aan wat studenten ondernemen om kennis te vergaren en hoe ze die ontwikkelen.

Hoe communiceer je wat onder leerzaam gedrag wordt verstaan, of anders gezegd, hoe socialiseer je studenten voor een specifieke omgeving: bij CMD door proefstuderen en daarna in 1^e week in bootcamp met docenten.

Denk in verband met de nieuwe leeromgeving ook aan het feedbackmodel van Hattie en Timperley in o.a. *The Power of Feedback*, dat in nieuwe situaties vooral taakgerichte feedback toepast: gericht op inhoud en pas daarna op het proces, gevolgd door reflectie en cognitie.

De rol van ouders

Aan de orde komt verder de rol van ouders in het onderwijs. Die kunnen veel actiever worden betrokken dan alleen bij voorlichtings- en diplomeringsbijeenkomsten, in regelmatige 10 minutengesprekjes en bij presentatiemomenten, georganiseerd door studenten zelf en waar ze trots op hun werk kunnen zijn. In hoeverre wordt de mening/feedback van de ouders ook meegerekend in de beoordeling? En in bredere zin: hoe kunnen we in peer reviewing op hbo-niveau ook de buitenwereld een plaats geven? Tot nu toe is feedback, gegeven door de buitenwereld, opdrachtgevers en praktijkpartners, vooral productgericht

Afsluitend:

Kitt: Voor mij blijven lastige vragen of we nu wel of niet continu feedback moeten geven; hoe we dat doen; wie dat doet; hoe we dat sturen en wat we ervan terug willen zien.

Anne antwoordt met een pertinent ja: we moeten blijven toetsen, en dan vooral formatief, en ondertussen ook verder werken aan de kwaliteit van toetsen.

2 Hoe maken we van toetsing een betekenisvolle ervaring, die recht doet aan a.) persoonlijke interesse, b.) ontwikkelproces en c.) competentieprofiel?

Waar we naar toe willen, zo licht Bartel Standaar-Dorhout (HOT vanuit ISO) toe, is dat studenten warm worden van toetsen, het als iets van henzelf gaan zien en niet als van boven opgelegd. Hoe kunnen we studenten controle geven over de wijze waarop ze door wie en wanneer worden beoordeeld. Daar hoort bij dat we studenten laten meedenken over studiedoelen en hoe ze die willen bereiken. Welke spelregels helpen studenten en docenten om tot consensus te komen over doel, leerweg en toetsing als duurzaam onderdeel van het leerproces? Hoe komen we tot een andere verbeelding van toetsing dan een uitgesneden poppetje in een muur, waar studenten doorheen moeten zien te springen, vult Manon

Mostert- Van der Sar (HOT vanuit Creating 010) aan. Het artikel *Beoordelen met het oog op de toekomst van Dominique Sluijsmans (beoordelen-met-het-oog-op-de-toekomst)* geeft context aan de discussie die nog extra wordt gevoed door gast-peer Eric Entken (HR, Onderwijs en Ontwikkeling):

Geen cijfers, geen studiepunten

Dominique Sluijsmans en René Kneyber, auteurs van *Toetsrevolutie, Naar een feedbackcultuur in het voortgezet onderwijs (zie toetsrevolutie.nl)* richten zich na het vo en po nu ook op het hbo. Een van de pijlers van Sluijsmans' en Kneybers toetsrevolutie is dat er geen cijfers meer worden gegeven en dus ook de studiepunten worden afgeschaft. Daar is HOT het helemaal mee eens.

Verder lezen:

Verankerd in leren, Vijf bouwstenen voor professioneel beoordelen in het hoger beroepsonderwijs, Sluijsmans (2013)

Betrokken bij beoordelen, Duurzaam beoordelen in vraaggestuurd leren, Sluijsmans (2008).

Mozilla open batches: <https://openbadges.org/>

Leren in een veilige omgeving, heldere communicatie , transparante doelen

In de CMD-praktijk blijken er, ondanks voortdurende kalibratie, grote verschillende te zitten in de soort feedback van docenten. Studenten weten niet wat ze van een toetsgesprek kunnen verwachten en dat creëert onveiligheid (wat door anderen liever onzekerheid wordt genoemd).

Maar in de praktijk krijgen ze ook continue te maken met uiteenlopende feedback en daarin is school juist een goede oefening. Rekening houdend met de kwetsbare positie van studenten. Zij moeten succesvol mogen falen, in de wetenschap dat fouten als goed kunnen worden beoordeeld. En ze moeten leren omgaan met teleurstellingen, er vertrouwen in leren krijgen dat er meer wegen zijn die soms meer tijd kosten om de gevraagde kwalificaties en vaardigheden te halen.

Het is aan de docenten om ervoor te zorgen dat leren en toetsen zo met elkaar verbonden zijn dat studenten niet voor onaangename verrassingen kunnen komen. Belangrijk hierbij is dat er over kaders, structuur, eindkwalificaties etc. permanent en helder wordt gecommuniceerd. Bijvoorbeeld vaardigheden als creativiteit, innovatie en kritisch denken etc. zijn geen verborgen idealen maar formele doelen. (zie ook de referentie naar de beoordelingskaders van het WdKA kunstonderwijs eerder)

Formatieve toetsen en summatieve assessments

Het studiomodel van CMD, zo merkt gast-peer Eric Entkens op, geeft veel ruimte aan studenten om zelf keuzes te maken onder andere wanneer ze op wat willen worden getoetst en beoordeeld. Ze worden stringent begeleid en voor de docenten is het de kunst om meerdimensionale en integrale opdrachten te geven waar meer oplossingen voor een vraagstuk uitkomen. Tijdens het werkproces wordt formatief getoetst, desgewenst gevolgd door een summatieve assessment aan het einde, waarvan de uitkomst dan al grotendeels vaststaat. Hoe kunnen docenten ook van toegevoegde waarde worden voor het vervolg en in een summatieve toets een zetje geven aan nieuwe leervragen?

Meer over formatief toetsen:

Doelgericht professionaliseren: formatieve toetspraktijken met effect! Wat DOET de docent in de klas, Gulikers en Baartman (2017)

En over assessments:

Assessment, the silent killer of learning van Eric Mazur.

Wisdom of the crowd

Feedback, feed forward en feed up geven aan 20, 25 studenten is een grote, tijdrovende opgave voor individuele docenten. Naar voorbeeld van wisdom of the crowd kan toetsen ook worden gebaseerd op verschillende formatieve momenten, waarop docenten afzonderlijk, specifieke feedback geven als bijdrage aan een gezamenlijke beoordeling.

Nieuwe opleidingen met nieuwe docenten krijgen onderwijsvernieuwing gemakkelijker voor elkaar dan bestaande situaties, waarin docenten en studenten hun rol (in een lopende opleiding met een lopende curriculum) opnieuw moeten invullen. Het is vaak makkelijker om 'radicaal' te innoveren dan een 'beetje' te innoveren. Uit de praktijk blijkt dat het loont om als je alleen iets kleins kunt veranderen, dat dan wel helemaal en gezamenlijk door te voeren, zie *Bouwstenen voor High Impact Learning, Het leren van de toekomst in onderwijs en organisaties, Dochy, Berghmans e.a. (2015)*

Bedenk ook dat alles helemaal veranderen al snel door de praktijk wordt achterhaald. Bij onderwijs past geen model van change-freeze-change. De enige zekerheid die we hebben is dat onderwijs blijft veranderen en dat we behalve inhoud ook vorm en toetsing continu moeten aanpassen (iedere twee jaar evalueren en bijstellen).

Tot slot

een pleidooi om niet alleen studenten de ruimte en het vertrouwen te geven succesvol te mogen falen maar als docent ook op beide aanspraak te mogen maken.

3 Als ontwerp-studenten buiten de muren van het instituut in bijvoorbeeld een Stadslab leren, hoe verhoudt zich deze praktijk tot monitoren? Is het nodig?

Annemarie Piscaer neemt deel aan HOT, is als ontwerper opgeleid aan de Design Academy Eindhoven, verbonden aan Stadslab Luchtkwaliteit en heeft bijna de master Education of Arts aan het Piet Zwart Instituut afgerond. Zij spitst het gedachtegoed van Rancière, The ignorant schoolmaster, Five Lessons in Intellectual Emancipation (1991) toe op de vraag of een stadslab, waar veel verschillende disciplines en interessegebieden; professionals, amateurs, studenten etc bij elkaar komen een onderdeel zijn van school. En als studenten heel actief een rol hebben in een stadslab, hoe monitor je dat, waarop wordt gemonitord en wie doet dat.

Marlies Bedeker -Van der Wee, gast-peer (HR, IGO) vertelt erg uitgedaagd te zijn door Rancières tekst, zo blijkt ook uit bijgaande, nagestuurde poster. Wat haar bij deze stelling vooral bezig houdt en wat ook al eerder ter sprake is gekomen, is wie bij de beslissingen neemt over beoordelen, met welk doel, in welk proces en waar het beoordelen over gaat. Deze vragen hebben een politieke dimensie, die het onderwijs zijn opgelegd vanuit maatschappelijke en economische ontwikkelingen. Maar daarnaast speelt de vraag van Biesta (zie onder 1) of we meten wat we waarderen of waarderen wat we meten en veel opener naar het ontwikkelproces in labs kunnen kijken. Er zijn in alle vakgebieden normatieve vragen waar niet één antwoord op te geven is. Hoe kun je daar recht aan doen, in zowel het leerproces als in de beoordeling? Zelf wil Marlies meer ruimte in haar onderwijs creëren voor waardevol monitoren (naast betekenisvol monitoren). Dus naast 'doe ik mijn werk goed', gaat het om 'doe ik de goede dingen' behalve studenten vakinhoudelijke vaardigheden leren, in Marlies' geval, om een dijk te beheren.

Wel of niet mixen

Voor Annemarie is de stad /een stadslab een lerende omgeving die je niet moet vertroebelen met school, waar je bijvoorbeeld specifiek dijken leert beheren. Een stadslab is een canvas om met allerlei vormen van samenwerking met diverse instanties te experimenteren om tot

oplossingen voor complexe vraagstukken te komen. In zo'n setting is het een bevrijding om niet van tevoren te hoeven weten wat er uitkomt en daar ook niet op te hoeven toetsen. Het gaat Rancière om emancipatie, om individuele ontwikkeling, daarvoor moet je actief plekken creëren. CLE biedt studenten een canvas en de vrijheid om binnen een bepaalde context te leren wat ze willen leren. Parallel daaraan loopt een aanbodgestuurd programma met basiskennis van, in ons voorbeeld, dijken bouwen. Docenten kunnen nu nog in beide leeromgevingen actief zijn en dat vraagt in de ene omgeving een andere soort feedback en sturing dan in de andere. Het streven is om de ene wereld niet met de andere te mixen, maar het canvas in de stad en de traditionele leeromgeving op school wel dichterbij elkaar brengen. Ook al vanwege de logistieke aansluiting, van bijvoorbeeld onderwijssemesters die niet passen bij de hoge werkplanning jonge, startende bedrijven. Het lukt wel met een partij die er echt belang bij heeft om in het onderwijs te investeren, zoals bij het Centrum voor Innovatief Vakmanschap, Smart Technology.

Soms worden er door onze gretigheid om studenten een praktijkcontext aan te bieden geen goede afspraken gemaakt. Daar moeten wij als docenten onze verantwoordelijkheid in nemen.

Wel of niet monitoren en feedback van wie

Annemarie vindt monitoren in stadslabs niet wenselijk; studenten hoeven in een stadslab niets op te leveren of af te hebben. Zij onderschrijft de radicale positie die Rancière inneemt: niets uitleggen en studenten alleen vragen waar ze mee bezig zijn geweest of wat ze geleerd hebben. Dat hoort bij een totaal ander pedagogisch paradigma dan op school en daarvoor kun je nu juist de buitenwereld inzetten: om niet met een leervraag te beginnen maar de potentie van complexe maatschappelijke vragen te benutten en studenten in die context te leren opereren. Echter monitoren kan studenten helpen zich bewust te worden van hun eigen leren (reflectie) en omgevingen zoals stadslabs bieden een uitdagende context (los van conventies van het vak, van opdrachten en beoordelingskaders), voor het leren van 21st century skills. Feedback vanuit de praktijk vinden studenten heel belangrijk. Discussies ontstaan als de praktijkmensen tevreden zijn en docenten op basis van andere criteria niet. Kunnen we studenten vrije ruimte geven, waar geen leerdoelen aan verbonden zijn, waarin competentieontwikkeling centraal staat en die leerweg-onafhankelijk wordt getoetst? Dit lijkt op de personal challenge van CMD, vrije ruimte gekoppeld aan beroepscompetenties. Wat blijkt is dat daarvan weinig gebruik wordt gemaakt, omdat het op een verkeerd moment en een verkeerde manier wordt gecommuniceerd.

Kan het tijdens bootcamp worden aangekaart? Als er toch getoetst wordt, horen hier toetstechnisch ook opend-ended criteria bij.

Een enkele afsluitende opmerking en vraag:

Wat in iedere discussie zijdelings gemeld wordt, valt Peter op, is we in te kleine toetseenheden werken, 30 toetseenheden zijn minimaal. In deeltijdonderwijs wordt momenteel veel aandacht besteed aan experimenten met grote eenheden: wat daar allemaal bij komt kijken en hoe het ook voor het bacheloronderwijs van betekenis kan zijn. Deze ontwikkeling krijgt extra vaart omdat het wordt gesteund door het ministerie. Des te interessanter om mensen die hiermee bezig zijn op HR met HOT samen te brengen.

Anne en Peter geven aan dat zij van de uitkomsten van HOT, inclusief deze bijeenkomst, een artikel willen schrijven. Zij nodigen uit om met suggesties te komen of als medeauteur aan te schuiven.

Bedankt iedereen, we gaan verder met HOT, eerst weer in kleine groepjes en ook op gezette momenten in verdiepingssessies. Graag tot een volgende werksessie waarvoor Peter ons ter inspiratie de YouTube versie meegeeft van Paulo Bliksteins TEDx-speech: [One Fabrication Lab per School: the FabLab@School project](#)

Verslag: Liane van der Linden (HOT vanuit Creating 010)

PIRATE MEETS ADVENTURER

Reference to Chapter 4.1

Summary:

Date of experiment: June-2015 Lithuania



Pirate meets Adventurer; image and drawing Nathan Back-Chamness 2015

In 2015 I was educating at LT Ranch Project Space in rural Lithuania. I guided a student by both switching roles. I was a 'Pirate' he an 'Adventurer'.

His project involved examining the rural settings and allowing the space to transform his way of designing. He didn't design the space, the space designed him. He used his 'real' architectural knowledge but combined it in his new role as an 'Adventurer' with new unconventional input. The LT

Ranch¹⁹ provided a canvas for switching roles in an unconventional landscape.

The Adventurer' grew to become a very personal journey of myself, my enjoyment and the way I design. (Nathan Back-Chamness)

EVALUATION

This educational set-up was in fact the first pre-experiment of switching roles as a pedagogical tool. In order to become the Adventurer he had to unlearn certain Architect understandings. In this experiment the student was able to deconstruct his 'architectural' role because I was also becoming a 'Pirate' instead of his 'design teacher'. It felt as if I wasn't educating him, just empowering him to switch roles completely. This process took us a week. The setting of the Lithuanian fairy tale landscape provided a narrative that helped in switching roles.

This experiment wasn't done in an intentional setting but happened very intuitively. However this provided me a great understanding of the importance of switching roles. It is made me realize that in order to do this in is important to have a 'Narrative'.

In this case 'my narrative' of being a Pirate helped Nathan to become an 'Adventurer'. 'His narrative' of the 'Adventurer' helped him in 'unlearning his architectural habits.

¹⁹ LT Ranch Project Space in rural Lithuania, is a remote, ad hoc yet considered landscape for spontaneous spatial research, experimentation and cultural events related to art, architecture, film & landscape. Each year students are invited to do architecture / projects there. These project could relate to their professional field, however the intention is that by being in a complete new setting / perspective the students can reflect on their practice and take a new position. I collaborated as a designer/educator in this project in 2008, 2014, and 2015. (<http://ltranchspace.blogspot.nl/>, accessed Mey 2017)



Pirate meets Adventurer; image and drawing Nathan Back-Chamness 2015

BRAINSTORM SESSION WITH ARNE HENDRIKS

Reference to Chapter 4.1

Summary:

Date of experiment: 27 January 2017 Rotterdam

The workshop wasn't setup as an experiment for this research. However it manifested as such since it contained a lot of parameters that contribute to the Educational Project

This workshop - was collaboration with artist Arne Hendriks for the Symposium 'Agents in the Anthropocene'. We asked the participants to

20 ABOUT THE WORKSHOP:

Transdisciplinary Research & LABs. Tools to Hunt for Tools: The Artist/Designer as Contemporary Hunter/Gatherer of Vital Alternatives?
 Humanity seems unable to overcome its basic tendencies to destroy the planet. In a hostile socio-political climate we are in a continuous state of reinvention to try to prevent this. Can artists and designers provide alternative structures, memes and practices that allow man to change course and reassume a balanced position with respect to ecology? And what would constitute such a practice? Is the situation so urgent that it can't be solved by a single discipline? Can artists and designers spark these alternatives in a LAB by experimenting together with people from other disciplines? Is the contemporary role of the artist/designer a manifestation of the hunter/gatherer, or rather a researcher/gatherer, providing an alternative way of living in direct confrontation with relevant disciplines, while creating knowledge to share with the community? The intention of this brainstorming session is to create a better understanding of the mental and physical tools needed by the contemporary hunter/gatherer-researcher/gatherer and to give shape to new ideas by deconstructing, constructing and abstracting them in clay.

21 Agents in the Antropoce, Transdisciplinary Practices in Art and Design Education Today: organized by Master Education in Arts at the Piet Zwart Institute. The symposium intend to explore the role of the art and design fields as active agents within the discourse about the so-called 'Anthropocene'. Special focus will be given to the notion of transdisciplinary research—with its cross-pollination of art, science, design, media, ecology and different cultural disciplines—arising as part of the (critical) discussion about the Anthropocene.

have a conversation about the changing practice of the designer/artist by reflection upon it from their personal situation. Artist and designers experiment with alternatives in various 'Labs' needed for new knowledge in order to address ecological issues. In this brainstorm we provided people the ability to work with clay and allow for this to sparkle a conversation.

We asked to think about:-COMMON GROUNDS : ROLE
-COMMON GROUNDS : LAB -COMMON GROUNDS : ENVIRONMENT
-COMMON GROUNDS : ANTHROPOCENE



Working with Clay during the Brainstorm session image: Piscaer Jan 2017

EVALUATION

The brainstorm didn't conclude with one general solution or idea. It generated just more questions in an individual level. People started talking about the meaning of their 'common grounds', what they had in common, and their differences. This could be perceived as very unsatisfying. However I find it of relevance that participants started questioning their own practice on a small micro level and start connecting this reality to that of the others. The workshop provided a moment to realize the significance of acting small and connecting to other by a mutual common ground.

Second the workshop made me aware of the potentiality of using others senses. People started working with the clay very unconsciously. A lot of people did use this tactile medium, and it literally helped shaping their thoughts.

This workshop contributed to the Educational Project because it made me aware of the importance of connecting to the senses and how this helps in directing new insights.

EDUCATIONAL PROJECT: GO TO THE MOON AND BACK

Reference to Chapter 4.1

Summary:

Date: December 2016 Rotterdam

This experiment was situated with the Master Education in Arts course 'Making things Public'. Within this activity I tried to experiment if my public could experience this process of unlearning. I asked my public to participate in 8 steps. The images below were shown during each of those steps.

Step 1: Find your routine. What task do you do everyday? For example: coffee at 10 in the morning? Go to the toilet. Start the day with mailing. Etc. Take this routine with you in your pocket in our trip.



About Routine: As a professional you develop routines by doing things (experience) over and over. As an amateur you didn't develop these routines yet. These tasks are embedded without questioning how and what for. It is taken for granted. However to be able to unlearn by deconstructing them, you can redefine their value and create a new perspective on a complex problem.

Step 2: Put on a helmet. We will go on an adventure. You need a helmet to keep you safe



About Helmet:

I choose some strange hats, because I hoped by putting them all on, we all feel ridiculous, but we are in it together. In order to feel vulnerable but to trust each other. The hats are also quite warm, it makes you feel to be in a different setting. Perhaps helps in imagining to be an Astronaut.

Step 3: Choose a difficult task.



Complicated:

You have to choose a difficult task from that cockpit. By doing so you will forget about "the routine you just put in your pocket".

Step 4: Lets go.



Step 5: How does it work on the moon? Take the routine out of your pocket. How does it work on the moon with different parameters?



Deconstructing:

With taking the perspective of the different parameters (different gravity, no oxygen, other time frame etc.) on the moon, it makes you able to deconstruct the 'routines', or element that you take for granted. Routines and embedded knowledge simply work completely different under these different settings. In order to find new solutions you have to unlearn these routines and embedded knowledge.

Step 6: Have a look at 'our spaceship earth'. Reflect on your findings by having a look at the fragile small earth.



Reflection:

What is the value of things? What is significant? What is essential?
Understand the 'whole' interconnectedness of things on Earth. The earth is an ecology. The distance creates this awareness and the ability to zoom out and reflect upon it, by simply not being part of it yourself.

Step 7: Lets go BACK!!

Step 8: Can you 'reconstruct' the routine you took to the moon?

Reconstructing:

I think the constant loop of learn-unlearn-learn is important in order to change something. By this way you connect visions to reality, and make the knowledge tangible.

EVALUATION

In this experiment I experienced how people responded to the conditions I intentionally set. I felt that people trusted me.

Afterwards I realized that this was an even more important element than I did foresee. Not only for the execution of it, but even more in order to unlearn something.

I also had the idea that I gave enough elements to trigger the imagination. It was important to me that everyone experienced the activity (really felt to be on the moon). The pictures were enough to create that atmosphere. However I do realize that it was enough in this context. Where people trusted me and are quite willing to cooperate. In another setting I will need more time and more images to build upon, in order to create an idea of 'being on the moon'. You need to sense you're really there. I would have liked to talk more about the deconstruction of the 'routines' on the 'moon'. Since I think it could have created a discussion also about possible solutions. I also would have liked to spend more time on reflecting on 'these possible solution' with 'taking a look at earth'.

GO TO THE MOON AND BACK

Reference to Chapter 4.1

Summary:

Date: 13 February 2017 Utrecht

With design students HKU 2nd year.

FEED-BACK:

I received feed-back from the students and the teacher (Kirsten Kentler). First the workshop took place at the beginning of a new assignment. This made it difficult to connect the workshop to their context of the assignment and the academy. However they connected it to a more general position of design and how this affects their own position. In the discussion the students talked about their role as future designers. What do they want their practice to be? By being on the moon it helped defining what other kinds of positions within design could be possible. Since on the moon there was no predefined context of what design 'should be'. Its about what design can contribute. This discussion on 'the moon' was very interesting in regard to current roles of design as the students regarded those roles very fixed and drifted away from the 'context' (the earth) it is positioned on.

The workshop itself wasn't contributing in 'unlearning' within the current context of their assignments. However the discussion after 'we all landed on earth again', gave some great insights as well. Because on 'Earth' the students were able to connect the discussion about the possible roles of design to their own personal life's. This revealed their intrinsic motivation of wanting to be a designer. What triggers them in general? How do they work? What is the process. The earth provided a canvas to zoom in on their personal reality. This is important because it reframed 'learning' and 'unlearning' as it questioned the embedded ideas about what design is.

Second; the images and the story provided enough to trigger the imagination. However they felt it would have helped to have more film and sound into the workshop in order to trigger other senses as well.



Leaving Earth from Utrecht at location 'de planeet' (the planet)





Arriving in Utrecht , Whilst looking to the Moon again.

GO TO THE MOON AND BACK

Reference to Chapter 4.1

Summary:

Date: 14 February 2017 Eindhoven

With design students Design Academy Eindhoven 2nd year



Photo Marina Martinez Garcia.

I used specific images of 'returning to Eindhoven' that showed the incredible amount of light that is produced each night in greenhouses, and used more references fitting the context of the students. Like the different concept of 'time' on the moon. (On the Moon one day is as long as a 'month' on earth)

FEED-BACK:

I received feed-back from the students and the teacher (Marina Martina Garcia). First they found it a pity I didn't give them enough personal context about the workshop. They would have liked to hear more about both my research and work. This would have helped them to get a context of the

reasons behind the workshop. Concluding that the workshop isn't a framework that could be given by anyone. It requires a personal context.

Second the workshop was done as a collaboration with Marina Martina Garcia. The topic of her lessons were 'Ecology'. This workshop fits that context. That made both this workshop as well as the other classes more effective. In the discussions with the students 'on the moon' we talked about abstract notions like time, space, scale. These notions are of importance to realize and 'disconnect' (unlearn) from as they determine our concepts and embedded knowledge that makes it otherwise difficult to understand ecology and the relationship of design toward it. Being on the moon allows to zoom out towards these notions. On earth we discussed how these abstract notions (time, space, Scale) are really embedded concept that are not often enough examined within design. But that it urgently is needed in order to understand ecology.

EVALUATION:

My personal input of the research and my practice are giving a context to the workshop. The workshop isn't a framework that could be implemented by everybody. This made me aware of the fact that this is a micro intervention.

The specific context of this workshop (the collaboration with Marina Martine Garcia) highlighted the references in this workshop towards an ecological awareness

Leaving Earth from Eindhoven at location 'de Witte Dame' DAE



Returning to Eindhoven



Returning to Eindhoven: Looking back at the moon.

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