LEAVE YOUR MARK

An interactive system of blackboards placed in a public space as a tool to let people express themselves, leave their mark in the hope of increasing their sense of connectedness and inclusion to the space and the people in that space.

Sophie Brenny
M1.1_R1 Industrial Design student
s099008

Coach: Jun Hu
04-03-2013 / 28-06-2013

Research Project Process Report

ABSTRACT

This section of the report is intended to explain to the reader the design process of the project "Growing Systems" project.

The objective of this research project was to explore ways of increasing people's feeling of inclusion and connectedness in a public space using a public art concept as a medium within the constraints of the project description. A concept using blackboards with an added digital element was developed as a research tool.

Through this process report, the author will explain the inspiration for the project, analysing for example existing concepts and forms of self-expression in public spaces. The journey will then take you through the process of how the concept came into being through rigorous academic research, thought and analyses. The report explains all the relevant aspects of these processes.

Details of and insights on the research methodology results will be found in the Research Paper section of this report.

PROJECT DESCRIPTION

Systems design is a new challenge in the field of Industrial Design. It breaks the 'one person – one product' dictum in favour of a system of (interactive) products consisting of many 'nodes'. The systems under investigation are woven into the social fabric of our lives and form, more than ever before, an integral part of it. Societal relevance is not optional but a necessity for this new field of design.

The systems that we envision grow. They build on the old, are ready for the new and are open for appropriation by their users. The design challenge is an open one and is best tackled by an experiential approach.

Currently the city around us is coming to life in the digital world. How this digital city becomes meaningful to us remains to be seen but the first signs point towards visual solutions like augmented reality (e.g. layar) or SMS-messages. Imagine and go beyond scenarios like a cinema that contacts you with a deal on the last to tickets to the movie that is about to start when you walk by, or a grocery store that advertises their vegetables that are about to expire. While these examples illustrate part of this project, the project is not just about location dependent advertisement or location based services per se. You are encouraged to find new areas for this system to grow in, within the limits of the design challenge.

One of the ways to approach it is for example interactive public art installations. The current development in digital public arts involves a significant amount of new carriers in not only material, but also in technology, resulting new dynamic and interactive forms that require the artists and designers to construct their work from a system view and with a good understanding of human-system interaction and related interface technologies. It is no longer about carving stones and casting bronze; it is time to sculpture the interactive experience. The design challenge in this project is to find ways to design a physical locus of interaction, a specific, physical device that opens the 'digital' action possibilities of a city to the physical. While the context is the city, it is up to the designer to focus the design challenge within that context.

The primary challenge is to let a 'generic' device grow into different meaningful forms and shapes dependent on the context of use, or the specific location in a city. The task is to operationalize the concept of context dependent action- possibilities.

Inspired by the theory of affordances (ecological perception) and phenomenology that identify that the (physical) world is a meaningful place and that focus on the lived experience we want you to focus on meaningful and rich interaction. Think 'morphing' shape rather than changing graphics; think physical controls rather than touch screens; think specific rather than generic.
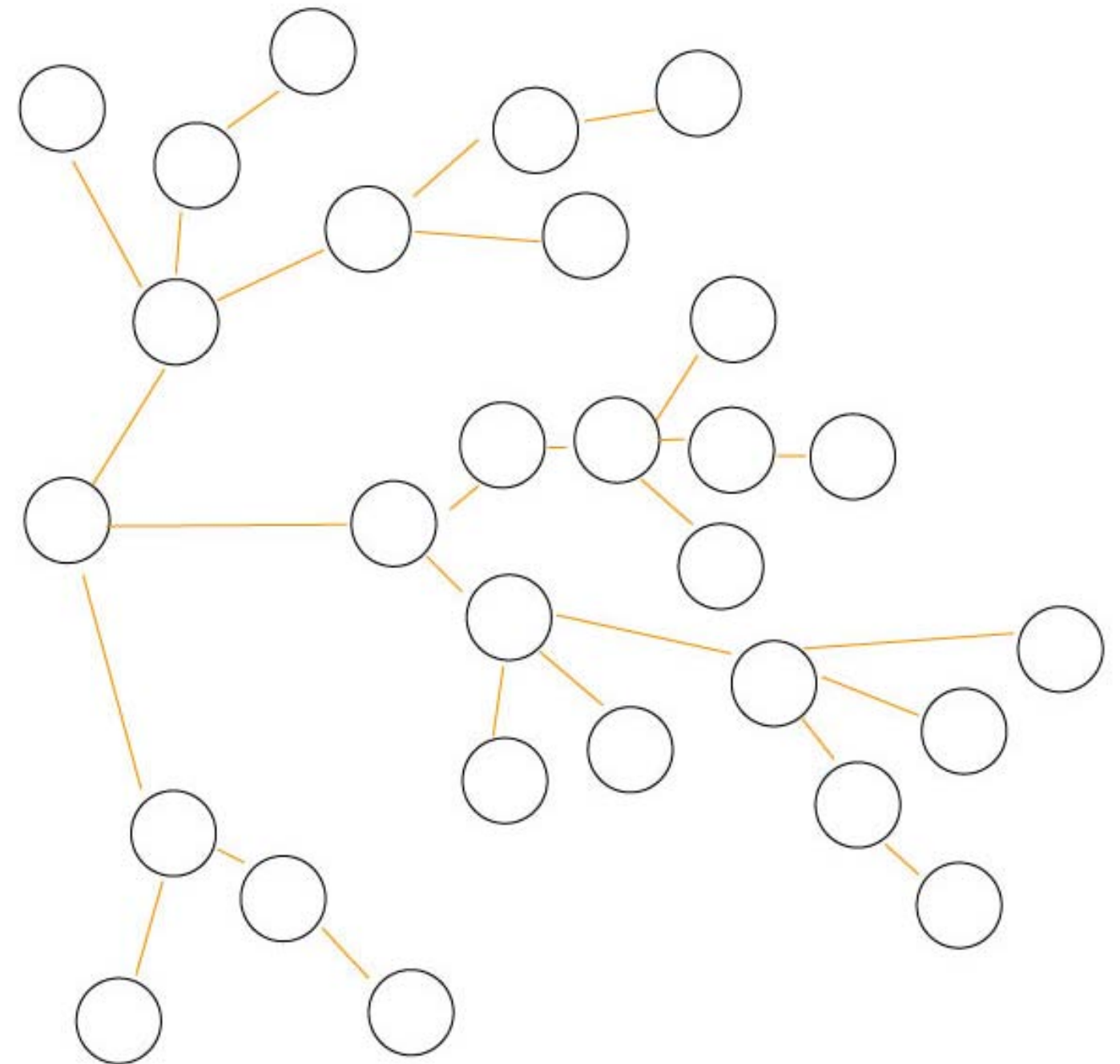
INTRODUCTION

The project Growing Systems was conducted in collaboration with the DESIS (Design for Social Innovation and Sustainability) lab of the TU/e. As the project description stated, the overarching goal of the project was to create a system for a public space.

This being a Research Project, emphasis was put on a research question, the testing and the results found and their interpretation. The concept developed was used as a tool to test for the research question. Interest in social meaning, humanised and social interactions and self-expression were the key drivers of the project.

Through this process report, you will come to understand the path the author has followed from initial inspiration to final concept. This includes the frame of mind that this project was initiated with, inspiration sources, background research into various themes, tools and theories and how both expert input and a two-week workshop in China influenced final design choices. In concluding this section, the final concept will be explained with the measurements scales that would accompany it for the research aspect of the project along with the prototyping phase, as well as with a concluding reflection from the author.

Enjoy your trip through the highs and lows of the evolution of the concept "Leave your Mark".

TABLE OF CONTENTS

MODULE 1
INSPIRATION

The first module of this semester was "the Strategic Value of Design". Over the course of the class this designer came to see the beauty of emotional design and the value of meaning in a design concept. This was very influential on the vision of design as well as the subsequent choices made by the author during the course of this Research Project.

2

STARTING INSPIRATION

2.1.
PERSONAL INSPIRATIONS

To get inspired and kick start the project, I considered what interested me form both an art and public structure standpoint.

Based on the project description, an important initial step was to review and consider art forms and public structure that were found to be inspiring. For this this designer combed through her stock photo library to look at what was recurrent, what seemed to be eye catching across the photos in the library.
This was also done with numerous photography books in order to bring variation from personal photos.

A major trait that stood out through ensuing evaluation was the recurrent theme of windows and doors in public structures. Another structural aspect that was also recurrent was the opposition of traditional versus modern aesthetics.

Evaluations of paintings from van Gogh and Monet showed that colourful vibrancies were intriguing and inspirational for this designer. Art from here on was interpreted as a means for self-expression.

This idea of self-expression influenced the further inspiration as well as the search for a central concept as my assessment progressed.

2.2.
SELF-EXPRESSION INSTALLATIONS

Everyone has seen graffiti or sculpture in their city. Banners, shields and flags could also be seen as forms of self-expression in public spaces as a city's' identity.

Next to these forms expressions there are also designs or organized events that give the individuals in the space a chance to express their individuality and share their thoughts with their community. Flash mobs are such an example. People expressing themselves in a creative way in the public space can been seen as an event that has some history.

The "fence" at Carnegie Mellon University (CMU) in Pittsburgh (Pennsylvania, USA) is a good
example of such a form of self-expression. This cement fence can be "captured" by
 students and different associations by following the rules of the fence.
For example, you can only paint it between 11PM and 4AM and 2 members of the group who wants to paint it need to be guarding it at all times during the day before the
painting, if this is not the case, someone else can "steal" it.

The fence has been used for promotion, sharing ones opinion on a political situation and was even used by a man to ask his girlfriend if she would marry him. The CMU student body has come up with crazy, artistic and fun ways to paint the fence. It is recognised as the most painted structure in the world changing almost daily.
Second photo by (Tau Beta Pi, 2013)

Another inspiring design found at the beginning of the project was the Obliteration room by Japanese artist Yayoi Kusama. Every visitor to the space who is provided with a coloured sticker dot can than choose to put it where ever they wish in the space personalizing the white livingroom. This means that every dot is the expression of the visitors experience in that space (Jobson, 2012).
Photo by (Sherwood, 2012)

Community Chalkboards created by the Company Site Works in Charlottesville Virginia, in the United States of America (USA) is a public chalkboard where people can share whatever they like. It represents a memorial for the First Amendment to the American Constitution (Johnson, 2012): "*Congress shall make no law respecting an establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of the people peaceably to assemble, and to petition the Government for a redress of grievances*". Photo by (Johnson, 2012)

Candy Chang started the "Before I Die" project after losing a loved one. Before I Die started in New Orleans in the USA. It is a chalkboard with a grid created by the start of the sentence "Before I Die" with room for people to fill in. Anyone who was to walk past this chalkboard can pick up a piece of chalk and write down what they want to do before dying. The inspiring project has since expanded to well over190 cities across the globe (Chang, 2011). Photo by (Chang, 2011).

The projects and others were analysed in a moodboard setting with post-its like was done for the personal sourced information.

3
DESIGN RESEARCH THROUGH PRACTICE

Design research through practice is a method opposite to most typical research processes, for this the author consulted Design Research Through Practice to initiate out of the box thinking on the subject of research and how to conduct it. All of the following text is an interpretation by the designer of the information shared in the book "Design Research Through Practice: from the lab, field and showroom".

• Design Research is a type of research that is being used more actively in the design field over the course of the last decade.

• Design research gives researchers a chance to do a systematic description of data, evaluate design statements and is driven by understanding rather than data. Such constructive knowledge helps designers discover unnoticed things (Ilpo Koshkinen).

• Tools used are numerous and need to be combined. This includes constructive design, affinity diagramming, analytical induction, collages, mood-boards, interviewing & observation (Ilpo Koshkinen).

• Prototypes used in Design Research settings can be called research prototypes. These are physical hypotheses that test theories and allow researcher to find valid or relevant conclusions. These prototypes are designed for an experiential level and are thus research ready but not production ready. When testing, the main focus for the users should be on the feel of the interactions and the thinking behind the prototype, not the superficial aesthetics of it (Ilpo Koshkinen).

•Design Researchers are seen as social scientist as they look at social interaction, which takes them to social processes where they mediate communication of various social aspects. This all is interpreted in a deep understanding of people. To understand people you have to comprehend social influences, it is necessary to look at the socio-cultural organisation of human reasoning and the actions associated with it (Ilpo Koshkinen).

• Aside from the social and cultural understanding, design researchers also have to comprehend the "emotional movement". This relates to using memories and experiences of the target group, being able to understand and be sensitive towards them. This helps designers make sense of meaning and allow them to act accordingly giving them an empathic grasp and interpretation of facts (Ilpo Koshkinen). This aspect relates closely to the findings of this designer from the module mentioned at the beginning of this report.

• When it comes to art, the book states, quite rightly, that it has moved out into the world, away from the art galleries. Design Research takes inspiration from art by breaking social conventions, using it as a rich intellectual resource and borrowing thinking from art. (For more about the research done on this book and the theory inside, please see Appendix 16.1.). This fact relates closely to the goals of the project.

The notions discovered in this book became influential for subsequent design choices like that of giving people a creative outlet as will be explained later in chapter 7. Brainstorming.

4

THE FUTURE OF CITIES AND CHINA

Since the context is the city, what are the trends for the future of cities? Specifically how will cities evolve in China as the project has a close link to that context? The following text is a personal compilation of information distilled from the following sources:
"City": (Dubernard, 2012); (Mitchell, 2000)
"Articles about China": (Halper, 2013), (Osborne C. , 2013), (Osborne (. C., 2013), (Harper, 2013), (Jana, 2012), (Falk T. , 2012), (Falk (. T., 2013), (Vince, 2012)

• Cities are evolving because of a massive growth in the urban population and the rapid pace of technological evolutions (Mitchell, 2000).

• Cities, especially in China are receiving massive stimuli money to support their growth and evolution (Osborne (. C., 2013) (Osborne C. , 2013) (Falk T. , 2012) (Falk (. T., 2013) (Vince, 2012). This leads to the development of services, which creates new networks and requires participation from the citizens. (Dubernard, 2012)
This growth will create a more interconnected, equipped & intelligent city. This evolution of intelligence will relate to high tech innovations and smart appliances (Dubernard, 2012) (Mitchell, 2000) (Halper, 2013) (Harper, 2013).

• It is impressive to think that by 2025, 6 of the 10 most dynamic cities in the world could be in China (Falk (. T., 2013).

• Having to pay attention to an increase in the want of a better quality of life can use designers on several levels and situations (Vince, 2012). Creating this improved quality of life relates closely to interactions. These interactions can be relationships, digital communication, face-to-face or even human-to-human at a distance (Vince, 2012) (Mitchell, 2000).
It is this designer's opinion that interactions should be more personalised, seemingly intimate even to some extent.

• The most important aspect to create a better quality of life in cities is to look at the public spaces (Vince, 2012) (Mitchell, 2000). These need to have lively street, have affordance and be socially inclusive and not excluded (a lot of biking, walking ect…) to emphasis that not only the rich can have a good quality of life (Vince, 2012).

(For more about cities and the future of Chinese cities, please see Appendix 16.2.)

Tech Trends 2012

5 RESEARCH PAPERS

5.1.
READING AND ANALYSIS

Slowly it was apparent that the interest of this designer lay in a playful activity in a public space of a city that needed to be a system, which somehow motivated people to do something to express themselves in order to feel more included. This understanding, in turn, lead to additional research in various subjects: emotions, motivation, public spaces and systems.

Mind maps made from the information related to each of these subjects were evaluated. The information that was relevant for the project at hand guided the creation of a second mind map. These mind maps were than used to write coherent text about the subjects. This process helped the author to develop and maintain a more holistic view on what was relevant for the direction of the research project itself. (To see these various initial and secondary mind maps please see Appendixes 16.3. through 16.8.)
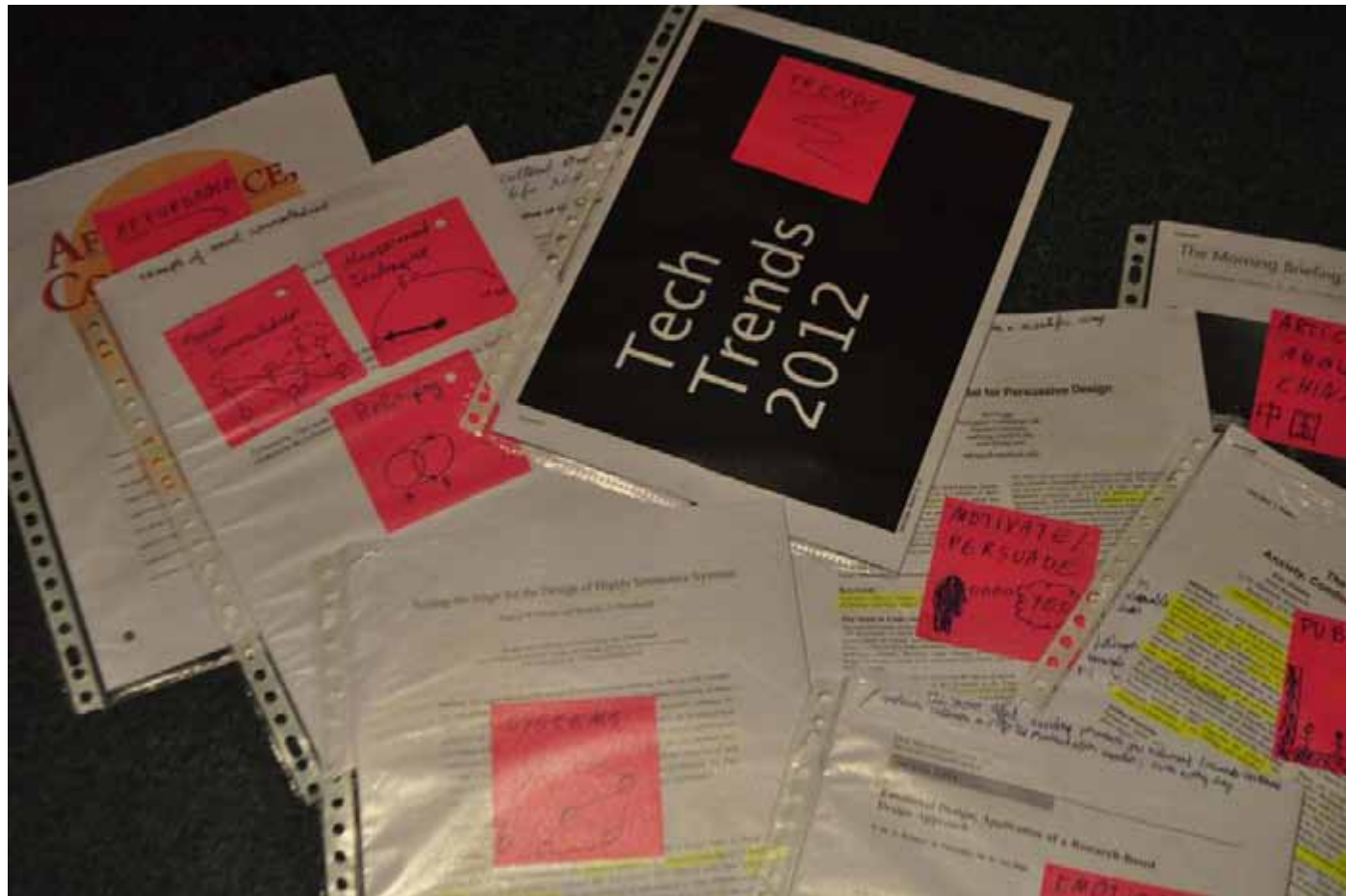
5.2.
PUBLIC SPACES

Sources of the ensuing information formulated in words of the designer: (Ben Schouten, 2013), (Eric Paulos E. G., 2004), (Feng Wang, 2011), (Saul Greenberg, 2001).

• Art in public spaces has changed a lot over the past 100 years. New media types give the artists a very big freedom of material and in the process of its development. It transforms our relation to people and spaces in public and uses new technology like: mobile networks, social media and smart/flash mobs (Feng Wang, 2011) (Ilpo Koshkinen).

• Art systems are art installations where the viewer becomes part of the artwork, providing an intended experience. These viewers give art new meaning and value through the artist's sculpted interactive experience (Feng Wang, 2011).

• The public spaces of cities are closely related to their culture (Saul Greenberg, 2001). The culture influences the way we think about public spaces. Culture also determines that our needs may not always be approached in the best way. The social aspect of public spaces requires actors and activities (Saul Greenberg, 2001) (Eric Paulos E. G., 2004).

• People formulate their personal meaning of a public space through observable cues (Eric Paulos E. G., 2004) (Saul Greenberg, 2001). By looking at the differences between public/ private; large/ small; day/night time; loud/quiet; crowded/empty. Furthermore if people feel uncomfortable in a public space they will be quick to get their mobile phones out. The people around us contribute largely to our perception of the space and of comfort. (Eric Paulos E. G., 2004)

5.3.
SYSTEMS

• Public spaces in cities can also be seen as a place where people can play. People like to participate in social activities (Eric Paulos E. G., 2004). This needs to be voluntary, have a low threshold, offer something for everyone, easy to step in and out as well as flexible in its requirements. Playful physical activities furthermore can be influenced and encouraged by using social embeddedness and playful persuasion (Ben Schouten, 2013).

• Social embeddedness requires a type of competition, a challenge, needs to be simple, stimulate interaction between people & fun. Playful persuasion uses competition, simplicity control, sensation, lack of rules and the freedom of expression to trigger people to participate (Ben Schouten, 2013).

• This type of activity can be stimulated by intrinsic motivations, which are essentially embedded in existing social structures and activities (Ho, 2012) (Richard M. Ryan, 200) (Eric Paulos E. G., 2004).

For more on this see Appendix 16.9.

The following information is a personal interpretation by the designer of these sources: (Joep (J.W.) Frens, 2009), (Ho, 2012)

• Systems have started to be introduced into homes and offices. They allow people and products to be connected in a new way. Systems' impact on society is high. They need to have an integral design and should be based in the reality of our lives (Joep (J.W.) Frens, 2009).

• The opportunities open to system design are varied. Amongst other things it allows for a meaningful and non-collocated design. Designer can perceive action possibilities and new interactions that are unobtrusive (Joep (J.W.) Frens, 2009). Photo from the workshop Light Through Culture

• When designing for systems it is important to note that the approach should be multidisciplinary and experiential. It is through hands-on Research-Through-Design that is geared towards prototyping and testing that the best systems will be designed (Joep (J.W.) Frens, 2009) (Ho, 2012).

• Concepts should also fit the context they are meant for. As reactions and the system itself is perceived as being situational variable (dependent). Systems should go with the physical and the social environment the system is being designed for and thus should seem seamlessly woven into our social fabric (Joep (J.W.) Frens, 2009) (Ho, 2012).

• A designer can use extrinsic and intrinsic motivation to stimulate the ¬use of a system. Extrinsic motivation starts rom variables that are outside the person. The perceived usefulness of the system influences if people will participate in or uses it. In such a case, individuals use the system for its perceived benefits (Ho, 2012).

• Intrinsic motivations can drive why people use technology to begin with. It is an internal psychological driver. People will do an activity because of interest as well as for the fun and challenge the activity might offer. This relates to the perceived enjoyment of the activity, which depends on the novelty of the activity. The novelty of an activity can arouse curiosity and challenge users (Ho, 2012).

• People can come in a "Flow" which can be characterised as when people are completely immersed in the activity with their entire being (Ho, 2012).

• "Community based involvement" can also be a great intrinsic motivator. If friends participate, our own comfort with increase. This community involvement is also relevant because people like to share experiences with their peers; people like being part of a community (Ho, 2012). (For more on this see Appendix 16.10.)

This notion of intrinsic and extrinsic motivation as well as the importance of the system being seamlessly woven into our society greatly influenced the thoughts and directions chosen by the designer during the brainstorm session.

bla di bla
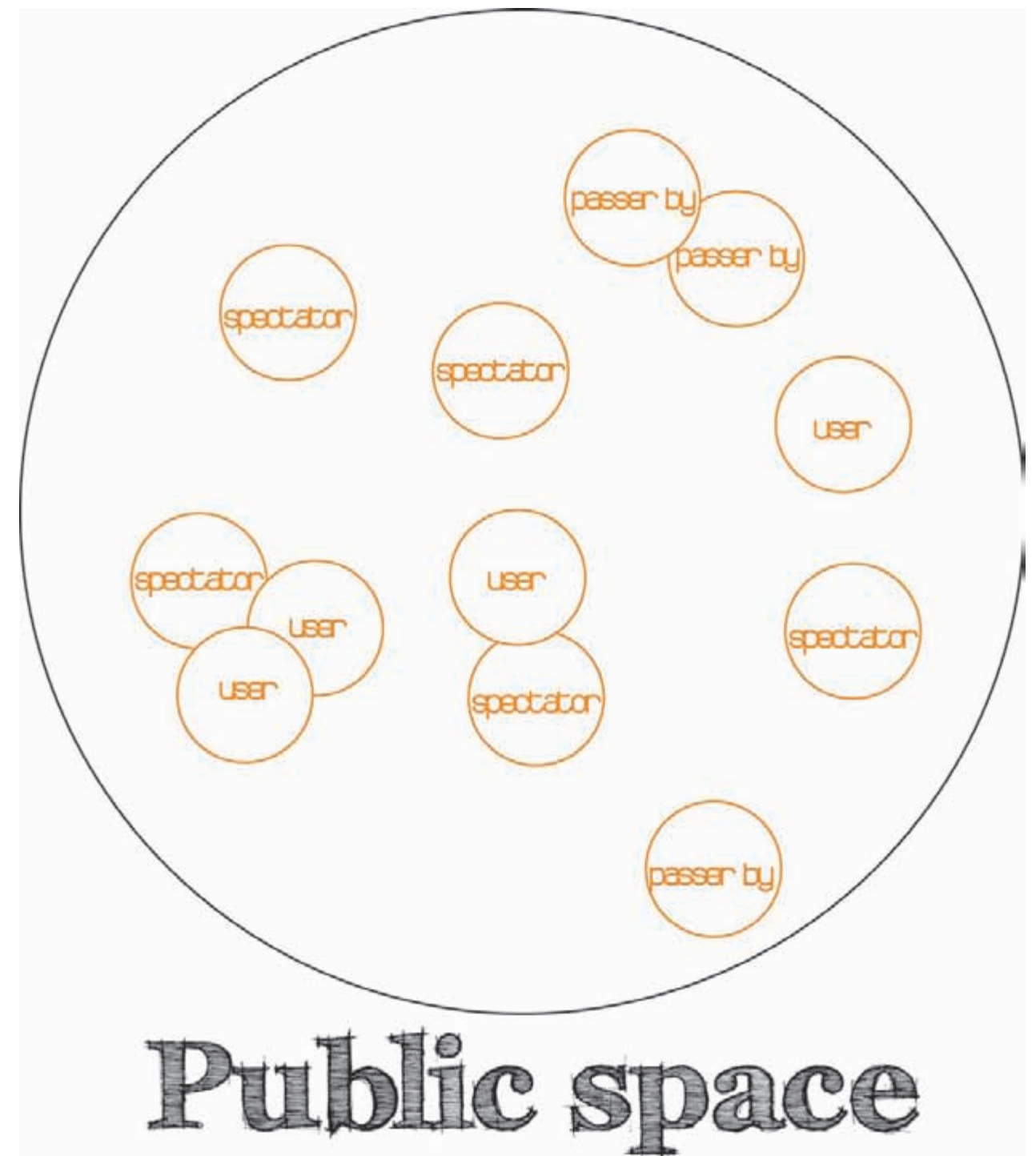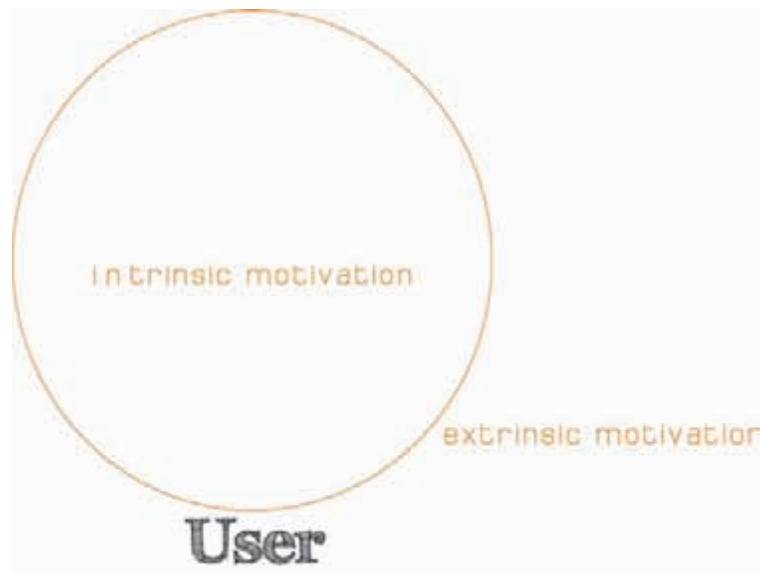
ZUMO

CAN'T BUY HAPPINESS
CAN BUY A BIKE
AND THAT'S PRETTY

6
FORMS OF
SELF
EXPRESSION

Seeing, as the age-old adage says, that an image says more than a thousand words, and having as goal to develop visual communication skills, the next step was to look for and analyse video images as an additional source of inspiration.

To practice visual communication skills, two compilations of movies were created. These compilations were used as an inspiration source to start thinking both "bigger" as well as in more detailed terms about certain aspects of the project. The first movie was about more general inspiration. Movies included advertisements and concept films from big design firms. The topics ranged from colour, interactive projection mapping to co-creative fun interactive installations like "21 balancoire" (Jours, 2012). (see opposite, photo by (Mélanie Mingotaud, 2012, April 20th)
The second movie made was more specifically about flash mobs as form of self-expression in a public space. Original flash mobs were found like a meditation or play flash mob and put next to the more traditional dance flash mobs, purely for visual enjoyment.

A particularly interesting aspect discovered through this search for visual inspiration further strengthened the conviction of the author regarding the human and emotional interaction discovered during the module mentioned at the beginning of this report. The vimeo film "Connecting" (Partners, 2012) speaks about how technology distracts from human contact and how humans should be at the centre of the eco-system. This could create a collective behaviour that is mediated by mechanisms for connectivity

An awareness within the project emerged through this visual inspiration of existing projects, notions and concepts on the subject of self-expression and co-creation to augment the physical space. This subsequently became the enthusing kick off point of the thought process for the project as it related to the project description and the designers' vision on design.

Photo of the previous page by Alexander van Dam.
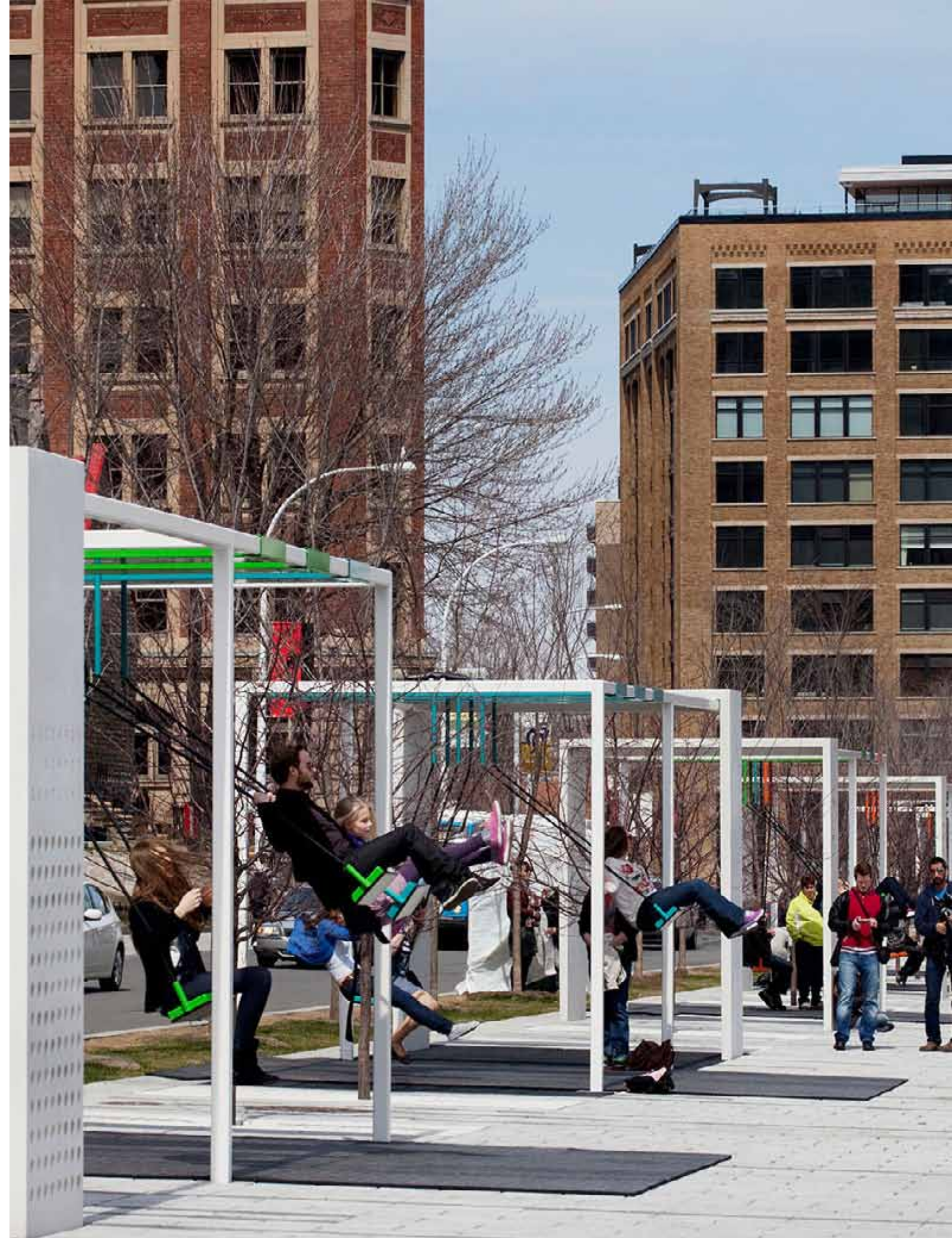
7
BRAINSTORMING

With all of this new information in mind and the setting of a public art installation that allowed for self-expression and co-creation to help people feeling of inclusion a small brainstorm session was done.

Brainstorming with several notions for interactions to augmenting a public space, the initial research question was formulated: How can self expression, social embeddedness and playful persuasion influence how people feel more included and attached to a public space?

This brainstorming lead a concept that would use collaboration between a Kinect and a projector to allow people to "draw" on the public space using their bodies.
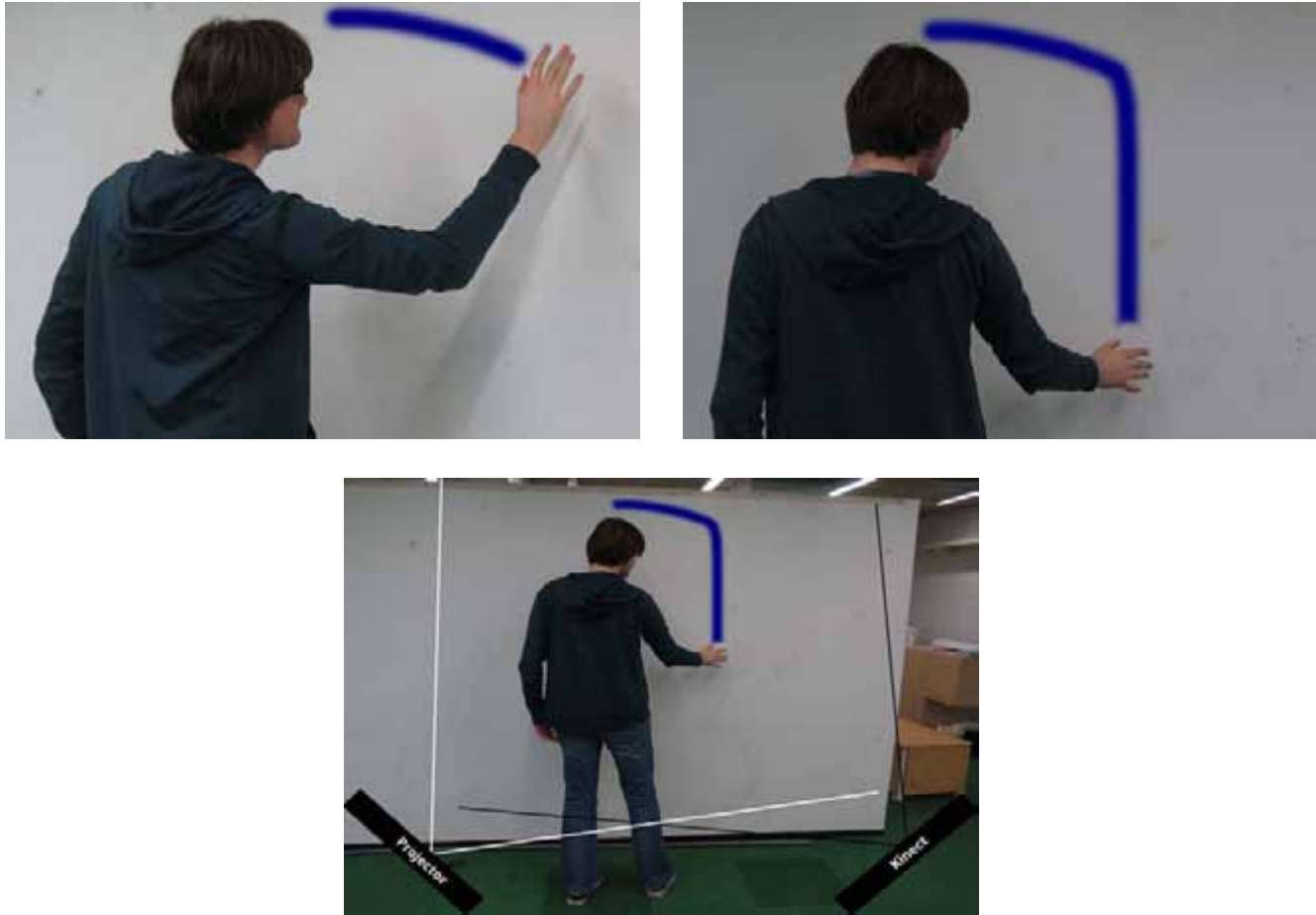
This is the concept that was presented during the "theme day" through a short explanatory film.
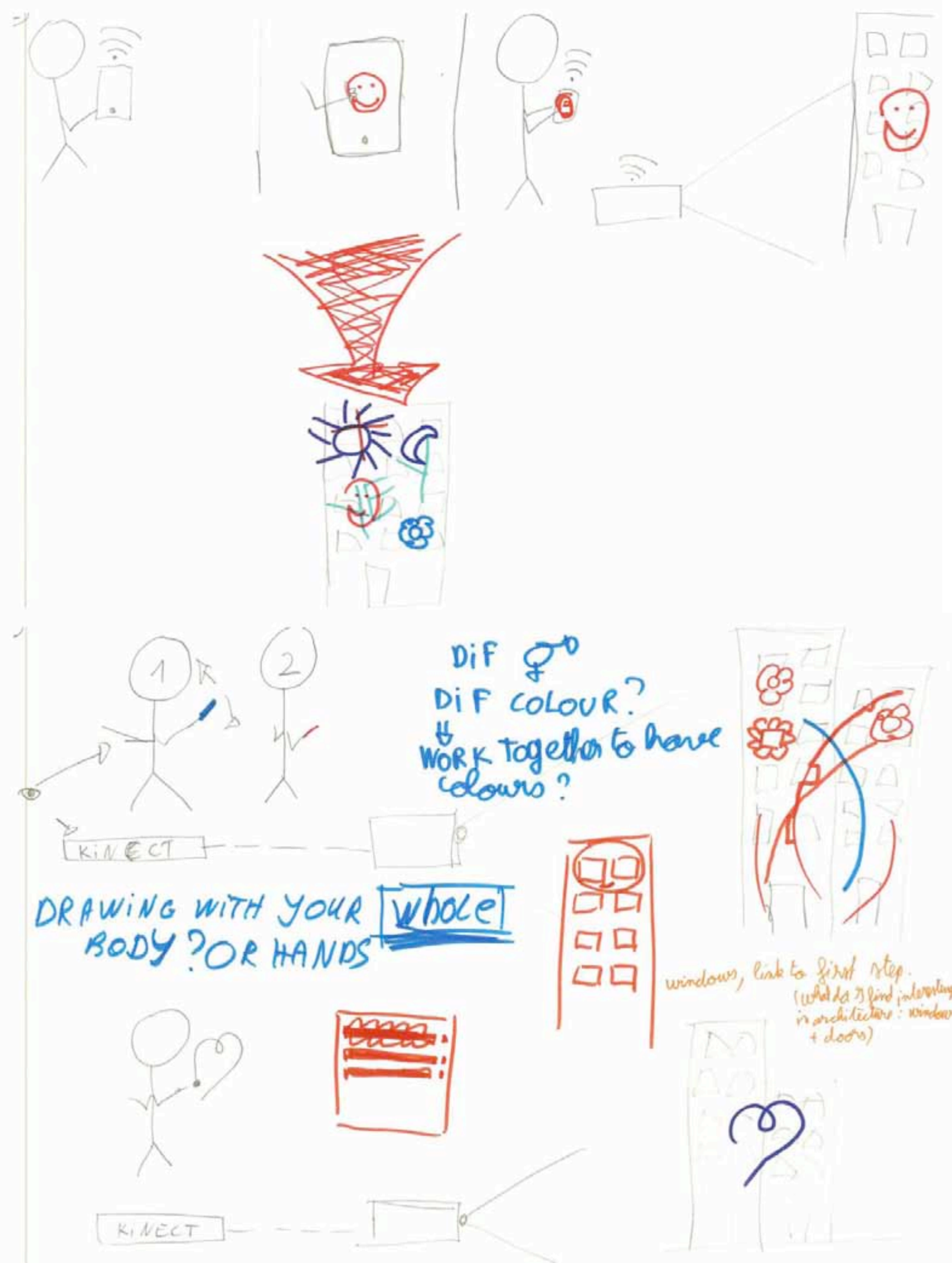
8

A NEW POINT OF VIEW

8.1. THEORIES APPLIED

There were a variety of theories that could be used for the project. (For the mind map evolution of this please see Appendix 16.11.)

• Emotions are subjective. According to Pieter Desmet, everyday products can provoke complex emotional responses (P. M. A. Desmet, 2007). (For more on this see Appendix 16.12.)

• Artists express thoughts, motives and emotions through their work (Feng Wang, 2011) (Ilpo Koshkinen). Hypothesis: if people become the artist this is the same. They will feel emotionally attached to their work.

• In research through design, designers are seen as ethnographers and see the value of doing things. The prototypes for design research are physical hypothesises that test theories. They create valid and relevant conclusions. They need to focus on the idea behind the prototype and not it aesthetics, giving a feel of the interaction. This basis of thought was used for the research aspect of this project (Ilpo Koshkinen). This view later influenced the final prototype.

• Intrinsic motivation is related to the perceived enjoyment of doing the activity. This depends on the uniqueness of the activity. This freshness can arouse curiosity and depends on challenge.
It is essential to note that in nature, organisms participate in behaviour that is exploratory, playful and curiosity driven, even in the absence of rewards. (Richard M. Ryan, 200)

• Another form to motivate people in public spaces is using social embeddedness. This motivates the simple and fun elements of users. It is a way to stimulate interaction between people and lower a threshold by creating competition and challenge (Ben Schouten, 2013).
Playful persuasion is also a way to motivate people to act in a public space. It is created by simplicity, control (how much control do the users have?) and lack of strict rules. It is a way to use people sensation and allow them to express themselves through play (Ben Schouten, 2013). In the final concept for example, user could create their own rules and or games around the concept if they wished to do so.

• There is also Foggs Behavioural Model (FBM). FBM is a psychological model. According to B.J.Fogg, there are 3 elements required to be present at the same time to motivate ability: Trigger, motivation & ability.

Ability speaks to the simplicity, the time constraint and the non-routine nature of the activity (Fogg, 2009).

Motivation speaks to the pleasure and pain effect of the activity as well as the social acceptance or rejection nature of the activity.

Finally there is the trigger. A trigger is something that needs to be present for the target behaviour. Without an appropriate trigger, there will be no activity, even if both motivation and ability are high. The quality of a good trigger is one that we notice. Graphic by (Fogg, 2009).

(For more about the research conducted on motivation please see Appendix16.13
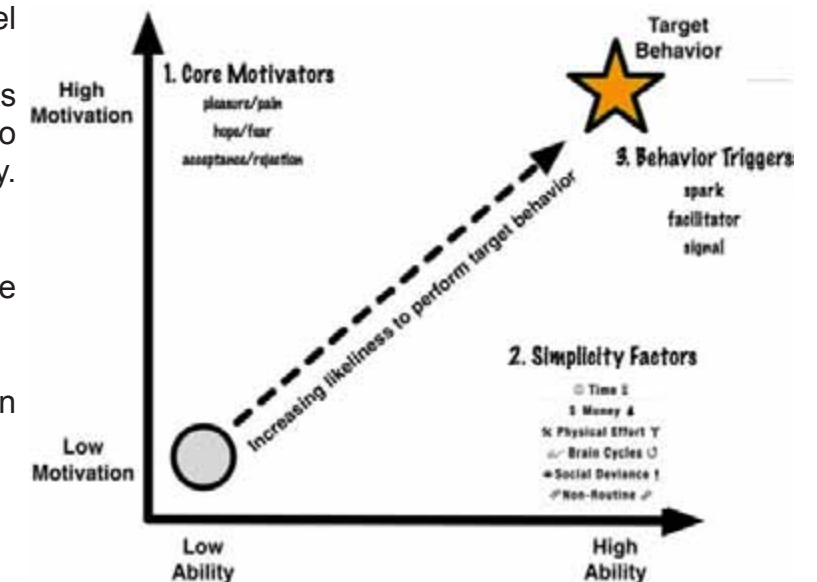
8.2.
TOOLS/METHODS USED

When it comes to development tools, I would like to use elements such as:
• Affinity diagramming,
• Fly on the wall,
• Birds eye perspective,
• Contextual inquiry,
• Interviewing,
• Think aloud protocols,
• Concept mapping
• Concept posters

The final concept in question could use a type of Collaborative technology. Viewers become part of the art. Social embeddedness and playful persuasion could be used to help motivate people to participate. Foggs Behavioural Model, & intrinsic motivation could congruently be used to motivate people.
"Flow" is a tool where people are completely immersed by the activity, which could also be interesting to look at. (Fogg, 2009)

A way to trigger people could also be through "community based involvements" which states that if friends participate in an activity, there is an increased level of comfort. People also share their experience with pears and like being part of a community. (Richard M. Ryan, 200)

To measure the inevitable differences, appropriate measurement tools needed to be identified.

It is important to note that new technologies like social media are transforming our relation to people and public spaces (Eric Paulos E. G., 2004).

(To see the mind map of tools and methods used please see Appendix 16.14.)

8.3.
ANALYTICAL INDUCTION

Subsequent choices were made through the research method of analytical induction

Analytical induction was a way to combine all 4-design process in a research project during the research. Going from Envisioning to Thinking followed by Exploring/Analysing/Validating continuing to making only to continue back to envisioning in a iteration process throughout the research. This open technique allowed for deviation and gave structure to the research to come.
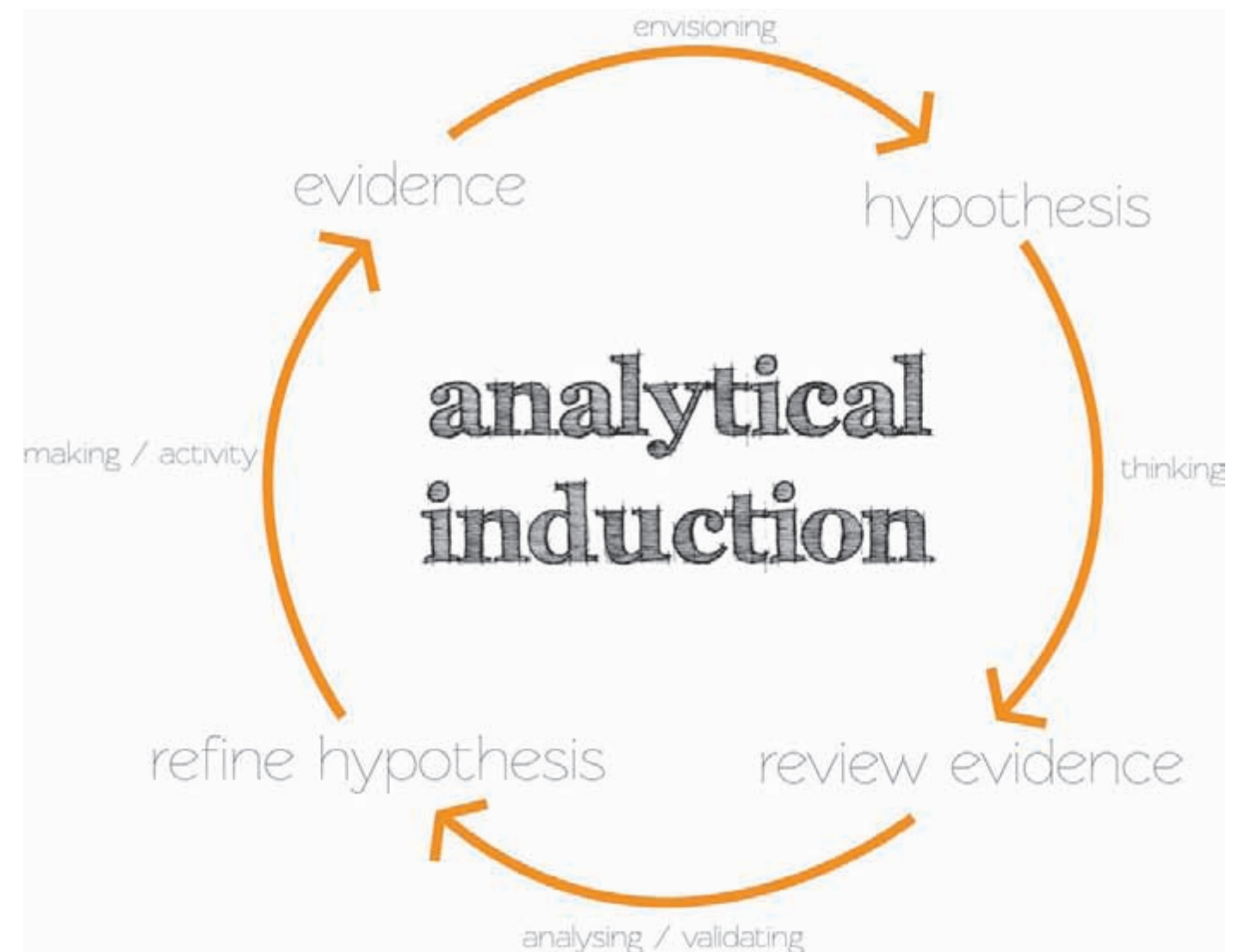
8.4. REQUIREMENT OF CONCEPT

The requirements for the concept in this research project can be divided into 8 groups when looking at the project description and personal interest evolved over the semester.

• The system needs to "**grow**". This means it needs to be intelligent to a certain extent and adaptive.

• It needs to be a translation of the digital world into the physical one, in other words an **augmentation**.

• The interaction needs to be meaningful, rich and fit the context, in other words, it needs to be **seamlessly woven into our social fabric**.

• The concept needs to be **playful**. It should be active and fun, creating a sense of enjoyment. This playful aspect also need to be voluntary form the participants.
=> Hypothesis: if something is fun, it will create a positive emotional experience
=> Hypothesis: A positive and inclusive experience can lead to inclusion and connectedness in the space

• It needs to be **simple**. This means that it needs to be easy to step in and out of the system, have a low threshold and me memorable. (Fogg, 2009)

• It is necessary to note that **social interaction** is very important for the concept.

• It needs to be **socially inclusive not exclusive**.

• When people feel uncomfortable in public, they take their phones out. It is the people around us that contribute greatly to our perception of comfort. When you feel comfortable in public spaces, your **well being is increased**. This is why this is an important aspect of the concept (Eric Paulos, 2004).

(To see the initial and final mind map of requirement please see Appendix 16.15.)

8.5. RESEARCH QUESTION
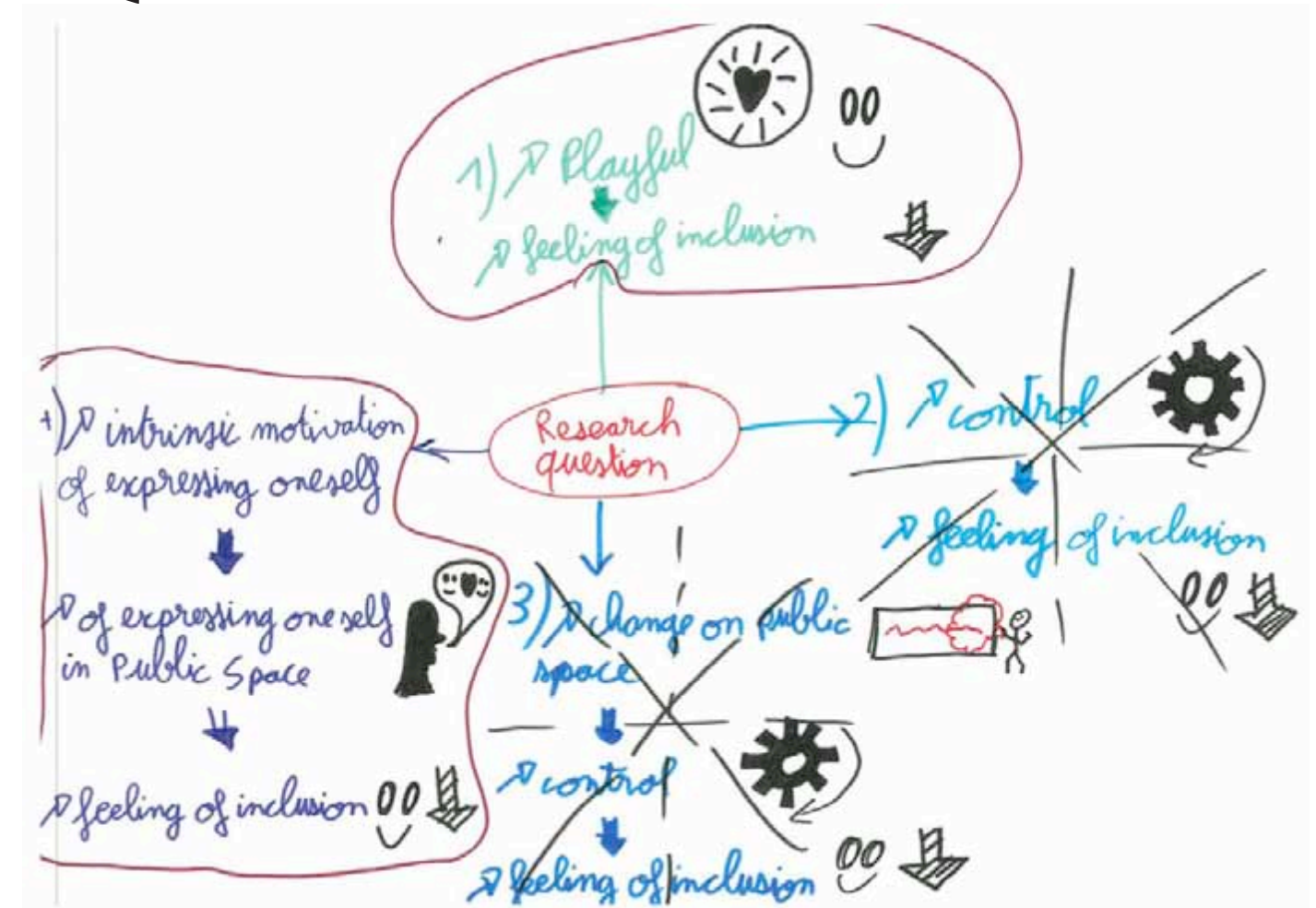
Through analysis and discussion with coach Jun Hu, the final research question was formulated:
"How can I increase peoples feeling of inclusion and connectedness in a public space?"
Giving people a chance to interact in a playful way by "drawing" and leaving their mark behind on the public space explored this question. Giving them a chance to express themselves by playfully triggering and intrinsically motivating them.

9 EXPLORATIONS

9.1.
EXPLORATION 1

The project research question and subsequent concept requirements lead to a series of hypothesis that can be found in the research paper section of this report. (Sophie.M.J. Brenny, 2013) However these hypotheses created the need for initial explorations to further the project. The first question that needed to be answered was:" Are people motivated to share something in public if you give them a tool to do so?"

For this A0 sized papers were hung across the campus with two coloured markers hung at each side of the paper. For detailed results an d set-up please reffer to the research paper (Sophie.M.J. Brenny, 2013). The results suggested that when given the tools and the space to do, people will share their "mark" in the public space in the form of drawings or text. These shared marks being in majority either neurtral or positive in nature.

9.2.
EXPLORATION 2

As discussed in the requirement section of this report, the concept needs to augment the physical world. Buildings in a public space are a mix of geometric shapes brought together to create the geometrical structure of said buildings.

To create a unified augmentation of the public space, factors such as the geometry of the space and the building should be taken into account. However, will people use such shapes if given the opportunity to do so? This brought the process to a second exploration. This exploration was the same as the first, but in this case, each sheet of paper had geometric shapes cut out of it. For detailed results and set-up please refer to the research paper (Sophie.M.J. Brenny, 2013)

An unexpected result from this exploration was people using the inside of the geometric shapes instead of the shape itself to strengthen their drawings of text. The number of people using the shapes themselves to influence their drawings was however higher. This secondary exploration thus suggested that people could be inspired to use such geometric shapes, thus augmenting the space they were in hypothetically in a more unified manner.

10
INTERACTIVE PATINA OF CULTURE, CHINA

10.1.
GOAL?

Design an interactive installation that engages the public in the act of transforming a nondescript public space into a classy dwelling. It lets the space meaningfully grow by the interactions with the public. These interactions range from the intentional to the implicit behavior. In this approach, the public themselves are considered an instrumental factor in growing a valuable and thus socially meaningful public image of their city.

10.2.
CONCEPT

The team member collaborating on the following work was group 2: Yajie Tang, Zhenxiong Zhang, Tingting Zhao, Wenjun Zhao and Sophie Brenny.

Based on the team discussion during the workshop, it became apparent that the Chinese enjoy relaxing after work and feel a need to play and express themselves. Social Blobs is an abstract representation of the traces of social interaction of the people in a chosen square.

The concept showed the social cultural differences between the Chinese and Foreigners in their way of interacting with each other, specifically as it related to personal space. The goal was for people to slowly gain awareness of their own cultural value of social unity in a relaxing and fun way. This concept was born from the observation that the Chinese seem to have a much smaller area of personal space than most people in the West, this was chosen as the patina of culture that was to be represented in an abstract way.

This was visualized through the use of "cells" (irregular circular shapes) projected on a chosen building of the public space. In the particular case developed for the workshop, the building of a mall was chose. It was chosen because it was close to a K-TV (Karaoke TV), where numerous Chinese go to after work to relax. This created a context where people where already looking for fun and distraction and were in a playful mood.

Orange shapes represented a group of people walking together equally. Red represented leadership, where one person seemed to be leading the group. Blue was used for people who were walking alone. The closer the people became in their physical interaction with each other, in other words the smaller the personal space, the bigger the circle. The further away, the smaller the circle.

If two groups of people crossed each other, the cells would "merge" into one bigger cell unless the groups moved away from each other. Once the person left the sight field of the concept, by for example entering the mall, the final cell shape and colour will appear on the building, augmenting. No only using the building like a blank canvas. The visuals would have to adapt to the shape and presence of windows on the chosen building. Newer cells appeared on older ones. The older cells however remain visible under the new ones creating a visual patina of use.

The hypothesis here being that if this installation was to be placed in the Netherlands for example, the final visual would look very different, for example by having less red and smaller circles.

The idea of a meaningful social interaction was present in the thought process of the project Growing systems, however the results of the workshop in China emphasised the importance of this aspect. The realisation for this need to express themselves in a publicly accepted way is a big trend in China according to the Teammates in group 2. This supported and pushed the idea of self-expression further.
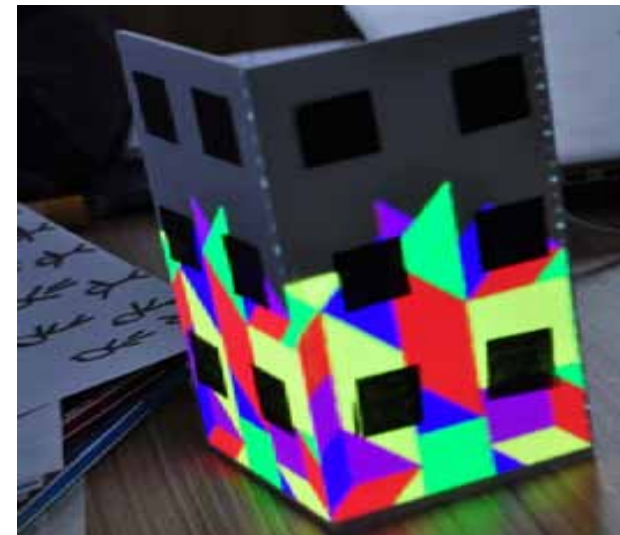
The most important aspect that was taken from the experience in China however was the realisation that a building cannot be simply a canvas. That would not be interesting nor stimulating.

In order to augment the physical space in a meaningful digital way, constraints needed to be imposed supporting the idea of geometric shapes before the trip to China in exploration 2 (see 9.2. Exploration 2). This however became more specific to windows through the project in China. It is also a question of possibility. One cannot project on glass, so if people were to randomly draw and have this project on the building like a canvas it would not augment the building in a meaningful way.

11
FINAL
CONCEPT

11.1.
LEAVE YOUR MARK

As described in the research paper, people are given a chance to interact in a playful way by "drawing" and leaving their mark behind on the public space. Giving them a chance to express themselves by playfully triggering and intrinsically motivating them.

The concept involves projection mapping and the use of a digitally augmented blackboards to create a public art growing systems in a city. The goal of the concept being to increase the feelings of inclusion and connectedness and inclusion of the citizens of the city to each other and to the public space they are in.

Aspect 1:
Imagine, a blackboard situated on a building in a city. A person walks by, grabs a piece of chalk and starts drawing or writing on it, leaving their mark. The blackboard projects the drawing or written words of those who left their mark onto that chalkboards building. In other words augmenting the physical world in a digital way.

Aspect 2:
As supplemental and more "connected" aspect was added to the concept. On some location the blackboard will be provided with a camera. The feed of this camera will be projected onto a blackboard on another location in the city. So if a person walk by this secondary location, they could possibly see someone, a complete stranger, leaving his or her mark on that first blackboard. All of this using video feed. This creates the results that people see individuals on another location walking by, or sharing on the blackboard of this other location, a location where the first individual is not.

11.2.
WHY NO DIGITAL INTERACTION?

When returning to the Netherlands, the whole digital interaction was rethought. It became apparent that a purely digital interaction might be unclear without instruction and thus have a reasonably high threshold.

A medium had to be found that had a relatively low threshold and a more personal direct physical interaction. After brainstorm session and a cross-coach meeting with Joep Frens, the idea of using a blackboard was born.

Through its digital additive of using webcams and projections it allows for the system to keep growing and adapting. You can keep adding blackboards in a city and you can keep the location some are recorded form and where they will be projected on.

It also allows for a nice translation of the physical world into the digital. The way it is used allows for the physical to develop on each other using digital means.
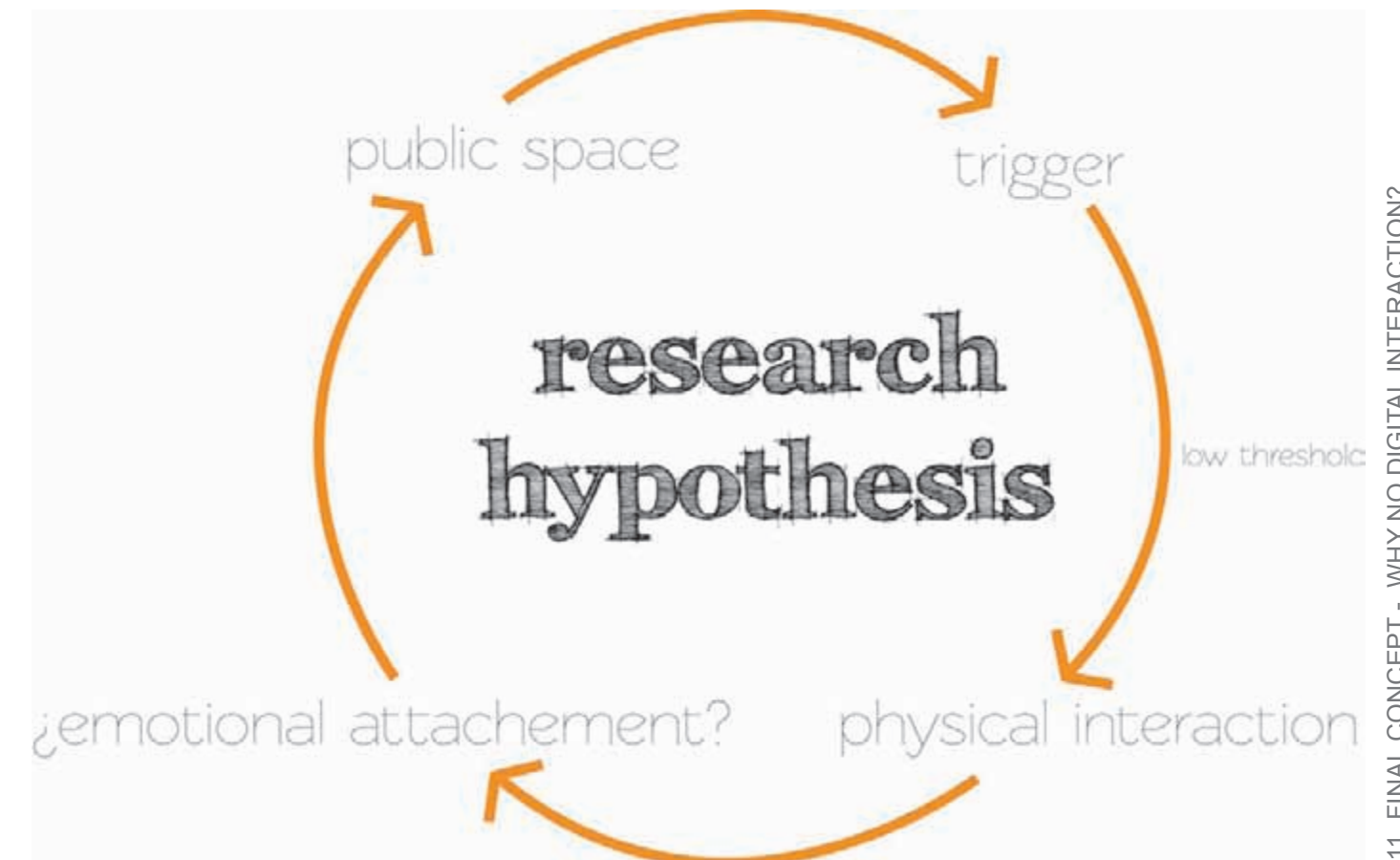
11.3.
WHY A BLACKBOARD?

The interaction of writing on a blackboard is something that has a low threshold and that people recognise. People know what to do with a blackboard if given the permission to do so. The physical interaction allows for a meaningful and rich interaction. It is a form of art that is allowed as it is temporary and does not deface public property. All one would need in a square is some rain to have the traces fade away. It is a kind of pure childlike interaction that could be seen as woven into our social fabric.

It is something we did as kids. It takes us back to school or even the sidewalks when we drew on the sidewalk using chalk. It is an easy and playful interaction because of its simplicity and the memories it may trigger. It thus can create a sense of enjoyment. It is a voluntary form of participation. If someone does not want to participate, all they need to do is walk past the blackboards.

The low threshold allows people to easily step in and out if they whish to do so. It offers something for everyone because children can do it, teenagers, adults and seniors alike. It connects the citizens of a city to each other in a more abstract way.

The simplicity of the task and the effortlessness needed to step in and out could help the scarcest resource for most of us today -- time (which also increases the "simplicity factor on the FBM). (Fogg, 2009)

With the final version having projection, seeing other participants and the drawings of other in general could be both a Spark and a Signal trigger. As described by FBM a "Spark" trigger is when Motivation is low and need to be increased and "Signal" where motivation and ability are present but the activity needs to be triggered into action (Fogg, 2009). This trigger thus relies on an increase in curiosity simply by its presence. As it will be continuously changing, there will always be something new to see, especially if the "visual data" were to change form location on a regular basis.

Social interaction is very important for the concept. It is a social process. As my preliminary literary research states, people like to take part in social activities as they like being part of a community as well as collaborating to help each other.

When people feel uncomfortable in public, they take their phones out. It is the people around us that contribute greatly to our perception of comfort. When you feel comfortable in public spaces, your well being is increased. This is why the whole concept is about socially including people and being accessible to all. (Eric Paulos E. G., 2004)
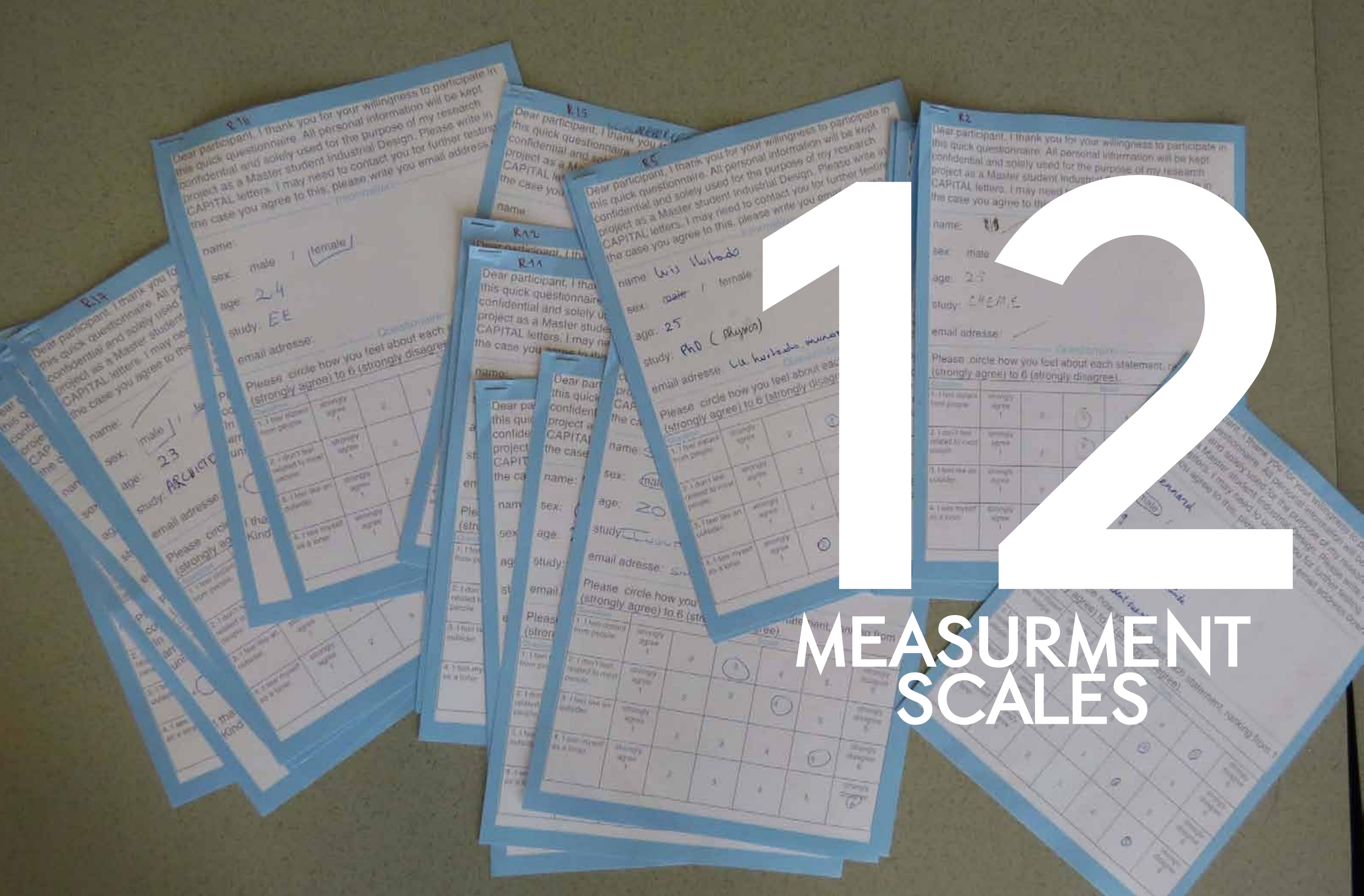
12
MEASURMENT
SCALES

Once the final concept was decided on test set-ups were defined. This can be found in detail in the research paper (Sophie.M.J. Brenny, 2013).

In order to conduct the test and measure people's sense of inclusion and connectedness, an existing and proven psychological scale was selected as the best alternative. An existing scale has already been tested for reliability for the subject it was designed for. If the author had set about designing her own new scale, it would be difficult to prove the "validity" of such an untried tool, which would or could also have undermined the results of the research study as a whole.

Dr.Mei Zegers gave expert insights into how to look for scales and analysis which one would be the best suited. After some research on Google scholar the document "Young adult cancer survivors experience of connectedness with their healthcare provider" (Phillips-Salimi, 2009) was found. This report by Celeste Philips-Samili contained a section comparing all existing scales on the matter of social inclusion and connectedness. After thorough analysis of contexts the scales were designed fro, a selection was made. Amongst this selection was the Social Connectedness Scale (SCS) (Richard .M Lee, 1995) and the Inclusion of Community in Self scale (ICS) (Debra Mashek, 2007). This find was followed by research into papers specifically about these two scales. It was discovered through this research that there was for example a revised version of the SCS scale, (SCS-R) (Richard M. Lee, 2001).
After the close examination of the characteristics of these SCS-R and the ICS scales, through papers written by the creators of these scales, the author concluded that – for the specific context at hand – the combination of these two scales would be best for the research that would be conducted.

This research also led to the Adult Attachment Interview Protocol (AAI) (Main, 2011). This protocol was used to inspire subsequent interview preparations. For more on the research and interview set-up, results please see the research paper section of this report (Sophie.M.J. Brenny, 2013). To see the questionnaire used for the research, please see Appendix. 16.16. The interview transcripts can be found in appendix 16.17.
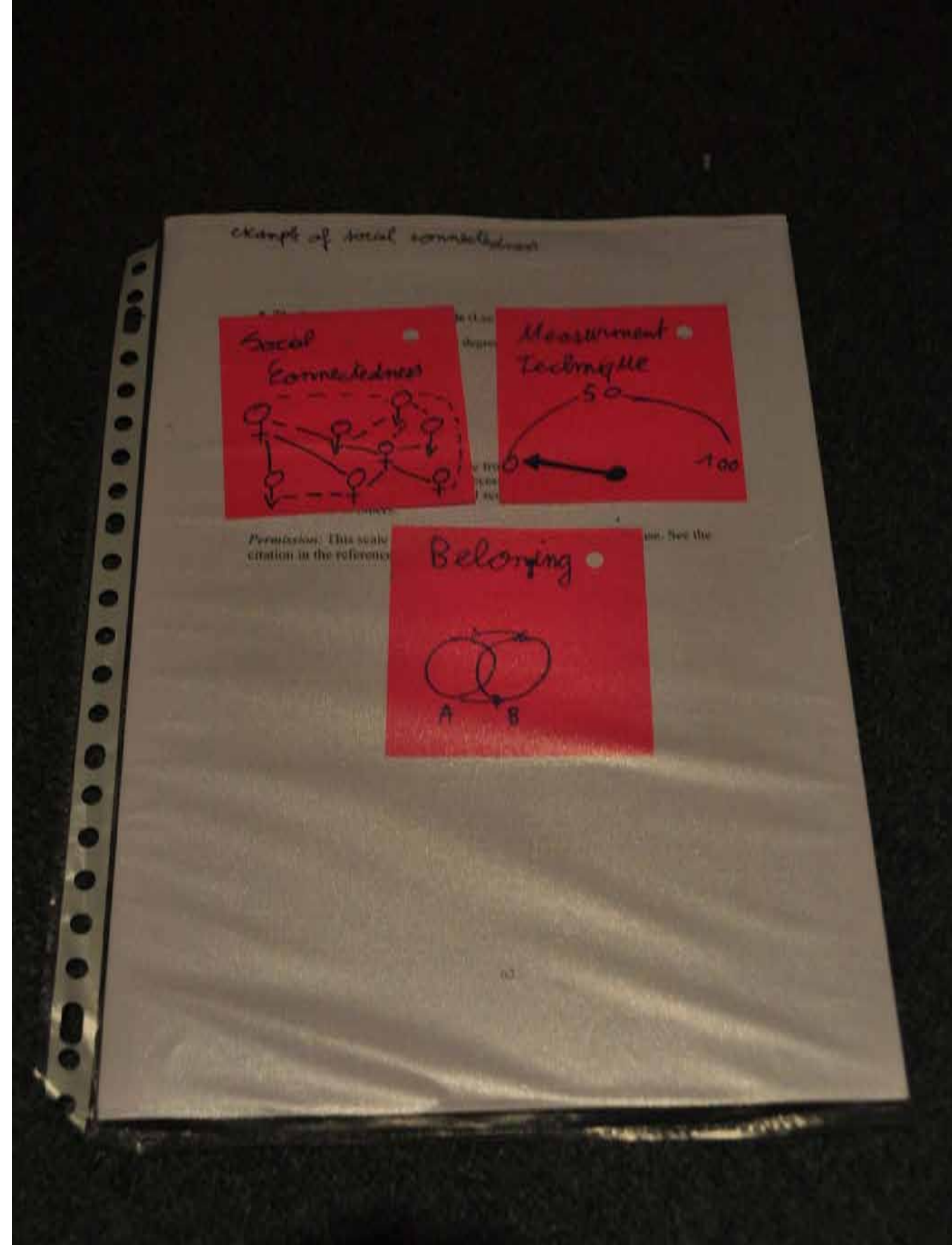
13
PROTOTYPING AND TESTING

To test the hypothesises and research questions developed during this project, a prototype was created in line with the "research through Design Practise" where prototypes do not need to be exactly like they would be in real life, but are the tools used to let users experience the interaction (Ilpo Koshkinen). It is the interaction that is important and the experience associated with the interaction.

Small experiments were done to learn how to work with blackboard paint.

The prototyping phase included several iterations of a laser-cut blackboard. The iterations explored small variations of aesthetics.

There was also a development of blackboard with geometric shape that suited those of the main building of the University. This was to fit the context it was put in as described in the research paper and thus the general idea of physical augmentation.

Everything came together at the end of the project in a coherent and complete storyline, from A to Z.
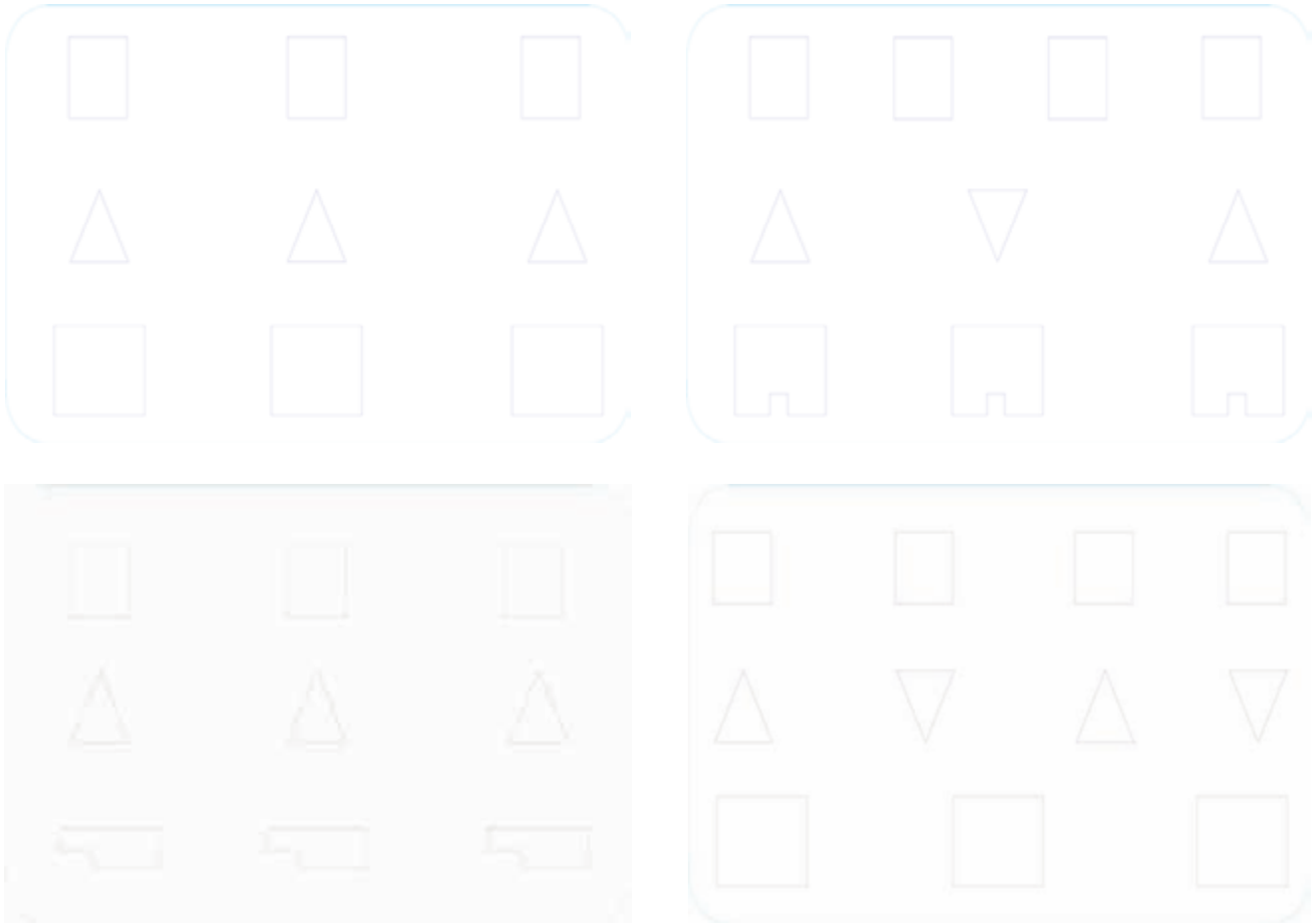
14
EXPERTS

Across the project several experts were approached in various fields.
One expert did not respond but who was contacted for example was Pieter Desmet, TU/Delft expert in emotional designing.

Tilde Bekker and Rob Tiebben were approached form the Playful Interactions theme from the department of Industrial Design of the TU/Eindhoven for expert input into the playful aspect in public spaces. Both these experts gave tips into papers that could be relevant for this project. Tilde Bekker provided a paper of her and other authors that was not yet published at the time: Playful Interactions Stimulating Physical Activity in Public Spaces.

Furthermore Dr. Panos Markopoulos, Professor at the Industrial Design Department of the TU/e helped the process through giving his expert opinion on the Qualitative Design research standpoint. Specifically as it related to the interview set-up and what else needed to be taken into account during the tests set-up.

Joep Frens provided the DQI eye on the design concept upon the return from China. He pointed out the relevance of the low threshold and my needing to take the space into account more.

Dr. Mei Zegers, PhD, International Labour and Organisation Development Psychologist as mentioned in the report gave her expert psychologist opinion on how to choose psychologically related scales to best suit the situation and requirements of the research conducted in this project.

Matthias Rauterberg provided the expert quantitative and statistician insight on the results and analysis phase of the research. Also giving a quick crash course on SPSS. His insights were valuable for the research papers in this report.

Dr. Laurens ten Horn, PhD, Prof., Organisational Psychology, TU/Delft, retired was contacted for his expert psychological statistics skills. He provided further insight into the results of the test from an analytical standpoint. Dr. Laurens ten Horn particularly gave psychological expert input on the reliability for the SCS-R and the approved having chosen that scale for the question at hand.
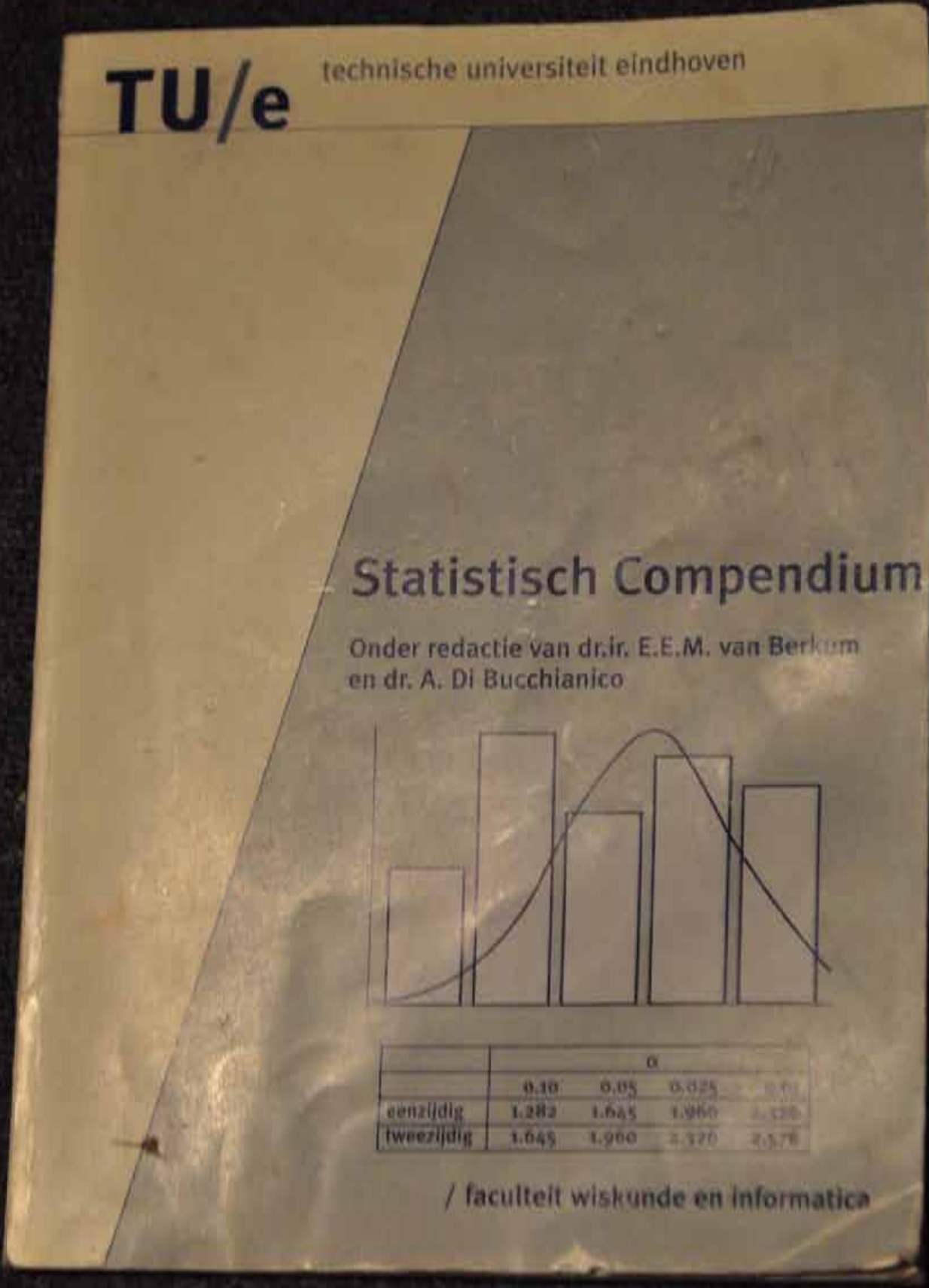
Week 15 April and 16 : April 8th to 19th 2013] (China)

Envisioning

Exploring/
Validating

Making

Thinking

15
REFLECTION

Envisioning

emotional meaning | making spaces inclusive | research papers | tool that augments physical space | scales + testing | reflection

Exploring/ Validating

doors windows | mark on building | yes | yes | evluation & experts input

Making

self expression | is mark tool used?

Thinking

prototype as research tool | analytical induction | do people use shapes? | building ≠ simple canvas | blackboard lower threshold | reflection

I truly believe that the project "growing systems" has been a very big milestone for me as a student, a researcher and a designer.
It has greatly influenced how I see design and how I look at my work.

It is through this project and its preceding module that I have come to understand the importance of the role that systems and emotional meaning play in my vision as a designer. I want to develop not only products but also the systems and services that come with them.

I have started to see myself as an ethnographic designer.

To me, design has become a means, a tool to achieve a goal. In this project, the goal being to investigate how design influence's people's feeling of inclusion and connectedness in a public space.

I have actively developed a higher and more abstract level of understanding. I have learned to take a step back by making a daily blog and a weekly reflection. These tools have allowed me to look at my work in a more holistic way. Through my weekly reflection, I was able to analyse and become aware of what needed to be developed further in future steps of the design process.

Through the help of my coach, experts and fellow students, I developed the tools to conduct an academic level of research. The various activities I conducted gave me an opportunity to develop my quantitative data and observation skills; learning to discern and how to use SPSS for example. Writing a research paper gave me an abstract and complete overview of what I had done and how it all fit together to create the end result of the concept "Leave your Mark".

The evolution of my research skills is something that—even if it can still be further improved—has advanced with leaps and bounds. I have come to understand how to use social and cultural experiences within my learning process. I also understand how to conduct more scientific and abstract users tests while balancing this with interviews. I did this by learning to use existing psychological tools to conduct my analysis.

All of these skills can be useful later in my Final Master Project and in my career as a designer. Particularly if I choose to go more towards the research design field as I am considering now.

Communicating with coaches like Panos Markopoulos, has given me insight into how to best apply qualitative data. As an example, I found that cultural probes may not be the best tools to use for a scientific research project. Constructive design research is something I applied in phases of the project. Having this tool set in my pocket is very valuable to advance the level of academics and reliability within my work. I was able to use the book "Sketching the User Experience" and held discussions with fellow students as well as potential users to best design for the user experience. This is, after all, what my project has become centred around.

The numerous books and papers I read have each given me insight into various relevant aspects of my research project, supporting or informing decisions I made. I have developed the ability to filter out what is irrelevant and find new connections through the art of mind mapping

Hands-on explorations are something I did more during my second module this semester. Doing the hands-on research and user testing are ways that I have definitely been able use to further my choices and explore the research question I set for myself within the project. When doing my initial paper explorations, for example, I discovered the kind of things people shared and that they were even triggered to do so simply through the presence of the artefact. This provided major insights for my later conceptual phase. I did not need to wonder if people would share something to begin with.

Through my experience in China I learned how to communicate and collaborate within my project with my coach, other coaches, experts and fellow Chinese students. I learned from my Chinese teammates how to co-create, as they were from 3 different backgrounds than mine: animation design, graphic design and new media design. I also learned the beauty of visual communication to bridge the gap of language and cultural differences.

I came to realise that visual communication provides a clearer and more emotional experience. This emotional experience may bridge the communication gap between cultures. Using visual communication I am, thus, clearer and more specific in the way I am communicating an idea. The person for whom these visuals are designed becomes involved and might experience the concept on a less clashing manner than when only communicating verbally. As the saying goes, "one image says more than one thousand words".   This realisation is something that is truly valuable to me. If I indeed do continue to work in international and multidisciplinary teams, developing these visual communication and sketching skills is crucial. Though I have enthusiastically worked on these this semester, it is a skill I still wish to continue developing.

Every step I took in the project was born from thought, re-iteration and an understanding of what I wanted for the project and from myself.

Realising, for example, that I might not want to make a purely electronic prototype as this could be experienced as de-humanising. This meant that a digital interaction might not work for me in this specific context. I wanted my participants to feel through the purely personal physical interaction.

I consciously travelled through the design processes depending on my activities. Varying from Envisioning to Exploring/Validating, Making and Thinking in a conscious way has given my project more depth and awareness.

For example, I envisioned an idea: people sharing things in a public space. To test this vision, I explored and validated a basic aspect first: will people share something if they are given the tools? This small exploration allowed me to validate a basic aspect of the vision I had for this project.

I am proud of my evolution as a student and designer and of the final work that I have delivered.
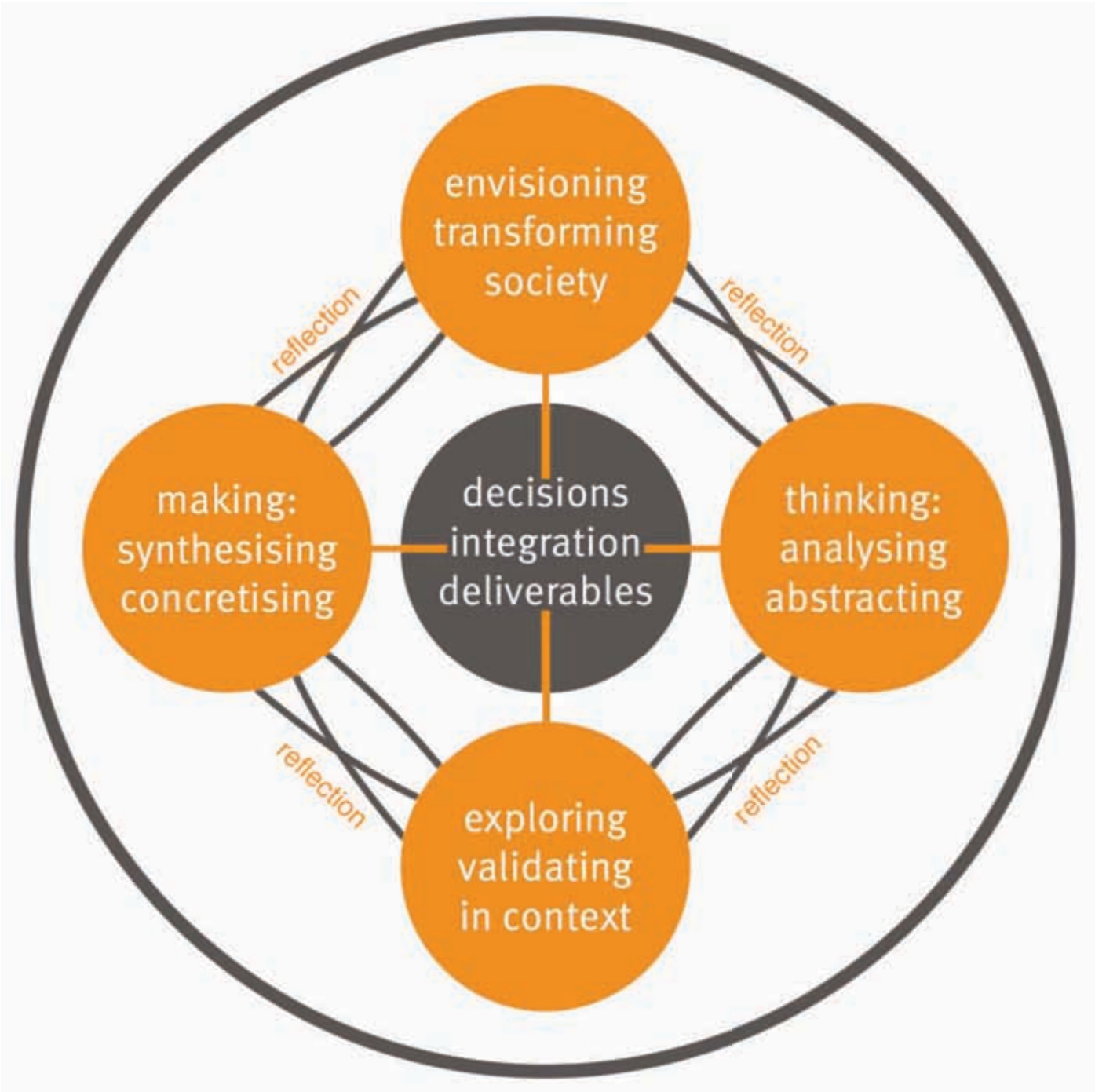
16.1. DESIGN RESEARCH

Some of the challenges for design researchers are thinking of who to study and what to leave out. For this, researchers use theories or their own judgment. On the other hand, it gives such researchers first hand knowledge, allows them to build on their strengths and uses natural settings over lab settings usually.

Designers have now a days moved on towards a wide variety of directions. These include: Systems, Services, and Organisations & Technology.

According to the book, designers' imagination can improve and become more realistic when using constructive design research.

Aspects that are important for designers when it comes to Design Research (DR) is the value there is in actually doing things. It helps them create a memorable and playful experience and builds on pleasure. Furthermore, it becomes clear that many eyes see more which leads to multidisciplinary and multicultural teams.

Designers that focus on studying culture for design are called Designer Ethnographers.

This information is a compilation of the following source:
(Ilpo Koshkinen..;)

16.2. FUTURE TRENDS

The big evolutions in the future will be related to stimuli and the increase of the importance of the quality of life.

This rapid growth will also create new arrangements and thus a culture/ subculture change. This change relates to a continuous change in the urban fabric and could lead to urban innovation (which can be linked to the development of the equipped and intelligent city).
This evolution in culture and subculture created fragmented patterns, a homogeneous terrain & flexibility.

Logic and sustainability is seen in China according to one source (Gaia Vince) as an improvement of this quality of life.

This information is a compilation of the following sources:
City": (Dubernard, 2012); (Mitchell, 2000)
"Articles about China": (Halper, 2013), (Osborne C. , 2013), (Osborne (. C., 2013), (Harper, 2013), (Jana, 2012), (Falk T. , 2012), (Falk (. T., 2013), (Vince, 2012)

16.3.
MINDMAP (MM)
OF CITIES

Initial:
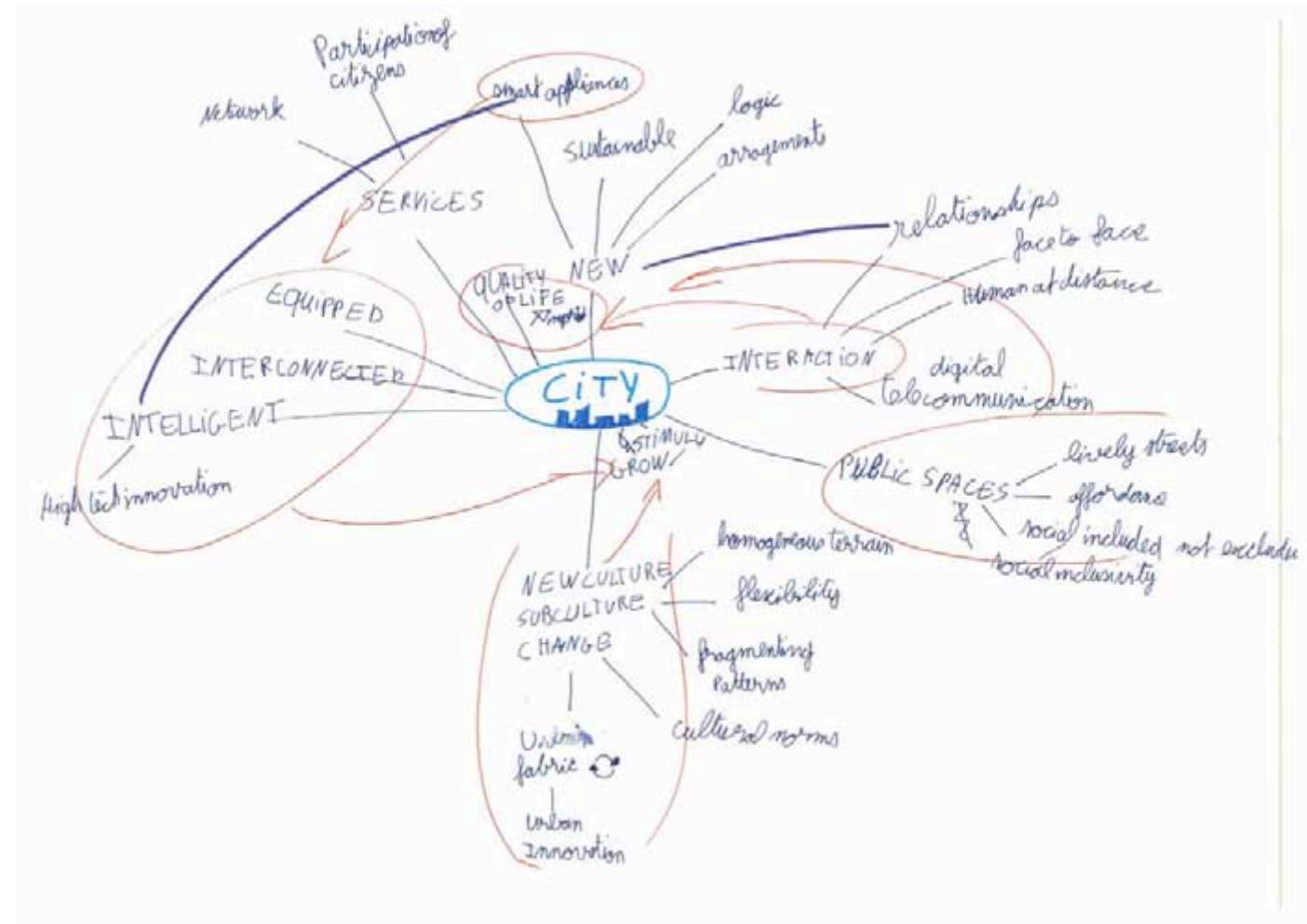
Final:
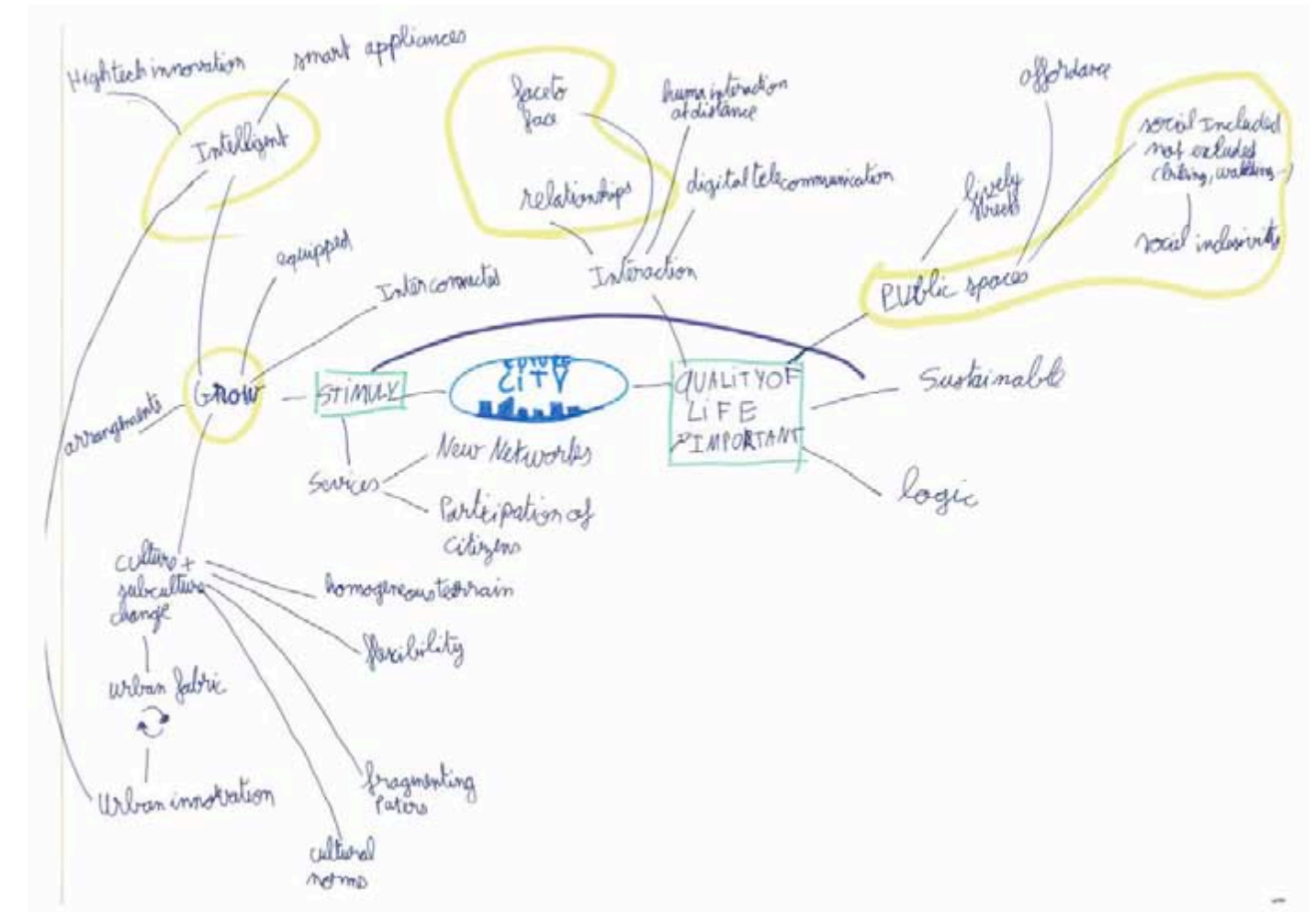
16.4.
MM OF DESIGN RESEARCH

Initial:
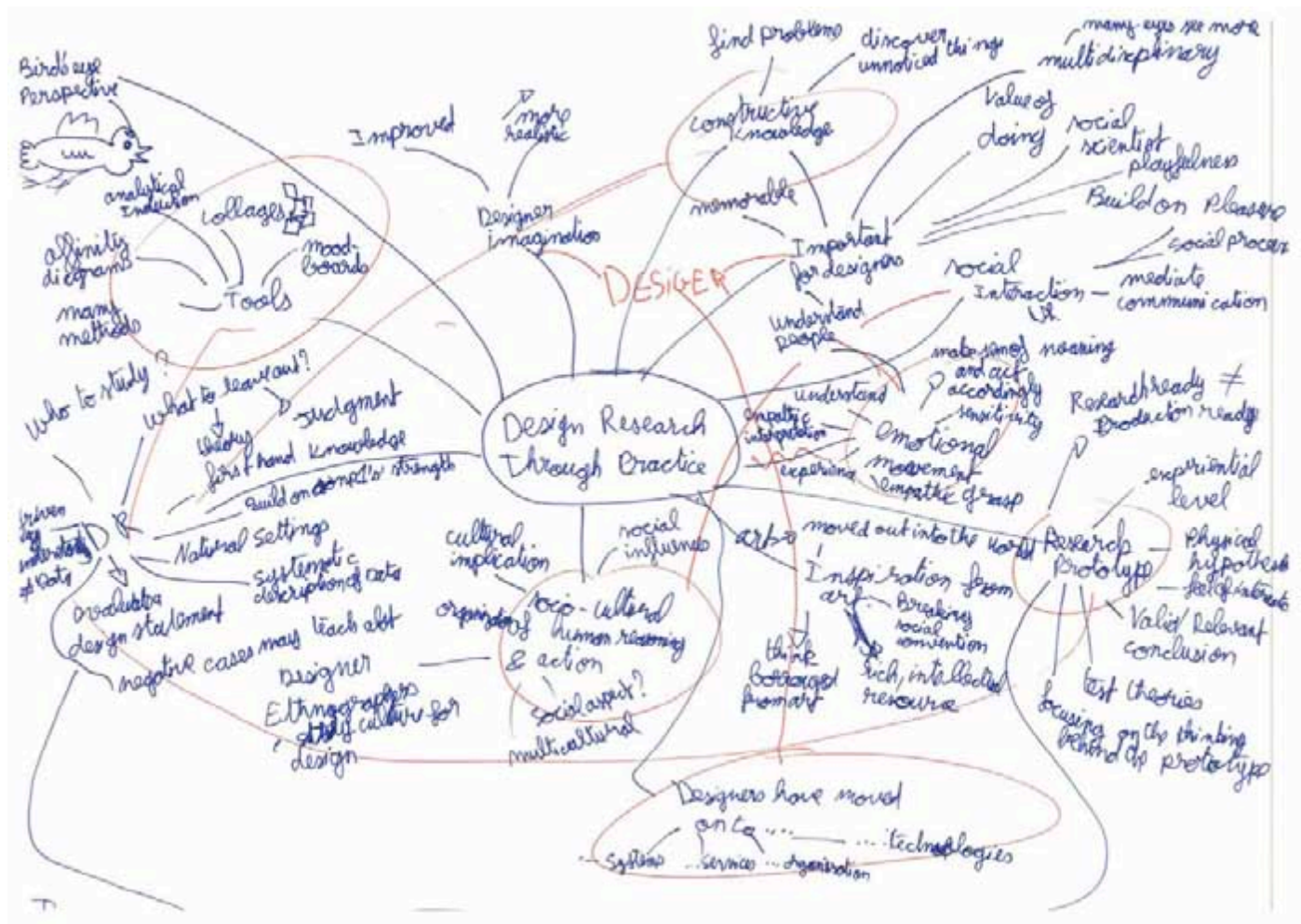
Final:
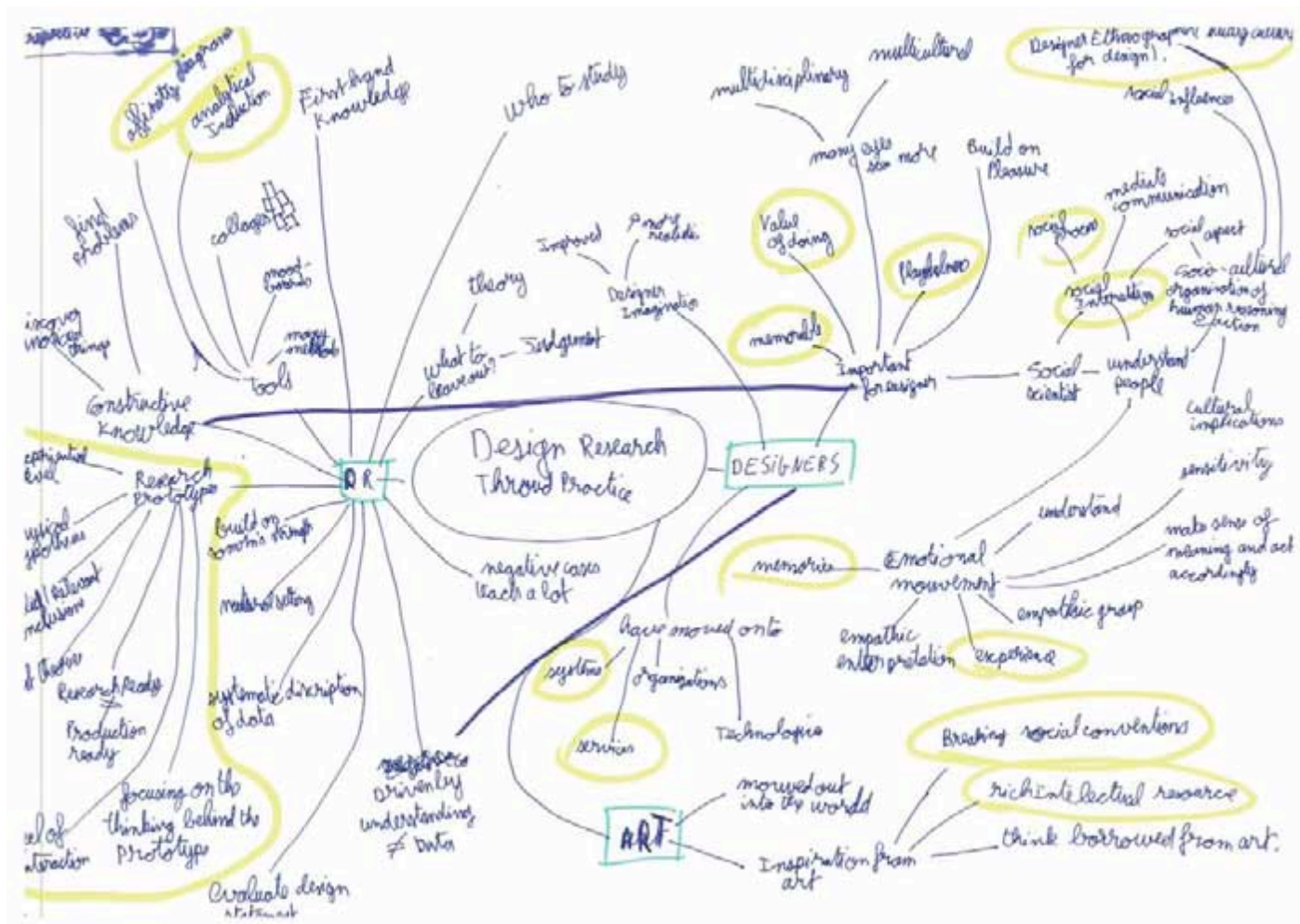
16.5.
MINDMAP OF EMOTIONS

Initial:
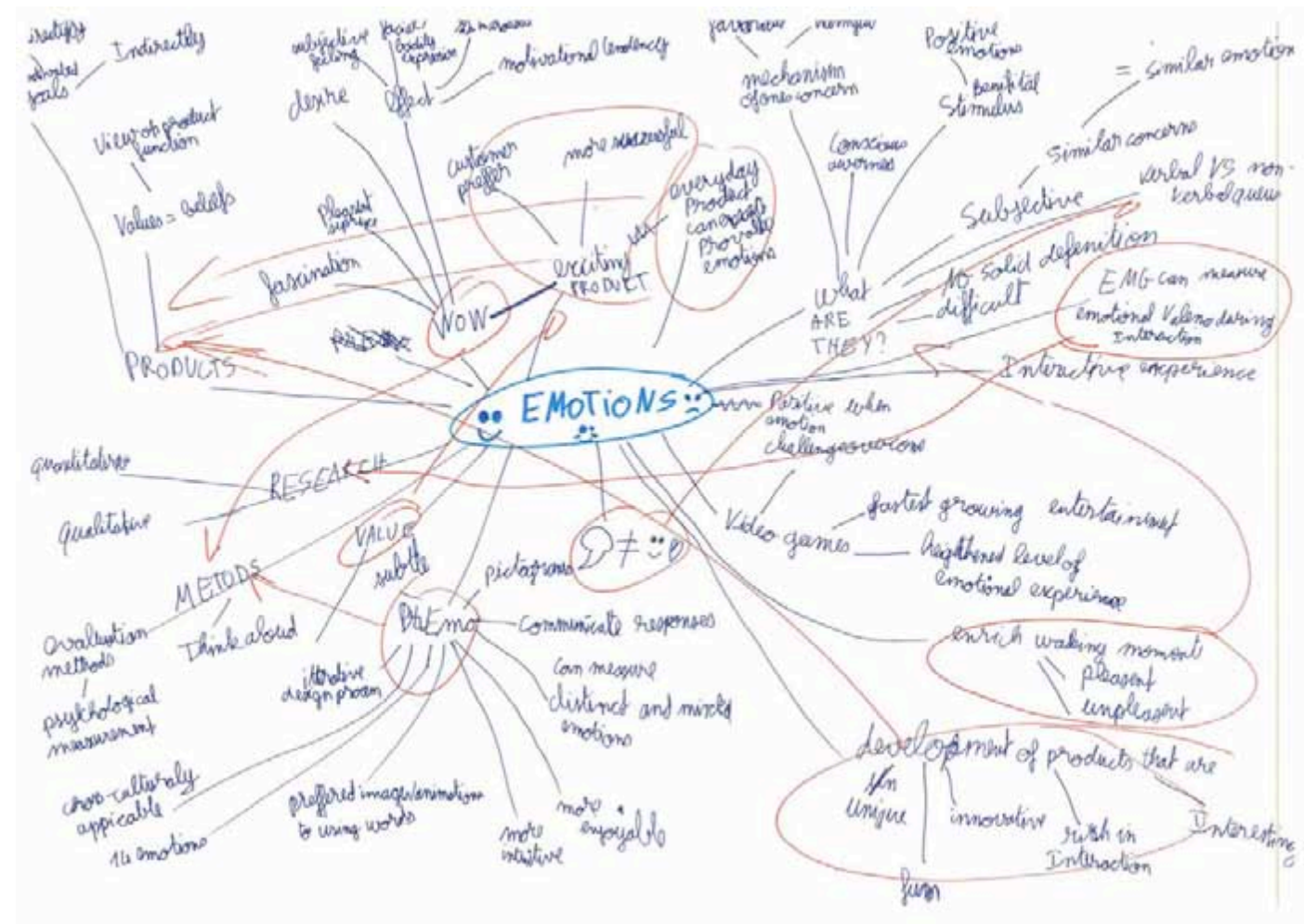
Final:
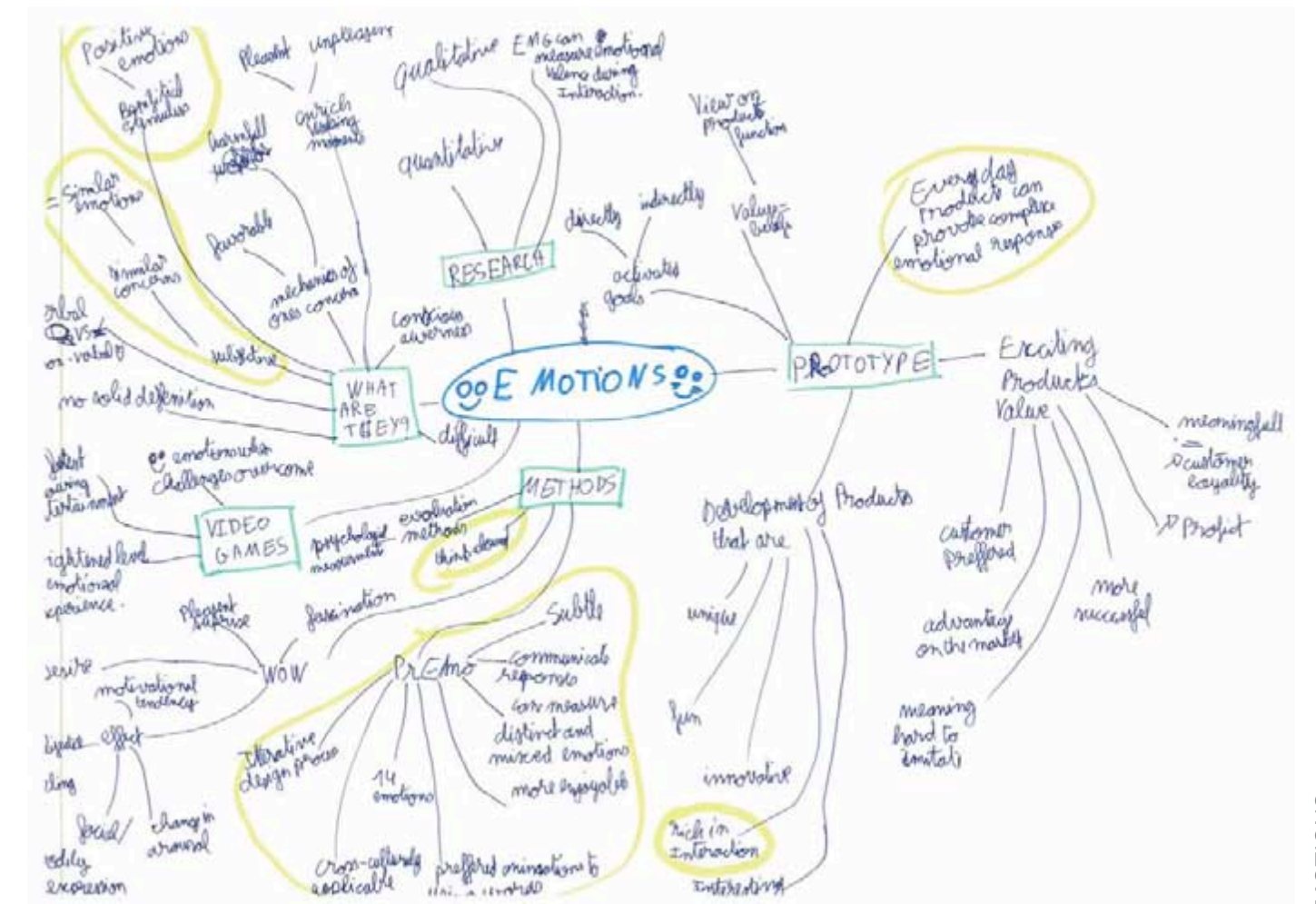
16.6.
MINDMAP OF MOTIVATION

Initial:

Final 1:
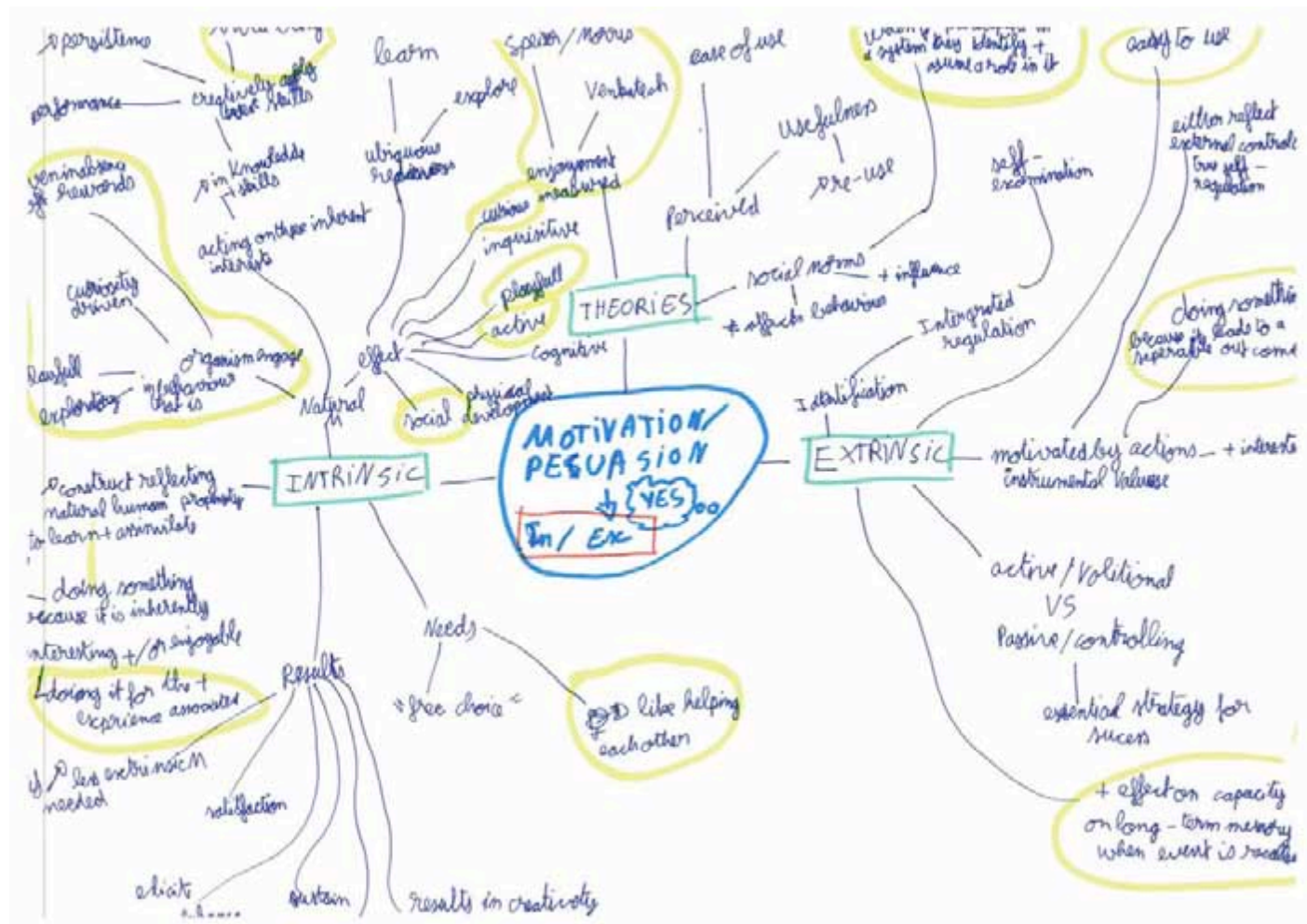
Final 2:
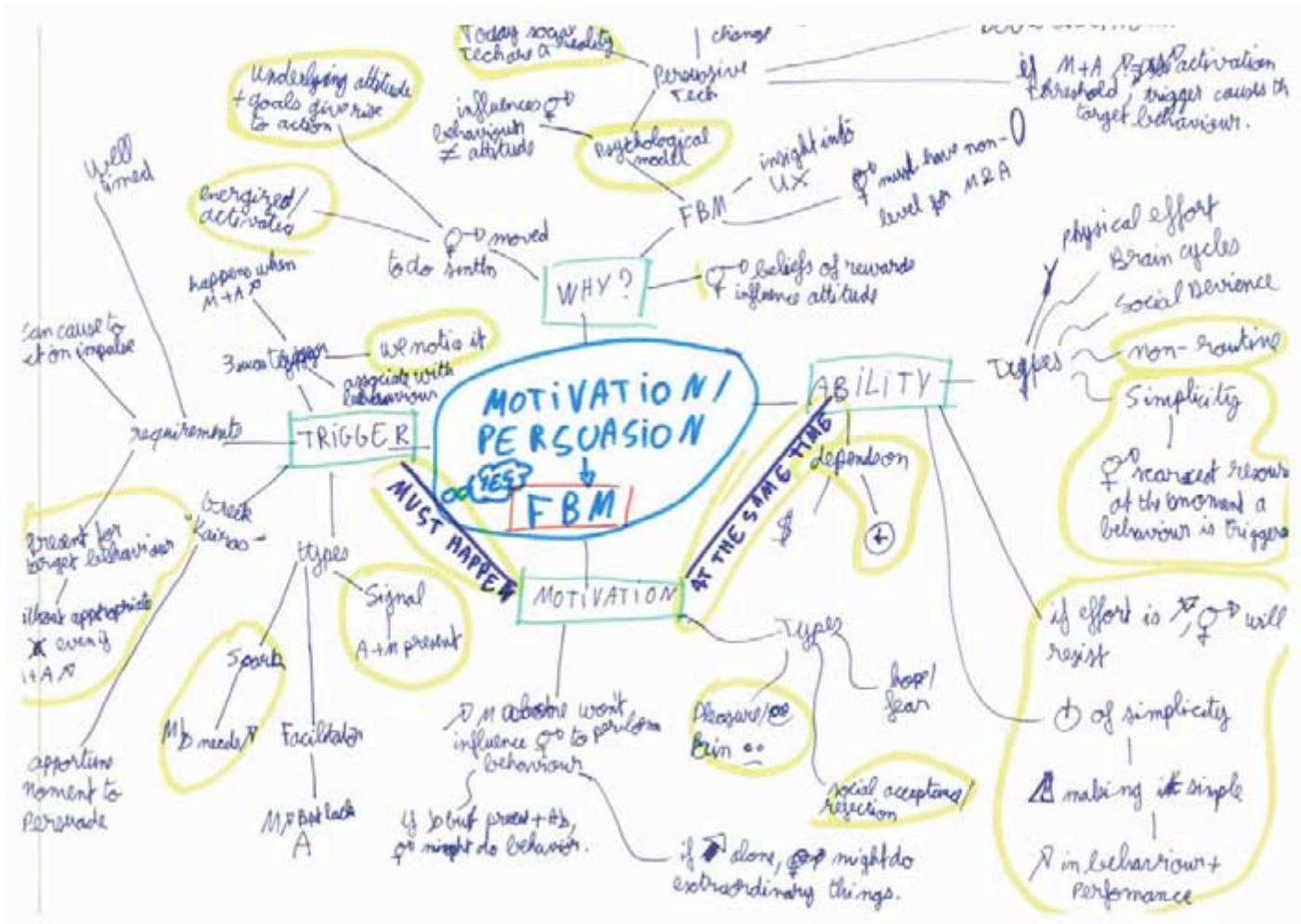
16.7.
MINDMAP OF PUBLIC SPACES

Initial:
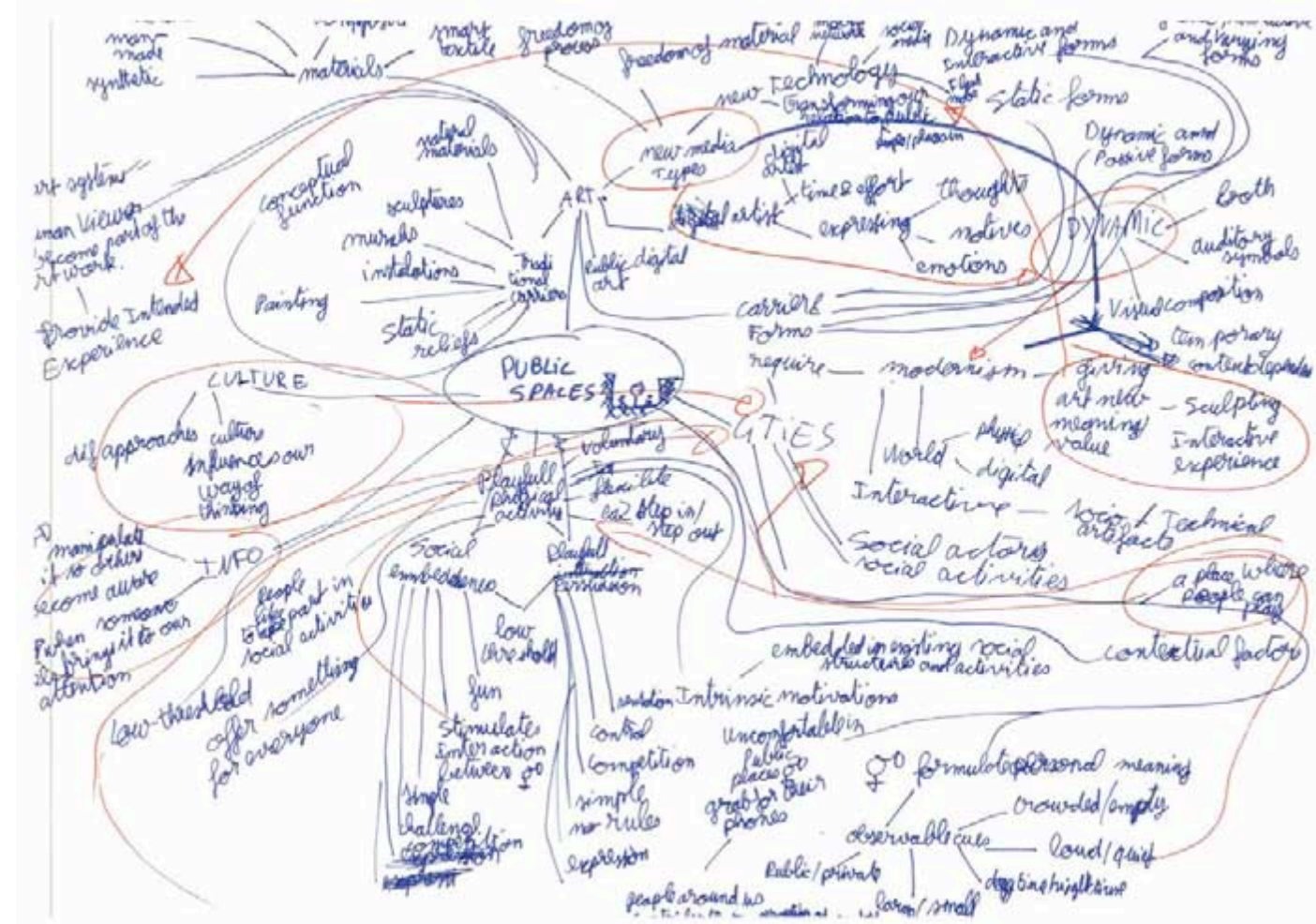
Final 1:
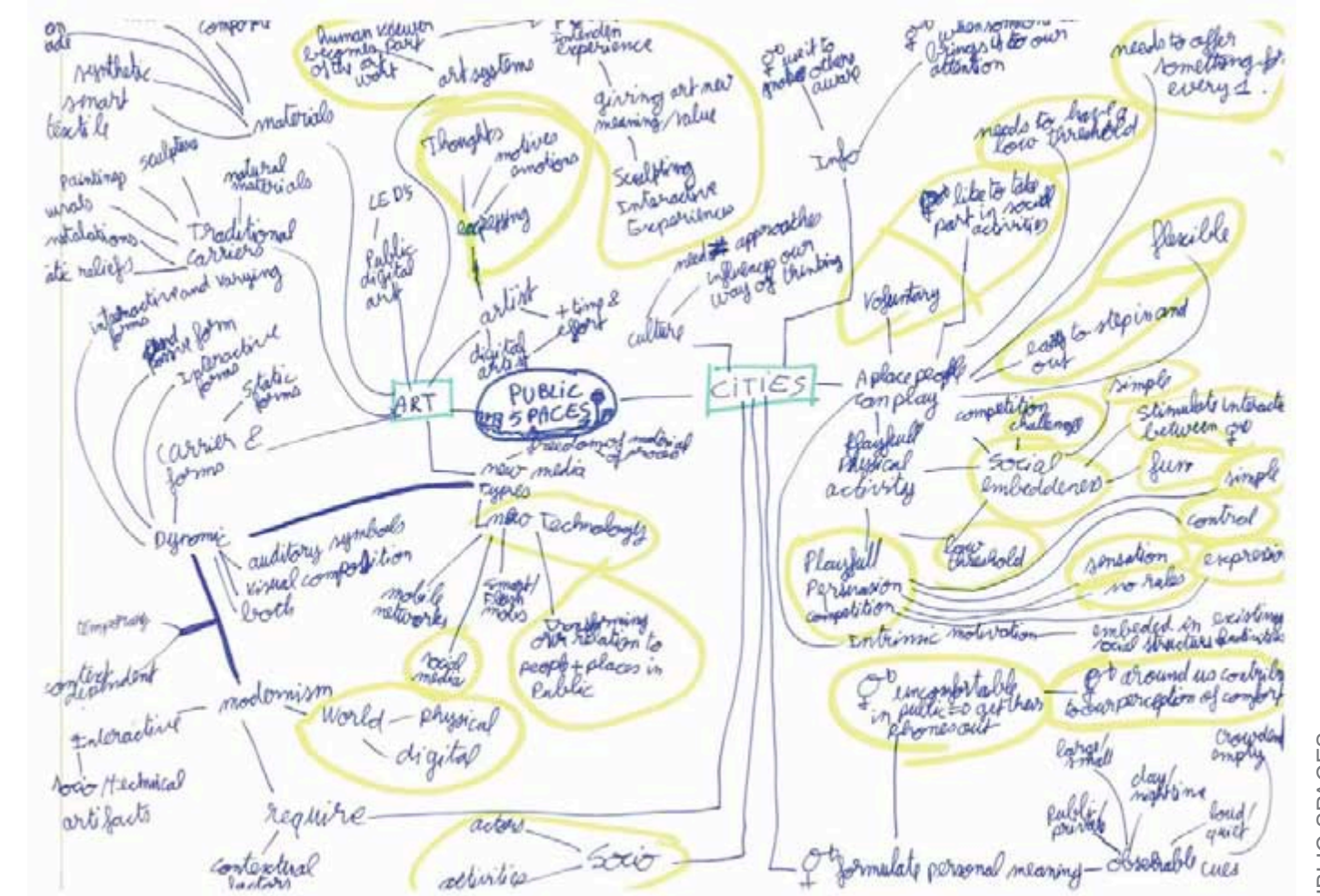
16.8.
MINDMAP OF SYSTEMS

Initial:
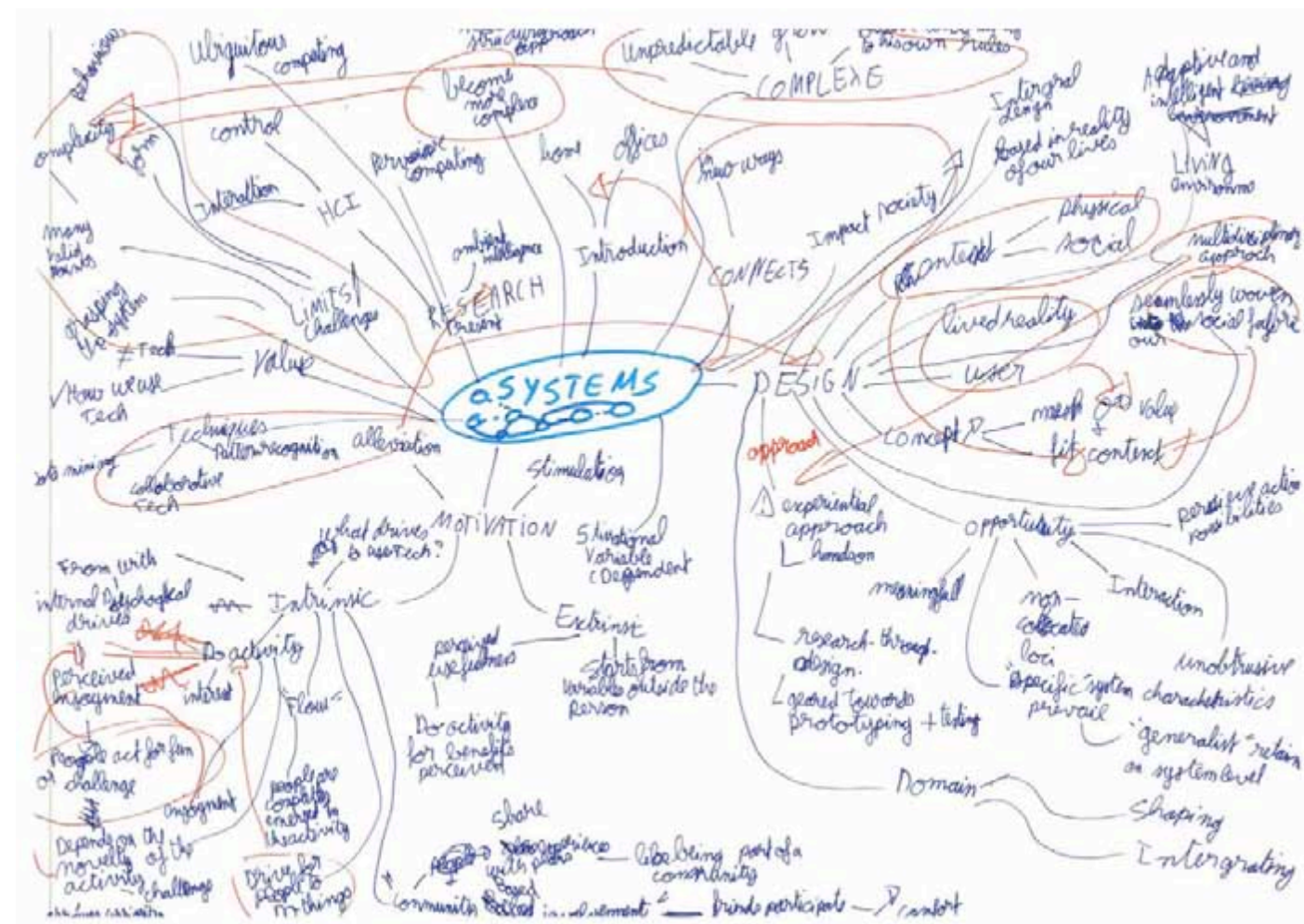
Final 1:

16.9.
PUBLIC SPACES

Sources of the ensuing information formulated in words of the designer: (Ben Schouten, 2013), (Eric Paulos E. G., 2004), (Feng Wang, 2011), (Saul Greenberg, 2001), (Eric Paulos E. G., 2004).

Art has moved away form the Traditional Carriers: sculpture, painting, murals, installations & static relief). It has moved more towards public digital art (that uses LEDs for example) and new media types.

Material uses vary from natural, man-made, composites, synthetic and even smart textiles can be used.

Modern dynamic carriers have to be seen as temporary and very context dependent. It necessitates looking at both the digital and the physical worlds. And require contextual factors for success.
When this aspect is interactive is could be seen as a socio/ethical artefact.

Art in public spaces can be separated into 4 main forms: static in form; passive in form; interactive in form & interactive and varying in form.
The dynamic aspects in the new development of public spaces can use auditory symbols; visual composition or even both.

Artists have become digital artists that may need more time and effort put into the learning and developing of new techniques and knowledge in the new digital and interactive art possibilities. The artist tries to express his thoughts, motives and emotions through his or her (public) work.

The sharing of information in public spaces is used to make others aware of certain things (like events) and is influential when someone else brings the information to our attention.

16.10.
SYSTEMS

Sources of this information: (Joep (J.W.) Frens, 2009), (Ho, 2012).

Thus far the research concentrating on systems has come from Human Computer Interaction (HCI) where interaction and control were the key elements. Research into systems has also been done when it comes to pervasive computing, ubiquitous computing and ambient intelligence.
Techniques that can be applied for system research include data mining, collaborative technology and patterns recognition.

The system character can be separated into "generalist" which will be retained on the system level and "specific" which should prevail for designers.
The domain of a system should be designed from a shaping and an integrating stands point.

Concepts should mesh with users values, which could increase the number of users. This mesh should look at the lived reality and the living environment of the envisioned system, as it should be adaptive and intelligent.

Motivations to adopt or use systems rely on the stimulation of the users as well as their alleviation.

16.11.
MM OF
THEORIES

16.12.
EMOTIONS

Information sources: (P. M. A. Desmet, 2007), (Pieter M.A.Desmet), (Hazlett, 2006).

Emotions are complex. I came into contact with emotional designing during the Module: Strategic value of Design, and found it so important and relevant I wanted to learn more and see how I could incorporate it into my project. This is relevant as if it is possible to create a personal attachment to public space; emotions have a lot to do with it.

First of all, what are emotions? Emotions are difficult to explain and quantify which would explain why there is no solid definition, but several interpretations. In some way you could say that it is a form of conscious awareness.
They enrich our waking moments in either a pleasant or unpleasant way.
Emotions also are the basis for the mechanics of ones concern. We perceive something as either favourable or harmful for our well-being. This also related to products. When there is a beneficial stimulus, the response is positive emotions.
Even though emotions are so subjective, if individuals have similar concerns, they will experience similar emotions on certain topics.

Emotions are best expressed in a non-verbal way, which is truer to the actual emotion. When verbal description is used, the emotions become filtered and not the original first experience someone had.

When it comes to the case of video games, it is important to note that it is the fastest growing entertainment in the business. It creates positive emotions when challenges are overcome and a heightened level of emotional experience during the playing.

To conduct research on emotions, one can use qualitative as well as quantitative research. Both have their benefits and downfalls, finding the best combination for the question at hand is critical.

Methods that can be used to develop emotional meaning in designs include evaluation methods, which are taken from psychological measurements. EMG, which is a psychological tool, can help in the measuring of emotional Valence during interaction.
A designer could also design for the "WOW" effect as P.Desmet say in his paper "Emotional Design; Application of a Research-Based Design Approach". The WOW effect targets three different aspects of emotional reactions: Desire, Pleasant surprise and fascination. These reactions should be striven for when designing for an emotional response. The WOW effect can lead to motivational tendencies towards the product or question, it goes into the subjective part of feelings. It can help designers influence facial and bodily expression as well as changing the arousal a consumer might experience when being in contact with a product.

Another tool that was also developed by P.Desmet (et al.) is PrEmo. This instrument can measure distinct and mixed emotions. PrEmo was developed in an iterative design process. It represents 14 different emotions through animations (7 positive and 7 negative). These animations were found to be preferred over words by consumers.

The tool is also tested on cross-cultural accuracy and was found to be cross-culturally applicable. PrEmo was found to be subtle, helped communicated response and was found to be more enjoyable than other tools.

Products that were designed for emotional responses and the creation of meaning activate personal goals both directly and indirectly. These products are unique, fun, innovative, rich in their interaction and interesting for the users. Everyday products can provoke complex emotional responses. It is important to note that our values reflect our beliefs and thus our views on products and their functions.

The value of exciting and emotional products is numerous. Customers prefer exciting and meaningful products. The meaning of the product is hard to imitate successfully by competitors as consumers associate the meaning with the original product and are more likely to buy that over a copy. This creates an advantage on the market, makes the product and the company more successful as well as increase the profits. Furthermore, the creation of meaning and emotional response of a product or experience on a consumer creates a high consumer loyalty.

16.13.
MOTIVATION AND PERSUASON

Motivation and persuasion is a very important aspect in my opinion to explore my research question. For this I looked specifically at two different methodologies, Frogs Behavioural Model versus Intrinsic and Extrinsic motivations.

First of all, Frogs Behavioural Model (FBM) focuses on three different important elements that must be present at the same time to prompt an action: Triggers, Motivation and Ability.
But before exploring those three elements, its is important to note why motivation is relevant. People become moved to do something when motivated. This gives them and energized and activated feeling. It is because of underlying attitudes and the goals that bring an action into existence. Peoples' beliefs as they relate to rewards strongly influence their attitudes towards an activity.
FBM gives insights into User Experience (UX) and is a psychological model. It is curtail to note that the model influences people's behaviour and not their attitude. It can uses persuasive technologies and helps develop this type of technology. Today we live in a new era where social technology is a reality and automates behaviour change.
To apply FBM, a person must have a non-zero level of motivation and ability. It can boost either ability or motivation.
Finally, if is important to note that if motivation and ability are high enough, and the activation threshold is reached, triggers can elicit the target behaviour.

There are 3 types of motivations as the model of Mr.Fogg sees it. Pleasure/Pain; Hope/Fear & Social acceptance/ Rejection.
A high level of motivations alone will not impact the public to perform behaviour.
If it is low but present as well as ability being present yet low, individuals might do the designed for behaviour.
On the other hand, if people are motivated enough (highly motivated), they might do extraordinary things.

Abilities can be categorized into 5 sub-sections: Physical Effort; Brain Cycles; Social Deviance; Non-Routine & simplicity.
The power lies in simplicity; it is crucial to make it simple! Making it simple increases the likelihood of a behaviour taking place and the quality of the performance.
Ability highly depends on time and money. If the effort to do something is high, the masses will be more likely to resist doing so.

16.14.
TOOLS AND METHODS

Triggers need to be well timed and be present for the target behaviour. In other words, without appropriate triggers, an activity might not take place even if the individual is both motivated and has the ability. Triggers can cause one to act on impulse.

The word "trigger" coms from the Greek "Kairos" which means: the opportune moment to persuade. A successful trigger is one that is noticed, that happens when motivation and ability are high or present and needs to be associated with the behaviour.

One can separate types of triggers into Sparks where motivations are low and need to be heightened; Facilitators where there is a high motivation but a lack of ability and signal, where both ability and motivations are present.

Extrinsic motivations are motivation that is caused by the instrumental value of an action, what makes the action interesting for the user. It is about doing something because it leads to a hoped outcome and reflects either external control or true self-regulation. It speaks to the individual's identification to the action, his integrated regulation and self-examination.

Extrinsic motivations have a positive affect on long-term memory allowing people to remember things longer and recall the "pleasant" or "unpleasant" events better. Making them more likely to either participate or avoid the activity.

Intrinsic motivations are a high construct that reflects natural human tendencies to learn and assimilate. People do thins because the action is fundamentally interesting and/or enjoyable. This means that individuals do the activities because of the positive experience associated with it.

This all links to natural motivations. Throughout nature, organisms engage in behaviour that is curiosity driven, playful and exploratory even when there is no reward.

When we as human being act on these natural motivation, or inherent interests, there is an increase in skill and knowledge. We can than in turn creatively apply these skills which in turn create an increase in performance, persistence and well-being.

The characteristic effects of natural intrinsic motivations are curiosity, inquisitive, playful, active, cognitive, physical and social development.

These ubiquous effects can be related to learning and exploring.

Theories useful for intrinsic and extrinsic motivation also include the importance of the perceived 1) Ease of use and 2) usefulness (which increases the likely hood of re-use). It is also possible to measure enjoyment by using theories by Venkatesh as well as Seieper and Morris.
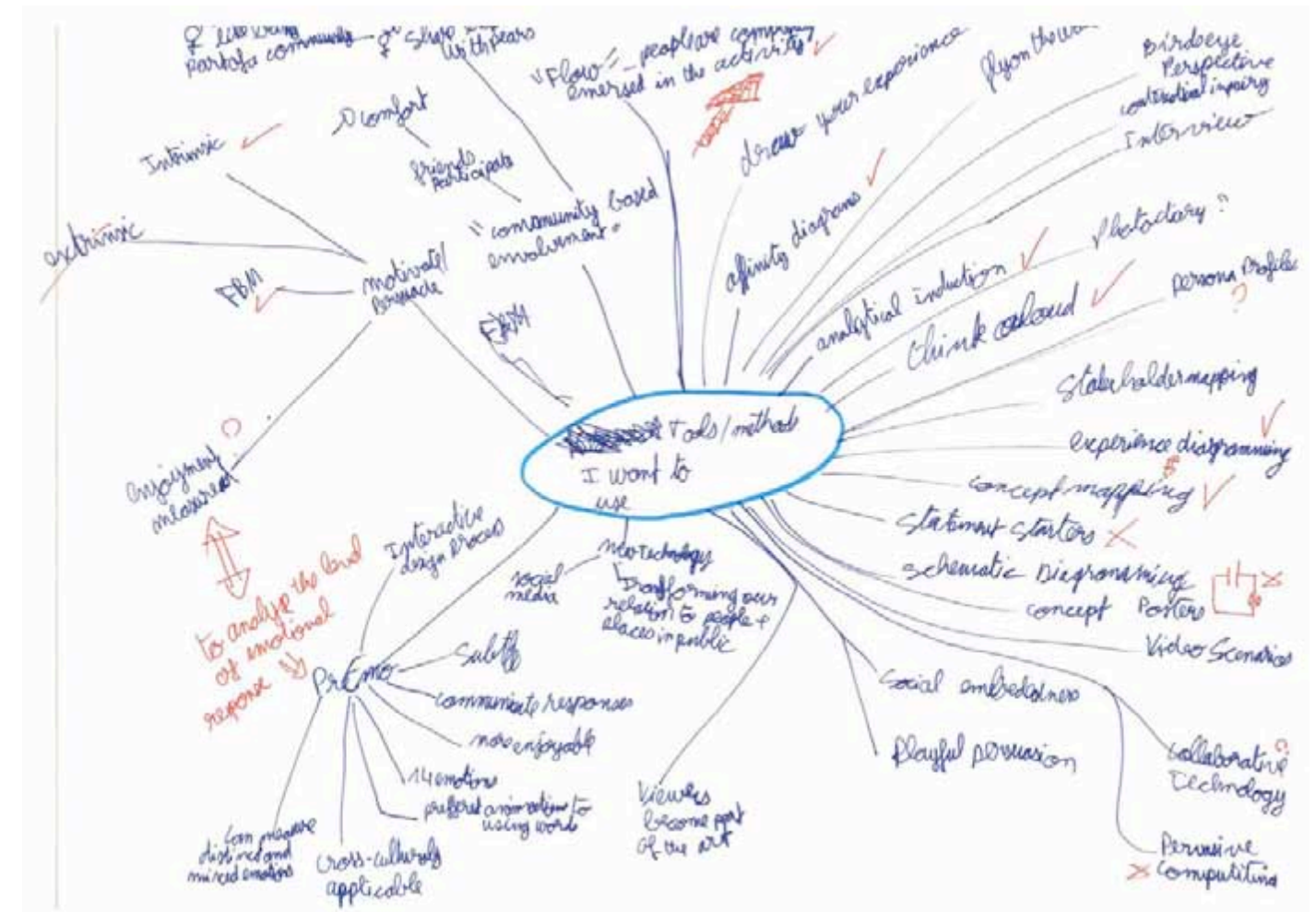
16.15.
CONCEPT
REQUIREMENTS

Initial:

Final:
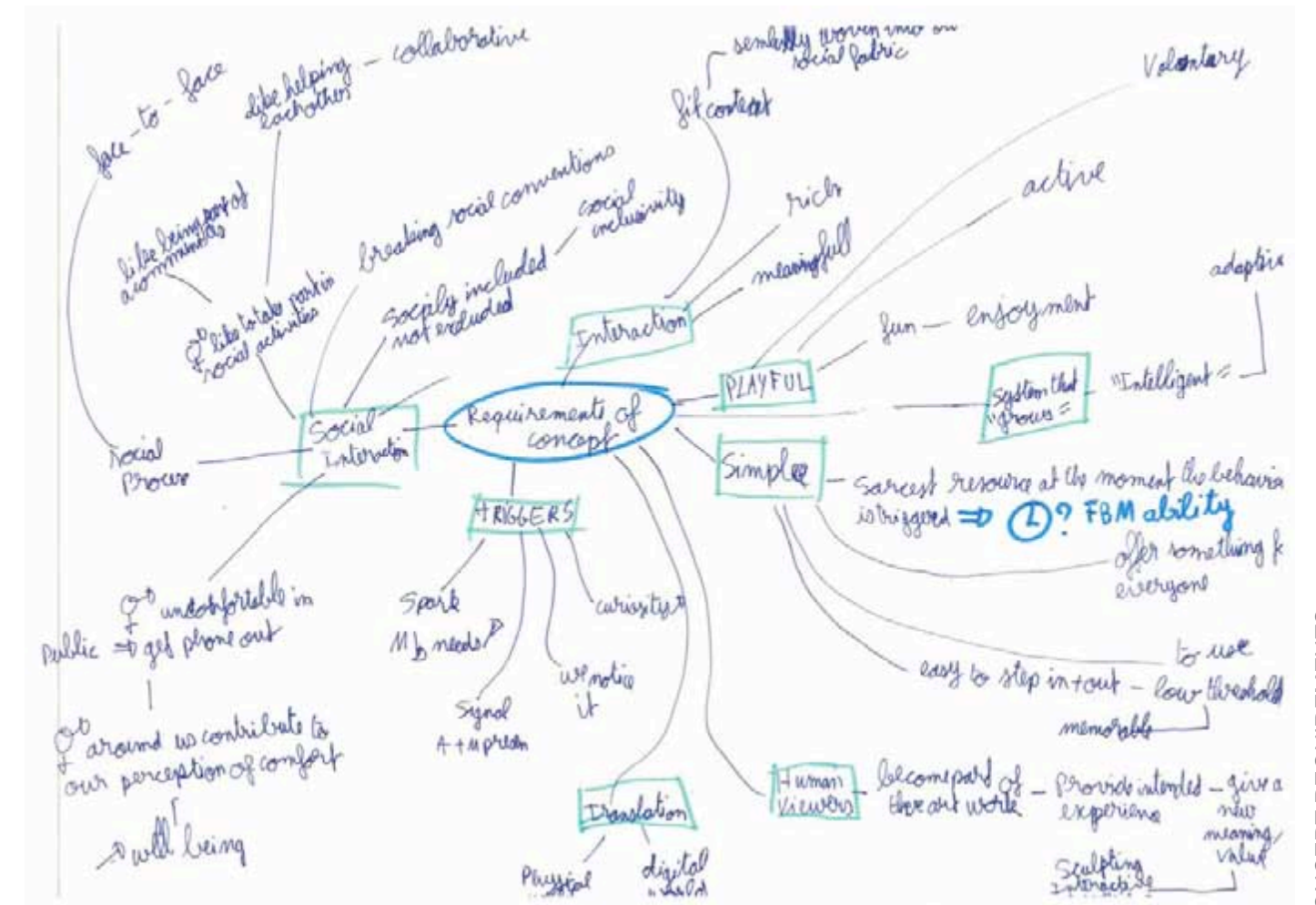
16.16.
QUESTIONNAIRE

Dear participant, I thank you for your willingness to participate in this quick questionnaire. All personal information will be kept confidential and solely used for the purpose of my research project as a Master student Industrial Design. Please write in CAPITAL letters. I may need to contact you for further testing. In the case you agree to this, please write you email address down.

------------------------------ Information ------------------------------

name:

sex: male   /   female

age:

study:

email adresse:

------------------------------ Questionaire ------------------------------

Please circle how you feel about each statement, ranking from 1 (strongly agree) to 6 (strongly disagree).

Question	Scale					
1. I feel distant from people.	strongly agree 1	2	3	4	5	strongly disagree 6
2. I don't feel related to most people.	strongly agree 1	2	3	4	5	strongly disagree 6
3. I feel like an outsider.	strongly agree 1	2	3	4	5	strongly disagree 6
4. I see myself as a loner	strongly agree 1	2	3	4	5	strongly disagree 6

Question	Scale					
5. I feel disconnected from the world around me.	strongly agree 1	2	3	4	5	strongly disagree 6
6. I don't feel I participate with anyone or any group.	strongly agree 1	2	3	4	5	strongly disagree 6
7. I feel close to people.	strongly agree 1	2	3	4	5	strongly disagree 6
8. Even around people I know, I don't feel that I really belong.	strongly agree 1	2	3	4	5	strongly disagree 6
9. I am able to relate to my peers.	strongly agree 1	2	3	4	5	strongly disagree 6
10. I catch myself losing a sense of connectedness with society.	strongly agree 1	2	3	4	5	strongly disagree 6
11. I am able to connect with other people.	strongly agree 1	2	3	4	5	strongly disagree 6
12. I feel understood by the people I know.	strongly agree 1	2	3	4	5	strongly disagree 6
13. I see people as friendly and approachable.	strongly agree 1	2	3	4	5	strongly disagree 6
14. I fit in well in new situations.	strongly agree 1	2	3	4	5	strongly disagree 6
15. I have little sense of togetherness with my peers.	strongly agree 1	2	3	4	5	strongly disagree 6

16. My friends feel like family.	strongly agree 1	2	3	4	5	strongly disagree 6
17. I find myself actively involved in people's lives.	strongly agree 1	2	3	4	5	strongly disagree 6
18. Even among my friends, there is no sense of brother/ sisterhood	strongly agree 1	2	3	4	5	strongly disagree 6
19. I am in tune with the world.	strongly agree 1	2	3	4	5	strongly disagree 6
20. I feel comfortable in the presence of strangers.	strongly agree 1	2	3	4	5	strongly disagree 6

Please circle how you would position yourself in relation to the community around you.
In this graphic, 'S' stand for yourself and 'C' is the community around you. You can define community by all the people in your University, town, city ect..

I thank you for your time.
Kind regards, Sophie Brenny, s.m.j.brenny@student.nl

16.17.
INTERVIEW TRANSCRIPTS

Interview 1 _ control group 1
Electrical Engineer Major
Male
25 years old
Score on the scales
Questions:
1) Could you help orient me to your overall feeling of inclusion/ belonging in a public space?
It depends on my mood and what I did before. Usually crowds are not a problem but if there is too much input (nose light.) it could be too much for me. I feel nice around people usually.

2) How do …… contribute to that feeling?
a) Friends
They make me feel more comfortable. If I don't know anyone and I am not in the right mood it's not good. They help with my confidence. They give me a solid feeling

b) Strangers
I like to see a lot of new people. You can "feel" what kind of people they are. But in some cases they "feel" wrong and I stay away. This does not happen a lot.

3) What do you usually do if you feel excluded in a public space?
Depends. I find a comfortable spot in the corner, be with myself. I watch form the side line. When I feel good and safe, I' would contact people in the space, initiate it. This increase my feeling of inclusion if I just did something with a lot of technical work, it's much harder to do so.

4) Describe a particularly good experience where you truly felt included.
During Zouk class at Footloose in the Bunker a few weeks ago.

How did it make you feel?
It was nice contact, I stopped worrying and stopped thinking, I felt safe.

What influenced this feeling the most?
Knowing that you can't do anything wrong. You'll be accepted anyway. The eyes of others, theirs smiles. How open they feel towards me, ill than be more open towards them.

5) Describe a situation where you felt particularly excluded in a public space.
It is tough to say but you have these moments where in a big group where no one is direct contact with you. If you try to initiate, you feel like you don't belong. Tiredness makes me also feel closed.

When people trust me and are open, I feel included. When this is not the case I feel excluded and I panic as to what I may have done wrong.

How did it make you feel?
I have a lot of questions, insecurity, and uncertainty with myself…

What influenced this feeling the most?
It's the trust and acceptance form other people.

6) When looking at the test you participated in, what did you experience during the test? How did it make you feel?
At first a lot seemed similar but with subtle nuances. If you thought about it, it made it harder to answer the questions. I tried to fill in in with feelings and not rational but the questions got me thinking " What really is the question?" " What are they asking?" it was difficult, you can't describe a feeling. Giving a number is hard; it feels like choosing lottery numbers.

7) Depending on which role they took in the test ask the appropriate question:
a) How did it make you feel to see your work elaborated on by others? What were your thoughts?
N/A

b) Explain what seeing someone else draw did to you. How did it make you feel? What did it make you think?
N/A

8) How did the test make you feel about that public space?
a) During?
Comfortable environment but I felt more distant form the people I was with

b) How do you think this to might influence your overall feeling about the space in the future?
N/A

9) What was your experienced inclusion level in the space when you saw you're drawings becoming part of a whole growing system?
N/A

10) Can you choose 3 to 5 adjectives to describe how you felt during the test? This from an inclusive/

Interview 2 _ control group 1
Info:
Industrial Design Major
Female
19 years old
Questions:
1) Could you help orient me to your overall feeling of inclusion/ belonging in a public space?
If I am in a space I'm comfortable if I know people, if I am lost or so, I don't feels as comfortable. It has become better now that I have become a student

2) How do …… contribute to that feeling?
a) Friends
Very much so. I use to have more girlfriends. Now there is a better balance and I am a friend with a bigger group, I feel more like myself in public spaces.

b) Strangers
Depends on their attitude and the contact they may give. If it is nice and friendly like a smile or a nod, it is nice, negative attitude decrease that feeling. Thought I don't really expect that to happen very often. If so I ignore it and walk by.

3) What do you usually do if you feel excluded in a public space?
If I don't need to be there, leave and find another space. If I can't I find something else to do with stuff I have on me, read a book, play with my phone. Ect

4) Describe a particularly good experience where you truly felt included.
When I go out for drinks with my friends it's nice and I feel included.
a) How did it make you feel?
Really good, happy, especially if I contribute to the happiness of the group

b) What influenced this feeling the most?
We share experiences of the day, we share feelings and things, get to know more of each other. This influences it.

5) Describe a situation where you felt particularly excluded in a public space.
At scouting, other scout leaders (who were older) all knew each other and were talking between each other, I felt outside of the group because they were so busy with each other

a) How did it make you feel?
Excluded, unimportant, like it would not matter if I wasn't there. I would have found it nicer to be somewhere else. It was unpleasant.

b) What influenced this feeling the most?
They were sitting in a circle, excluding me physically out of the circle.

6) When looking at the test you participated in, what did you experience during the test? How did it make you feel?
The personal questions were hard to answer. I had to think hard of what I felt at that moment. I was with familiar people when I participated. This helped. If I had not, I would have kept it all a little more to myself I. definitely.

7) Depending on which role they took in the test ask the appropriate question:
a) How did it make you feel to see your work elaborated on by others? What were your thoughts?
N/A

b) Explain what seeing someone else draw did to you. How did it make you feel? What did it make you think?
N/A

8) How did the test make you feel about that public space?
a) During?
Made me feel serious, I tried to really get myself into a serious state of mind.

b) How do you think this to might influence your overall feeling about the space in the future?
N/A

9) What was your experienced inclusion level in the space when you saw you're drawings becoming part of a whole growing system?
N/A

10) Can you choose 3 to 5 adjectives to describe how you felt during the test? This from an inclusive/belonging standpoint.
Happy, content, curious towards others…

11) Do you have anything you would like to add?
No not really… it was all clear.

Interview 3 _ control group 2
Info:
Construction Management & Engineering Major
Male
22 years old
Questions:
1) Could you help orient me to your overall feeling of inclusion/ belonging in a public space?
IN public spaces I don't really particularly feel a sense of belonging with those I don't know, I don't pay attention to others, except if something unexpected happens. I go my own way. Most of the time I am on my own.

2) How do …… contribute to that feeling?
a) Friends
Mostly I feel alone when I am with friends, the sense of belonging is better, but in some cases like a big group, I tend to walk in the back, this make me feel the opposite feeling of feeling very alone in the group.

b) Strangers
They don't really influence that feeling a lot unless something unexpected happens. Chaos with trains for example. I start talking more easily to strangers. Getting to know them. My feeling of belonging increases substantially than.

3) What do you usually do if you feel excluded in a public space?
Go on, basically, I always feel excluded and just keep doing what I am doing.

4) Describe a particularly good experience where you truly felt included.
The best feeling is in trains with strangers. Once an elderly woman asked me if I knew which train she should take. It turned out she needed to go the same place as me. We travelled together, when we arrived at out destination, we even went to eat something together at the Hema!

a) How did it make you feel?
Very happy to spend time with someone, I like dealing with randomness.

b) What influenced this feeling the most?
The unexpectedness of the moment makes it nicer to experience.

5) Describe a situation where you felt particularly excluded in a public space.
When I see a lot of couples around
a) How did it make you feel?
Lonely, excluded.
b) What influenced this feeling the most?
Not being with someone myself both in the moment and in general. Even I know the couple I feel like a third wheel.

6) When looking at the test you participated in, what did you experience during the test? How did it make you feel?
It was a little bit weird to be so open to a questionnaire. It was an intimate subject and hit me close to home. It was timed at a moment when I was thinking about it. At that moment it didn't impact me more than usually, but it was confronting

7) Depending on which role they took in the test ask the appropriate question:
a) How did it make you feel to see your work elaborated on by others? What were your thoughts?
N/A

b) Explain what seeing someone else draw did to you. How did it make you feel? What did it make you think?
N/A

8) How did the test make you feel about that public space?
a) During?
N/A

b) How do you think this to might influence your overall feeling about the space in the future?
N/A

9) What was your experienced inclusion level in the space when you saw you're drawings becoming part of a whole growing system?
N/A

10) Can you choose 3 to 5 adjectives to describe how you felt during the test? This from an inclusive/

10) Can you choose 3 to 5 adjectives to describe how you felt during the test? This from an inclusive/ belonging standpoint.

11) Do you have anything you would like to add?
Not specifically

Interview 4 _ control group 2
Info:
Psychology and Technology Major
Female
22 years old
Questions:
1) Could you help orient me to your overall feeling of inclusion/ belonging in a public space?
In general you have a standard group of friends and sometimes you walk around alone. I usually feel pretty included, like 75% of the time.

2) How do …… contribute to that feeling?
a) Friends
When they are there, it is someone to go to. I have a sense of directions, more comfortable.

b) Strangers
I feel aware of my surrounding. Makes me feel aware that I am part of the group of the public space without truly being included.

3) What do you usually do if you feel excluded in a public space?
I leave if I can… or I go to talk to people to see if I can get into what is going on.

4) Describe a particularly good experience where you truly felt included.
When I met strangers. I was asked by a friend to go to the Bier Professor (pub) to me some of his friends. It was awkward at first, but eventually I figured out there were some (strong) commonalities. Once there is a connection, it is easier to feel accepted in the public space.

a) How did it make you feel?
" Wow" there is someone like me; I felt at ease, I enjoyed myself.

b) What influenced this feeling the most?
The atmosphere and the people I just met.

5) Describe a situation where you felt particularly excluded in a public space.
Going to the club Santiago by myself. If you don't have anyone to go with, you don't feel as included
a) How did it make you feel?
Like an outsider, uneasy.

b) What influenced this feeling the most?
The sense of hardly knowing anyone there.

6) When looking at the test you participated in, what did you experience during the test? How did it make you feel?
I felt like I was being probed. It made me look at myself and how I was answering the questions. It felt as though I was exposing myself.

7) Depending on which role they took in the test ask the appropriate question:
a) How did it make you feel to see your work elaborated on by others? What were your thoughts?
N/A

b) Explain what seeing someone else draw did to you. How did it make you feel? What did it make you think?
N/A

8) How did the test make you feel about that public space?
a) During?
Fine, I might have answered the questions more positively than at home because there was a lot of excitement around me.

b) How do you think this to might influence your overall feeling about the space in the future?
N/A

9) What was your experienced inclusion level in the space when you saw you're drawings becoming part of a whole growing system?
N/A

10) Can you choose 3 to 5 adjectives to describe how you felt during the test? This from an inclusive/belonging standpoint.
Insightful of myself, also awkward, relieved and happy to help a fellow person.

11) Do you have anything you would like to add?
What is it for?
I think that feelings of inclusion you get are connected to the people you are with and the space you are in.

Interview 5 _ test A
Info:
Mathematics Major
Male
27 years old
Questions:
1) Could you help orient me to your overall feeling of inclusion/ belonging in a public space?
In harmony, it doesn't matter if I am alone or in a group…

2) How do …… contribute to that feeling?
a) Friends
It depends on the people. If they are colleagues or really close friends. In some cases it all goes naturally, I feel independent. But for some others if a silence falls, they feel the need to break that silence… I don't

b) Strangers
I feel it is a natural behaviour. Silence to people is uncomfortable as I just said, I don't care if it is silent or not. I am ok with both.

3) What do you usually do if you feel excluded in a public space?
I try to do everything to have a surrounding that makes me feel comfortable, I believe in the art of life, the art of living. Some people may be closed to me, but I try to be in harmony with my surrounding and myself.

4) Describe a particularly good experience where you truly felt included.
While traveling, when I don't know anyone. The contact might be nicer with more open-minded people.

b) What influenced this feeling the most?
If they are very outgoing, I find it draining to interact with them even If I enjoy it. If they are calmer I don't feel as tired after.

5) Describe a situation where you felt particularly excluded in a public space.
I try not to remember bad things, only the feelings I felt. That is my philosophy. Maybe a situation when a person very opposite form me walks into a room while I am telling a story. All the attention switches and conversations change even if I was not finished.

a) How did it make you feel?
I feel like the communication breaks down and this makes me frustrated…

b) What influenced this feeling the most?
The opposite character of the person walking into the group

6) When looking at the test you participated in, what did you experience during the test? How did it make you feel?
I looked first diagonally from the top right corner to the bottom left corner. I wanted to scan
7) Depending on which role they took in the test ask the appropriate question:
a) How did it make you feel to see your work elaborated on by o b) What influenced this feeling the most?
Being with the strangers and the evolution of getting to know each other.

5) Describe a situation where you felt particularly excluded in a public space.
In the first half of my first year in high school, some classmates were nice to no one. They were all from the same small village, no one got in and no one got out of the group.

a) How did it make you feel?
Lonely, like I was not good enough not very happy, sad…

b) What influenced this feeling the most?
They were a group and were close. If they laughed no one else would be allowed to laugh with them.

6) When looking at the test you participated in, what did you experience?
First I saw the words "leave your mark" and thought about what could be expected of me. I saw a

drawing on mine was in the space. Someone with the same thoughts, elaborated on mine, I think its like a good joke, good positive vibrations.

9) What was your experienced inclusion level in the space when you saw you're drawings becoming part of a whole growing system?
I don't particularly care but I like helping giving someone else a start. So maybe positive?

10) Can you choose 3 to 5 adjectives to describe how you felt during the test? This from an inclusive/ belonging standpoint.
Pleasure, satisfactions, helpful, social but also independent.

11) Do you have anything you would like to add?
All the answers I gave during this interview are regarding "who am I?" because you ask about me. I try through my answers to tell you who I am.

Interview 6 _ test A
Info:
Industrial Design Major
Female
22 years old
Questions:
1) Could you help orient me to your overall feeling of inclusion/ belonging in a public space?
I feel if it's really public and I am alone, not really included. In the library, or so when there is a good ambiance ad sphere where everyone is positive you can feel included. As a whole I feel pretty included.

2) How do …… contribute to that feeling?
a) Friends
They help a lot. They are including me; once I feel included I would be more likely to include strangers. If they are sitting in a group and I'm not with them. I don't really feel included.

b) Strangers
It depends on the context. On a plane with small talk, atmosphere is more comfortable than. If they don't acknowledge, I feel les included, more isolated even if I am physical close to them.

3) What do you usually do if you feel excluded in a public space?
It depends on that type of public space and what is going on around me. I can withdraw into myself. But if I have to be there, I initiate small talk with strangers. If I am standing outside a group of friend or so, I won't be as likely to interject into their conversation.

4) Describe a particularly good experience where you truly felt included.
I was on the train I was in a good mood, but the train was full so I was standing in the walkway. A lady asked me something, I heard she had an accent and asked her about it. We started talking, than a 3rd, 4th, and 5th person joined into the conversation. Simply because the atmosphere was friendly. If you are traveling alone it makes it easier to interact with new people, it was fun, we laughed and talked about out adventures.

a) How did it make you feel?
I felt included in their day's travels and stories. I liked that they could relate to my stories, I felt light-hearted and good.

b) What influenced this feeling the most?
The good nature of the people, their willingness to respond and join in. people interest.

5) Describe a situation where you felt particularly excluded in a public space.
In the train when I was traveling alone. I was sitting with a 4 seater. 3 friends came to sit next to me. They were talking. I didn't feel included or like I could interject in the conversation. I put on my headphones

a) How did it make you feel?
It was all right but I felt introspective, alone, the headphones made me feel like the public space was more like my private space. Like I was in a bubble.

b) What influenced this feeling the most?
Again the other people. The lack of their interaction with me and how active they were with each other. They were exclusive in their traveling together and excluding me.

6) When looking at the test you participated in, what did you experience during the test? How did it make you feel?
I was thinking of what everyone else put on the blackboard. (What they wrote or draw). I looked at how what I left would compare to what others put. It influenced the colours and size and location I choose. But it didn't influence what I drew. I liked it; I noticed that I usually draw the same thing

7) Depending on which role they took in the test ask the appropriate question:
a) How did it make you feel to see your work elaborated on by others? What were your thoughts?
N/A

b) Explain what seeing someone else draw did to you. How did it make you feel? What did it make you think?
In a way we were making something together. If they were drawing on the same board at the same time it influenced me more. We were doing it together and not by myself. I felt like we were drawing together.

8) How did the test make you feel about that public space?
a) During?
It was quit small and the drawing was not permanent. But I felt like I left a part of me, my mark. I think something more permanent like graffiti would bond me more to the space. I can see how leaving a mark on a wall or a stall can give you a sense of ownership and inclusion in the space.

b) How do you think this to might influence your overall feeling about the space in the future?
It would definitely influence me. It would be something familiar. If I walked in and saw stuff that belonged to me, that I drew (a name I wrote, something else I wrote or something I drew), something I recognized, it would make me feel more bonded. Like I belonged in the space. It might also depend on what you leave though I think.

9) What was your experienced inclusion level in the space when you saw you're drawings becoming part of a whole growing system?
More included, things wouldn't just be a wall but something I left my mark on, close to someone else's. Like we were drawing together even if I came after. Adding felt like a togetherness thing.

10) Can you choose 3 to 5 adjectives to describe how you felt during the test? This from an inclusive/ belonging standpoint.
Artistic, included (because I was physically getting involved with someone else mark and with them. I felt satisfaction.

11) Do you have anything you would like to add?
I think that's it!

Interview 7 _ test B
Info:

Interview 7 _ test B
Info:
Architecture Major
Male
22 years old
Questions:
1) Could you help orient me to your overall feeling of inclusion/ belonging in a public space?
I think it depends on the space and the occasion. Usually I feel pretty comfortable and included. This is even more so if I am not in the space alone.

2) How do …… contribute to that feeling?
a) Friends
If I am somewhere with my friends I feel safe and comfortable. If I am not with them I try to make my own connections. They make me feel at ease.

b) Strangers
Again it depends on the situation but also the stranger. I like interacting with strangers in a situation like in a train. It's the one place where you have to sit close to a stranger if the train is a little full.

3) What do you usually do if you feel excluded in a public space?
I try to get included, make conversation, small talk, mingle…

4) Describe a particularly good experience where you truly felt included.
At festivals. I go to a lot of them. When you get there you are complete strangers to each other's but after about 3 ours you become good friends. There is just an open vibe than. The attitudes of the people are open.

a) How did it make you feel?
Positive, good, appreciated and nice.

b) What influenced this feeling the most?
The interaction.

5) Describe a situation where you felt particularly excluded in a public space.
I work at a restaurant as a waiter. I usually try to make contact and small talk with my clients. This one time, a group of international businessmen came in. having a conversation was hard because there was a language barrier, as they could not speak good English. It was also clear that they were

were looking down on me because I was "just" the waiter.

a) How did it make you feel?
Disappointed but it's work. After I grab a beer with my colleagues and complain to each other. Once I get home, its over. I don't let it influence my night.

b) What influenced this feeling the most?
The distance both language and how they looked down on me.

6) When looking at the test you participated in, what did you experience during the test? How did it make you feel?
I didn't have much time but was intrigued. The experience was quick lacking some depth because of my time schedule. I thought it was fun.

7) Depending on which role they took in the test ask the appropriate question:
a) How did it make you feel to see your work elaborated on by others? What were your thoughts?
N/A
b) Explain what seeing someone else draw did to you. How did it make you feel? What did it make you think?
It made me laugh because I had a feeling I could see what kind of person the person drawing was. I saw both a friend and a projected person draw. What my friend drew I found typical of her, and what the projected person drew I found typical of a "nerdy" university. (He saw a packman and ghost be drawn by a projected person). It made me laugh and smile.

8) How did the test make you feel about that public space?
a) During?
As I said I was a little rushed for time. So I was not really able to take up the whole experience I think. But I found it interesting and intriguing, which is why I participated. I felt maybe a little rushed in the space but also comfortable.

b) How do you think this to might influence your overall feeling about the space in the future?
I think I might wonder about who the other people who drew after me are. Make me maybe a little more alert and interested in the space in my surroundings.

9) What was your experienced inclusion level in the space when you saw you're drawings becoming part of a whole growing system?
I saw that I was one of the few people who used the existing geometric shape for my drawings. There is a lot of diversity. We weren't working as a team but it all sort of comes together in the whole. Makes me feel more like part of the student body I guess. But I think it would be even more fun to see the faces with the drawings of every person. But the connection might not be the strongest then either.

10) Can you choose 3 to 5 adjectives to describe how you felt during the test? This from an inclusive/ belonging standpoint.
Helpful, funny, curious, interested…

11) Do you have anything you would like to add?

I think that If I had had more time to participate and express myself so to speak, I might feel even more connected to the people and the space I am in.

Interview 8 _ test B
Info:
Chemical Engineering Major
Female
19 years old
Questions:
1) Could you help orient me to your overall feeling of inclusion/ belonging in a public space?
Depends if it is crowded or not. I like to stand by the side usually. I don't get to involve. If there are only a few people I'm ok.

2) How do …… contribute to that feeling?
a) Friends
I will be more with my friends and less with the strangers. I distance myself from the strangers. I feel like a part of something and have someone to talk to.

b) Strangers
With strangers I am less likely to talk to them, I'll let them be. I would feel a little awkward and might not start a conversation.

b) What influenced this feeling the most?
Being with the strangers and the evolution of getting to know each other.

5) Describe a situation where you felt particularly excluded in a public space.
In the first half of my first year in high school, some classmates were nice to no one. They were all from the same small village, no one got in and no one got out of the group.

a) How did it make you feel?
Lonely, like I was not good enough not very happy, sad…

b) What influenced this feeling the most?
They were a group and were close. If they laughed no one else would be allowed to laugh with them.

6) When looking at the test you participated in, what did you experience?
First I saw the words "leave your mark" and thought about what could be expected of me. I saw a shadow created by the beamer and drew it. I was curious.

7) Depending on which role they took in the test ask the appropriate question:
a) How did it make you feel to see your work elaborated on by others? What were your thoughts?
N/A
b) Explain what seeing someone else draw did to you. How
When I drew I saw cat whiskers already drawn on the board. They were inviting and felt open to me. I also saw a smiley…I felt open and happy, the drawings made me laugh. I drew something and it was funny because suddenly a persona appeared on the beamer and started drawing something similar to my drawing. That made me feel happy.

8) How did the test make you feel about that public space?
a) During?
It was not crowded in front of the board. It felt like a very personal moment in the public space. Like it was my own personal space for that moment. No one else was watching me. There was also no line. I had no pressure to draw well or fast because of that. I could take my time. I felt relaxed.

b) How do you think this to might influence your overall feeling about the space in the future?
If someone else extended my drawing like I did to some other people as well, I think that would be a naive feeling. I would feel more like I belonged. I feel like it was teamwork to create something. A lot of people used the board after me in the end; there were a lot of different things. If I saw this

A lot of people used the board after me in the end; there were a lot of different things. If I saw this again when walking into the space the next time I think it would make me smile and feel a little more comfortable and included in the space.

9) What was your experienced inclusion level in the space when you saw you're drawings becoming part of a whole growing system?
As I said I felt like part of the board. I did not feel excluded. We seemed to really be working together to create something even though we did not know each other.

10) Can you choose 3 to 5 adjectives to describe how you felt during the test? This from an inclusive/ belonging standpoint.
Emm.. At first distant because I did not know what I needed to do, than a positive experience, part of a whole, happy and intrigued.

11) Do you have anything you would like to add?
No that is quit all right. But I am curious what this was for.
 (After summary) => I think that if this was to be beamed n a building bigger it would have more effect. You would be able to see it from further away. Now you only saw it up-close.

Interview 9 _ test C
Info:
Electrical Engineer Major
Male
23 years old
Questions:
1) Could you help orient me to your overall feeling of inclusion/ belonging in a public space?
I usually feel ok.

2) How do …… contribute to that feeling?
a) Friends
I guess friends contribute to that feeling by putting me at ease, knowing I have someone to talk to if I want to.

b) Strangers
I don't really mind strangers. They do not influence me that much.

3) What do you usually do if you feel excluded in a public space?
I guess I would start reading a book, or if my friends are there talk with my friends.

4) Describe a particularly good experience where you truly felt included.
I was stuck in a train. It appeared later that someone had jumped in front of it…we ended up having to wait for a really long time. With the other people in the train part I was sitting in, we starting talking and playing the game "wie ben ik" (who am I).

a) How did it make you feel?
It was fun, we got to be loose and goofy with people I did not know before hand. It relieved the seriousness of the situation

b) What influenced this feeling the most?
I guess the serious nature of the situation in collaboration with the getting to know those other people in the train.

5) Describe a situation where you felt particularly excluded in a public space.
I guess when two friends of mine were talking to each other and unconsciously leaving me out of the conversation.

a) How did it make you feel?
I felt alone, frustrated, annoyed

b) What influenced this feeling the most?
The fact that these were my friends and the were unknowingly ignoring me, even when I tried to join the conversation.

6) When looking at the test you participated in, what did you experience during the test? How did it make you feel?
I was one of the first people to put something on the board. I was intrigued by it. I was curious. It raised my curiosity and interest.

7) Depending on which role they took in the test ask the appropriate question:
a) How did it make you feel to see your work elaborated on by others? What were your thoughts?
(Someone added eyes to his drawing) It makes me feel happy. I like it, it makes me feel like we collaborated in something though I have no idea who it is.

b) Explain what seeing someone else draw did to you. How did it make you feel? What did it make you think?
N/A

8) How did the test make you feel about that public space?
a) During?
I felt like I had my own little private space in that public space. I actually ended up tuning out the world around me to some extent, until a friend joined me.

b) How do you think this to might influence your overall feeling about the space in the future?
I think that if I were to see the board again, in the same space with the drawing extended on, like I did now through the picture, I would be happy, feel like we did something together… maybe more included in the space to use your words…

9) What was your experienced inclusion level in the space when you saw you're drawings becoming part of a whole growing system?
It was increased definitely… I felt part of the whole, part of the blackboard…

10) Can you choose 3 to 5 adjectives to describe how you felt during the test? This from an inclusive/belonging standpoint.
Happy, curious, intrigued, creative

11) Do you have anything you would like to add?
Not really. I would only like to know what it was for now that you have asked such questions.

Interview 10 _ test C
Info:
Innovation Management
Female
21 years old

Questions:
1) Could you help orient me to your overall feeling of inclusion/ belonging in a public space?
I guess I usually do not really think about it.. Me I would say neutral… happy if I am with my friends.

2) How do …… contribute to that feeling?
a) Friends
I feel at ease. Happy with them.

b) Strangers
I usually do not really pay attention that much to strangers. If I do I start wondering if they have opinions about me or so. That has to do with insecurity I guess.

3) What do you usually do if you feel excluded in a public space?
I walk over to a friend… or walk away form the space if I do not have to be in it directly.

4) Describe a particularly good experience where you truly felt included.
I was at a train station and a foreign student asked me for help to get to where she needed to go to. It so happened she was going to The Hague like me. We ended traveling together, her telling me about her country: Brazil.

a) How did it make you feel?
It made me feel helpful, we really got to know each other. That made me feel happy. Her telling me about her culture and how she saw Dutch culture, the conversations we had, ect. They all made me feel included in her life to some extent.

b) What influenced this feeling the most?
Getting to know each other, her interesting life story, and her openness towards me.

5) Describe a situation where you felt particularly excluded in a public space.
I use to be bullied in high school so I guess that.

a) How did it make you feel?
It made me depressed, lonely, upset. I didn't feel good enough.

b) What influenced this feeling the most?
That I was being consciously excluded form everyone else because someone thought I was different and did not like that.

6) When looking at the test you participated in, what did you experience during the test? How did it make you feel?
I first looked at all the things already shared…it was pretty full when I got to it. I drew a smiley face.

I felt happy that I could share what ever I liked without being judged.

7) Depending on which role they took in the test ask the appropriate question:
a) How did it make you feel to see your work elaborated on by others? What were your thoughts?
N/A
b) Explain what seeing someone else draw did to you. How
did it make you feel? What did it make you think?
Well I saw someone else draw. Someone was standing in front of the board, which is why I came to look what was going on. I feel it motivated me to also share something.
8) How did the test make you feel about that public space?
a) During?
I felt happy, motivated, as part of the space because I added something on an object that was already so full.

b) How do you think this to might influence your overall feeling about the space in the future?
I do not really know.. my first reaction when I saw the final thing again was to smile. It made me happy. From this I think I would also feel happy if I were to see it in the space again later.

9) What was your experienced inclusion level in the space when you saw you're drawings becoming part of a whole growing system?
As I said, I felt special. It made me feel like I was becoming one with the crowd around me because except the person who drew right before me, I had no idea who else had shared something or if they were even still sitting in the Auditorium.

10) Can you choose 3 to 5 adjectives to describe how you felt during the test? This from an inclusive/belonging standpoint.
Motivated, happy, special..

11) Do you have anything you would like to add?
No I don't.

Social Places society (handwritten)

Survey or Questionnaire
Prepare a Web-based or paper survey and distribute to participants from your target audience. Word questions carefully to avoid leading or confusing the user, and interpret the results knowing that what people say they do and what they do are often quite different.

Focus Group
Bring together a small group of carefully selected participants to discuss a certain set of topics relevant to your concept. A facilitator should keep the group on topic and ensure that everyone contributes to the discussion.

Interview
Prepare a set of questions targeted to your concept, and ask users in a face-to-face setting. It is useful to have two researchers per interview session, so one can guide the discussion, and the other can take detailed notes.

4 Knowledge Mining
Leverage the experience of people who are uniquely qualified to offer insights—early adopters, power users, wizened veterans. Draw out their knowledge in surveys, focus groups, interviews, or brainstorming sessions.

5 Guided Storytelling
In this interview technique, ask the participant to walk you through a real-life scenario pertaining to your concept. Guided Storytelling questions often begin, "Tell me about the last time you…"

6 Guided Tour
Ask a participant to give you a tour of their space relevant to your concept. Pay special attention to how they customize their environment.

7 Personal Inventory
Ask participants to show you and talk about the contents of their purse, briefcase, pockets, car, or desk drawers. Your goal is to understand what people deem important enough to carry with them or store nearby, and why it makes the cut.

8 Web Eavesdropping
Spend some time immersed in Web chat rooms or discussion boards related to your concept. To avoid disrupting the community, save questions of your own until the end of your immersion period.

9 Beeper Study
Issue your participants beepers or cell phones. Instruct them to record what they're doing each time they are paged. (You can also ask them to fill out a brief survey, or to photograph their surroundings.) Several pages per day over the course of a week yield a spontaneous sampling of the participants' daily experience.

cultural probes (handwritten)

10 Photo Diary
Prepare a journal for each of your participants with space to paste photographs and make notes. Issue each participant a Polaroid camera, and ask her to record her experience with regard to a certain topic.

11 Adopt a User
If your goal is to reinvent an existing product, volunteer to act as technical support for someone who uses that product frequently. Each time your adopted user contacts you with a question, you will learn about how he understands the product, what he hopes to accomplish using it, and what steps he is likely to take to remedy a problem.

12 Shadowing
Arrange to spend some time following people from your target audience throughout their normal daily activities, making detailed notes about your observations.

13 Fly on the Wall
Choose a location relevant to your p[roduct] concept. Carefully observe how p[eople] interact with each other, with [the] ment, and with existing p[roducts] processes, or technolo[gy]

14 Video Observation
Arrange to record the a[ctivitie]s of a [given] space over a period of [tim]e. Leave th[e] camera long enough for participants [to get] comfortable, and scour the footage f[or] insights into behavior.
View the footage in time-lapse to reve[al] patterns of activity.

15 AEIOU
In any observational setting, use lists a[nd] sketches to record the activities, enviro[n]ments, interactions, objects, and users. [The] process of recording each of these components in detail often reveals breakdowns in the system, which transl[ate] into opportunities for your new product.

16 Task Analysis
List and diagram the steps your particip[ant] takes in order to achieve a given task. Th[e] task might be something as broad as choosing a bank, or as simple as logging [in] to verify an account balance.

17 Behavioral Mapping
Diagram a given space, and rec[ord the] movements and activities of pe[ople within] that space. This careful observ[ation can] reveal breakdowns, coping mechanisms, and frequently repeated behaviors— all of which can signify opportunity for a new product, process, or technology.

18 Prototype Evaluation
As early in the design process as possible, put low-fidelity prototypes in front of users for feedback and evaluation. Don't present the concept. Find out how they would try to use it without much explanation.

19 Think Aloud Protocol
Ask your part[icipant to perform] tasks using a [product or] a related exist[ing product and] think out loud [as they voice every] thought—as they try to complete the tasks. Quiet participants might need gentle reminders to think aloud as they proceed.

20 Draw Your Experience
Prepare your participants by asking them to record their habits or feelings with regard to a certain topic for about a week. At the end of the week, provide an invit[ing] array of drawing tools, and ask them to visually express their experience and feelings. Listen carefully to the stories as they describe their illustration[s].

21 Card Sort
Prepare your participants as desc[ribed in] Draw Your Experience. Provide a [set of] cards using words and/or im[ages rele]vant to your concept, and a[sk par]ticipants to arrange the car[ds so that] make sense to them.

22 Collage
Prepare your participants [as described in] Your Experience. In[vite a group] of participants to build collages from provided materials. A mixture of ambig[uous and] [unclear] [unclear] [unclear]

23 Velcro Modeling
Prepare your participants as described in Draw Your Experience. Assemble a toolkit of components common to the kind of product you hope to design. For example, if you're designing a remote control, provide various shapes that might act as the body of the remote, and provide easy to adhere buttons in a wide variety of shapes, sizes, and colors. Invite a small group of users to design their own product using these components.

strategic phase (vertical text)

17 REFERENCES (watermark overlay)

Africa Centre. (2013). Public Arts Festival Cape Town City Center. (Z. Z. One, Editor) Retrieved June 6, 2013, from Infecting the City: http://www.infectingthecity.com/

Ben Schouten, J. S. (2013). Playful Interactions Stimulating Physical Activity in Public Spaces. Paris: CHI, Experiencing Interactivity in Public Spaces I.
Chang, C. (2011, February). Before I Die. Retrieved June 6, 2013, from Before I Die: http://beforeidie.cc/

Chin-Lung Hsu, J. C.-C. (2008). Acceptance of blog usage: The roles of technology acceptance, social influence and knowledge sharing motivation. Elsevier , 45 (1), 65-74.

Debra Mashek, L. W. (2007). INCLUSION OF COMMUNITY IN SELF SCALE: A SINGLE-ITEM PICTORIAL MEASURE OF COMMUNITY CONNECTEDNESS . JOURNAL OF COMMUNITY PSYCHOLOGY , 35 (2), 257-275.

Dubernard, P. (2012, December). Bâtissons une planète plus intelligente Ville par ville . Bâtissons une planète plus intelligente Ville par ville . (IBM, Ed.) Belgium.

Eric Paulos, E. G. (2004). The Familiar Stranger: Anxiety, Comfort, and Play in Public Places . Vienna: CHI.

Falk, (. T. (2013, August 13th). top 10 most dynamic cities of the future. Retrieved March 2013, from Smartplanet: http://www.smartplanet.com/blog/cities/top-10-most-dynamic-cities-of-the-future/4637?tag=content;siu-container

Falk, T. (2012, August 21rst). Massive stimulus plans announced in Chinese cities. Retrieved March 2013, from Smartplanet: http://www.smartplanet.com/blog/cities/massive-stimulus-plans-announced-in-chinese-cities/4750?tag=nl.e660

Feng Wang, J. H. (2011). New Carriers, Media and Forms of Public Digital Arts.

Jiangnan University and Eindhoven University of Technology , School of Digital Media and Department of Industrial Design. Jiangnan/ Eindhoven: Springer-Verlag Berlin Heidelberg .

Fogg, B. (2009). A Behavior Model for Persuasive Design. A Behavior Model for Persuasive Design (p. 7). Claremont: ACM .

Halper, M. (2013, February 11th). The cold truth of new media. Retrieved March 2013, from Smart Planet: http://www.smartplanet.com/blog/bulletin/the-cold-truth-of-new-media/12462?tag=nl.e660&s_cid=e660&ttag=e660

Harper, M. (2013, February 5th). As China takes graphene lead, Nokia, Philips, Europe get cracking. Retrieved March 2013, from Smartplanet: http://www.smartplanet.com/blog/bulletin/as-china-takes-graphene-lead-nokia-philips-europe-get-cracking/12029?tag=nl.e660&s_cid=e660

Hazlett, R. L. (2006). Measuring Emotional Valence during Interactive Experiences: Boys at Video Game Play. Montreal: ACM.

Ho, S. Y. (2012, May 23rd). The effects of location personalization on individuals' intention to use mobile services . Elsevier .

Ilpo Koshkinen, J. Z. Design Research Through Practice, from the lab, field and showroom.

Jana, R. (2012, December 26th). Pan-Asia predictions for 2013: new buisness, same politics. Retrieved march 2013, from Smartplanet: http://www.smartplanet.com/blog/bulletin/pan-asian-predictions-for-2013-new-business-same-politics/8932?tag=nl.e660&s_cid=e660

Jobson, C. (2012, January 1). This is What Happens When You Give Thousands of Stickers to Thousands of Kids. Retrieved June 6, 2013, from Colossal: Art and visual ingenuity: http://www.thisiscolossal.com/2012/01/yayoi-kusama-obiliteration-room/

Joep (J.W.) Frens, K. (. (2009). Setting the Stage for the Design of Highly Interactive Systems. Seoul: IASDR.

Johnson, P. (2012, March 9). Things I Wish I Saw on the Playground: Community Chalkboards. Retrieved June 6, 2013, from Play Scapes: http://www.play-scapes.com/play-design/contemporary-design/things-i-wish-i-saw-on-the-playground-community-chalkboards/

Jours, D. T. (2012, June). 21 Balançoires (21 Swings). Retrieved March 2013, from vimeo: https://vimeo.com/40980676

Lucy.J.Robinson, L. C.-W. (2012, May 31rst). Effects of intrinsic and extrinsic motivation on attention and memory. Elsevier .

Main, M. B. (2011). ADULT ATTACHMENT INTERVIEW PROTOCOL.

Mélanie Mingotaud, J. C. (2012, April 20th). 21 BALANÇOIRES makes a proud return to Promenade des Artistes in Quartier des Spectacles: a new springtime ritual for Montreal! Retrieved March 2013, from Canada newswire: http://www.newswire.ca/en/story/958817/21-balancoires-makes-a-proud-return-to-promenade-des-artistes-in-quartier-des-spectacles-a-new-springtime-ritual-for-montreal

Mitchell, W. J. (2000). Designing the Digital City . MIT, School of Architecture and Planning . Springer-Verlag Berlin Heidelberg .

Osborne, (. C. (2013, February 20th). Microsoft's Zhang: China will represent the future of innovaiton. Retrieved March 2013, from Smartplanet: (http://www.smartplanet.com/blog/bulletin/microsofts-zhang-china-will-represent-the-future-of-innovation/13270?tag=nl.e660&s_cid=e660&t-tag=e660

Osborne, C. (2013, February 19th). The Mourning Briefing: Innovaiton in China. Retrieved March 2013, from smart planet: http://www.smartplanet.com/blog/bulletin/the-morning-briefing-innovation-in-china/13057?tag=nl.e660&s_cid=e660&ttag=e660

P. M. A. Desmet, R. P. (2007). Emotional Design; Application of a Research-Based Design Approach. Delft: Springer Science + Business Media B.V.

Partners, B. &. (2012, Novermber). Connecting. (Bassett & Partners) Retrieved March 2013, from vimeo: https://vimeo.com/52861634

Phillips-Salimi, C. (2009). YOUNG ADULT CANCER SURVIVORS' EXPERIENCES OF CONNECTEDNESS WITH THEIR HEALTHCARE PROVIDERS . partial fulfillment of the requirements for the degree Doctor of Philosophy , Indiana University , School of Nursing.

Pieter M.A.Desmet, M. B. Measuring Emotions. Delft University of Technology , Industrial Design. Delft University of Technology .

Richard .M Lee, S. B. (1995). Measuring Belongingness: The Social Connectedness and the Social Assurance Scales. Journal of Counseling Psychology , 42 (2), 232-241.

Richard M. Lee, M. D. (2001). Social Connectedness, Dysfunctional Interpersonal Behaviors, and Psychological Distress: Testing a Mediator Model . Journal of Counseling Psychology

48 (3), 310-318.

Richard M. Ryan, E. L. (200). Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions . Contemporary Educational Psychology (25), 54-67.

Ronald M. Sabatelli, S. A. (2005). Assessing Outcomes in Child and Youth Programs: A Practical Handbook, Revised Edition . University of Connecticut , State of Connecticut Office of Policy and Management , School of Family Studies Center for Applied Research .

Saul Greenberg, M. R. (2001). The Notification Collage: Posting Information to Public and Personal Displays . Seatle: ACM.

Sherwood, M. the oblitiration room. Queensland Art Gallery.

Sophie.M.J. Brenny, J. H. (2013). Increasing the feeling of connectedness in a public space. . Eindhoven University of Technology, Departement of Industrial Design, Eindhoven.

Tau Beta Pi (2013). Undergraduate Student Organizations. Retrieved from Carnegie Mellon University: http://www.cmu.edu/me/current/undergraduate/studentorgs.html

Vince, G. (2012, May 3rd). China's eco-cities: Sustainable urban living in Tianjin. Retrieved March 2013, from BBC: http://www.bbc.com/future/story/20120503-sustainable-cities-on-the-rise/2