Double-take: Exploring social connection in urban parks through confusion

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1 ABSTRACT

Public spaces are essential for establishing social recognition and interaction. However, social interactions in public spaces are decreasing. It is therefore necessary to re-consider the design of physical features and the needs of park visitors during the process of designing public spaces. The objective of this study was to explore how a product without a clear aim can change social connection in public spaces. A final prototype *''Double-take''* was built and a series of field observations were carried out in urban parks to understand how people interact with others while using these prototypes. The qualitative data was open coded and thematically analyzed. The results show how the interaction with the prototype stimulates discovery, initiates social connection, causes confusion and lifts people's spirits. Consequently, researchers and urban planners should further explore products without a clear aim as a design consideration to strengthen social connection in public space.

2 INTRODUCTION

A public space is a place for social interaction and raises people's spirits, provides relief from daily routines, strengthens sociability and is considered indispensable for sustaining the social cohesion and quality of life by the new urban agenda [1, 2]. Urban parks in particular are essential for establishing social recognition and interaction between residents. These interactions can often lead to long-lasting social change like development of social ties and social capital [3, 4]. However, social interactions in public spaces are decreasing [5]. For example, it was observed in one study that visitors in urban parks in the Netherlands had relatively few interactions with strangers and prominently met with people they already knew [6].

Therefore, it is necessary to reconsider both physical features, such as benches, as well as the needs of the park visitors during the process of designing public spaces to induce meaningful social interaction again [5]. Functional features are an effector of the quality and quantity of people's absorption of social interaction in public spaces [7]. It was stated that in order to create a successful public space for people and groups the space needs the following factor: ''*proper facilities in the space environmental comfort and function''* [7, p.3]. On top of that, there is one type of need people have when they attend public spaces; the need to discover [8]. This need to discover is often met to meet new people and to find new challenges in the landscape of public space that are in contrast with the familiar ones [8]. One of the physical design elements affecting the visitor's need to discover is the ''degree of functionality''. Having a physical design with a clear purpose subtracts the visitors from exploring the possibilities of interaction and its effects [9]. Interestingly, the urban agenda seems to do the same by designing functional and efficient spaces instead of stimulating user discovery. Consequently, this research focusses specifically on products that are ''less'' functional. The exploratory research aims at showing how products that have no clear purpose can change the social interactions in public space by answering the following question: *How does a product without the presence of clear aim change social connection in public parks?*

The paper illustrates a research-through-design field study and aims to explore the processes of social interaction through the method 'prototyping social interaction' [10]. The process shows how scientific knowledge is generated through a consequent cycle of design, building and testing experiential prototypes [11]. A preliminary research was done in the form of a literature study, low-fidelity prototyping and observations. This preliminary study was followed-up by the development of one high-fidelity physical prototype, which was investigated through multiple observations in real-life settings. The focus of this research is to understand how people interact with others while using these prototypes. The purpose of this study is to gather social information and to identify and describe how orientations and behaviors towards the prototype are created in social interaction [10].

This paper will first touch upon theoretical framing of social connection in parks, design public space, degree of functionality of the design and the methodological foundation of this research. Afterwards, the design of the preliminary prototypes will be elaborated on. Furthermore, the results of the prototype observations will be laid out. Finally, the observations and findings will be thematically analyzed and reflected on.

3 RELATED WORKS

3.1 Social connection in Parks

Social interactions are critical in maintaining pride, community cohesion, and social capital [12]. Yet, due to the increased mobility, changing work patterns and developments in communication the social ties between residents of urban neighborhoods are in decline. However, parks play a role in increasing social capital again by providing meeting

opportunities so neighborhood residents can develop social ties, relationships and establish recognition [4, 13]. What is more, parks have the unique opportunity to share space with others in an undemanding manner [13]. As a consequence, public space offers the opportunity for both weak and one-off interactions as well as structural and high-level interactions between different social and ethnic backgrounds [14]. The question that remains is how local parks can facilitate social interactions. It was found that the starting point to forging sustained contacts may refer to simply seeing and hearing [15]. The relationship between neighbors can develop through greetings, short-duration outdoor conversations and repeated visual contact [16]. These interactions are defined by some researchers as ''weak ties'', which are small casual interactions such as waving your hand, saying hello or nodding [2]. Small interactions like these are powerful and can reduce feelings of social isolation but also provoke feelings of safety and social support, which is shown to be particularly relevant for marginal and vulnerable groups [16, 17].

3.2 Design public space

To design something that is effective within the context of public space it is essential to understand why spaces are used or ignored and what role these places play in people's lives [8]. Spaces that do not serve an important purpose for people or do not meet people's needs will be underused and unsuccessful [1, 8]. Therefore, to make public spaces a success it is important to design features based on people's needs [1]. There are five types of needs in public spaces: comfort, relaxation, passive engagement, active engagement and discovery [8]. This paper will mainly be focusing on the need to discover. Within the scope of this paper discovery represent the desire for stimulation, enjoyment and the challenge we have when exploring new parts of the space [18]. According to one study the presence of physical opportunities to sit, think and pause are a couple of the most essential design considerations within a public space that could generate social interactions [7]. Consequently, these considerations are taken into account during the development of the prototype.

3.3 Degree of functionality of the design

The functional aspect is not always as relevant in the design of everyday systems and is not always the final aim of every design endeavor [19]. In fact, having less rigid boundaries such as functionality could elicit more creative explorations [19]. Another study gives an example where visitors are able to move around and discover parts of the place [8]. This example showed that the major aspect that initiates discovery appears to be the changing vistas and physical design. In other words, it is likely that getting familiar with the physical design might reduce the visitors interest to discover. This is described as as follows: *''For discovery to continue to be part of someone's experience of familiar places, it would be essential to have changing physical qualities and changing human activity as well''* [8; p. 238]. Following from this, this study focuses on designing a prototype with an element of open-endedness as a principle to design less familiar experiences, to stimulate participation and to enhance a sense of discovery. In addition, having a prototype without clear functionality can open-up a wider variety of purposes, even though it might not be used for all those purposes. This feature of technology

can be captured by the term ‘’multistability’’. This notion is used in one of central approaches in philosophy of technology called *postphenomenology* [20]. The notion of multistability answers the question of how we should understand that technology sometimes in part determines our actions and choices and at the same time remains open for interpretation and manipulation. Otherwise put, multistability refers to the idea that any technology can have multiple purposes and can be meaningful to different users an in different ways [21]. It would be interesting to design a prototype that embraces this idea. On the other hand, the prototype can also reach a dominant stability. It has been showed for example that public benches are sometimes used for a different purpose than what they are designed for, such as sleeping [22]. In consequence, many public benches are now designed in a way to prevent people from sleeping on it by inviting the dominant stability of sitting: bench-as-seat stability [22]. In other words, it could be the case that the prototype becomes familiar to the visitors of the park over time and perhaps will be dominantly used for its designed purpose. However, designing a functional object that expresses a certain degree of contempt for specific groups could serve as empirical evidence for representing an example of hostile architecture [23]. Hostile designs are about making public space uninviting and deliberately excluding the unwanted. Such designs could however also unintentionally affect other vulnerable groups, such as children and the elderly [1]. A frequently visible example of hostility is the intentional lack of seating solutions in public spaces. Meanwhile, having the opportunity to sit or stay somewhere is one of the qualities drawing people into public spaces [24]. Moreover, hostile designs are labeled as designs that make certain actions impossible, or almost impossible, in the public spaces they occupy [23]. This study avoids this by not replacing physical features of the park, but by enriching the park with additional designs that have similar opportunities (to sit, or throw something away) to the physical features present in the park.

3.4 Transformative practices

The underlying methodology of this project is based on the ‘Design research and innovation framework for Transformative Practices’ (TP framework) [25]. The framework aims to tackle societal challenges and to design and innovate Transformative Practices; ‘’TP operates within the paradigm of the transformation economy, where societal challenges are addressed locally, though taking into account their systemic complexity, through multi-stakeholder collaborations*’’* [25; p.2]. Transformative practices deal with complex socio-technical systems, such as the challenge that revolves around the future of cities and how we socially live together in public spaces. Therefore, it is necessary to carry out analyses, to shift between lenses, to immerse in the context, to reflect on actions and to spot hidden patterns and opportunities [26]. This way mediations can be designed that change people’s experience of the world and support them to transform [25].

4 METHODS

4.1 Constructive design research

The prototypes in this study were based on Constructive Design Research (CDR). 'Constructive Design Research' is a form of design research and has been defined as "that imagines and builds new things and describes and explains these

constructions" [27; p.6]. CDR provides multiple methodologies and this research focuses on the CDR's methodology ''Field''. The specific thing concerning design field-work is to use prototypes and to contextualize; going after things in natural settings. Field researchers are mainly interested in understanding how communities/people make sense of and live with designs: '' They are interested in how people and communities understand things around designs, make sense of them, talk about them, and live with them.''[27; p. 69].

4.2 Prototyping social interaction

To create proper conditions for using prototypes in the field the study followed methodological guidelines. The main focus in ''prototyping social interaction'' is that a prototype is not seen as something technological that needs to be tested to see if it works or not. Instead, the prototype can be viewed as a ''pair'' between a representation (interactive technology) and the people using it in normal social situations (people engaging in interaction with other human participants). One study argued that designers should be able to place their imaginations into ordinary settings and follow it in this setting by using naturalistic research design, method, and time to allow social processes to unfold [28]. Consequently, to properly analyze the prototypes this study adhered to the following guidelines [28]:

1. *Ordinary social setting*. To overcome studio-based contemplation the social interaction has to take place in a real context.
2. *Naturalistic research design and methods*. People decide their own experiences. Data must be gathered using empirical and up-to-date research methods.
3. *Openness*. The designer cannot force the people to use it in predefined ways.
4. *Sufficient time span*. The prototype needs to be followed for at least one week.

5 DATA COLLECTION & ANALYSES

5.1 Study set-up field observation

A series of unstructured observations were conducted in order to study social interaction. Both spontaneous verbal and non-verbal behavior was observed in different settings. In total, 5 observations were conducted at different times and on different days of the week. Two during a preliminary study and three during the main study. One of the observations was performed at a University Campus and other observations were performed in Torckpark, Wageningen. The average duration of each observation was between 2 and 2.5 hours. Special attention was paid to how people interacted with others while using the prototype, and how these interactions influenced the way in which people used the prototype. Written field notes where taken on the interactions, actions, number of people, timing and (basic) demographics as (estimated) age range and gender. In addition, some of the interactions were videotaped. The observed content was written down and analyzed through thematic analyses.

5.2 Thematic analyses

Coding took place in concordance with the qualitative thematic analysis approach using an open/inductive coding procedure. As proposed in the literature, the following steps for thematic analysis were followed: (1) familiarising yourself with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes and lastly (6) producing the report [29].

6 RESEARCHING PROTOTYPE DESIGN

6.1 Preliminary study

To make the right design consideration, such as the legibility of the prototype, and to understand how these relate to their context and situation it is necessary to base the design on an iterative process of prototyping. Therefore, a few prototypes were pilot tested to explore if the concept of ‘’a product without the presence of a clear aim’’ would have the potential to draw people’s attention. Moreover, the tests gave insight into the interactions and social benefits of these prototypes and how the context influenced their interaction.

Low fidelity prototypes

(1) The first prototype that was designed is *Grass Bench*. Grass Bench is a rectangle of artificial turf attached to a concrete bench situated at an university campus, as shown in figure 1. The motivation for this concept is that people that have no place to sit will start to sit on the ground. They give the ground/grass the purpose of ‘something to sit on’. Therefore, it was interesting to turn this around and to see what happened when the ground-surface is moved to the sit-surface. Yet, the prototype was unsuccessful to change any social connection. However, the prototype did show some essential contextual insights. The working environment of the campus was not the right setting for this study; most actors were in hurry and were not in the right mind-set to pay attention for new things aside from their own purpose to be there. In brief, it was not the right environment which therefore needed to be changed.

Figure 1: Prototype of Grass Bench prototype at TU/e Campus.

(2) The second prototype that was designed is the *Lifted Urban Trash Can*. Lifted Urban Trash Can is a trash can that is connected high onto a pole and situated in an urban park, as shown in figure 2. The idea of this concept was based on an activity people often perform in the park: throwing something away. However, this prototype aimed to make this activity more difficult by placing the trash can at a unreachable height, which is unusual considering that throwing away trash is something one normally does not think about. The open-endedness of the trash can aimed to let the visitors of park use their creativity to think and explore the purpose and interaction. The prototype did indeed draw the attention of some of the visitors in the park, some people were laughing and making pictures, while others tried to solve the ‘’height’’ problem by sitting on each other’s shoulders. However, the prototype caused little social interaction. People who were sitting in the park did observe how people where interacting with the prototype, but did not physically approach them. As a final note, the prototype was not positioned conveniently. Many people who were walking in the park did not pass the prototype or did simply not notice it was there.

Figure 2: Prototype of Lifted Urban Trash Can prototype at TorckPark, Wageningen.

The results retrieved from the preliminary study were used to develop the final prototype. Based on these results, it was eventually decided to further iterate on prototype 2 for the final prototype.

6.2 Final prototype design: Double-take

‘’Double-take’’ is a trash can that can be moved upwards and downwards (Figure 3). This prototype was designed for the purpose of facilitating and triggering people to explore, pause, think, share and discover with others. The prototype was built with a pully-system, counter-weight and a rope with pull-handle which is all covered up with a wooden housing. To make the housing more friendly and approachable the shape was inspired by the classis arcade machines. The housing has one vertical gap on the side so people can look inside of the housing to see the mechanism. The housing can be attached to round and flat surfaces with a lashing strap.

Figure 3: Prototype Double-take connected to a lamppost in Torckpark.

The trash can goes down by pulling the rope with the handle horizontally. This means that when the user want to pull the rope all the way the user needs to walk backwards to do this, making the interaction more outstanding than pulling the rope down. When the trash can has dropped someone else can throw something away, as shown in the figure 4 below.

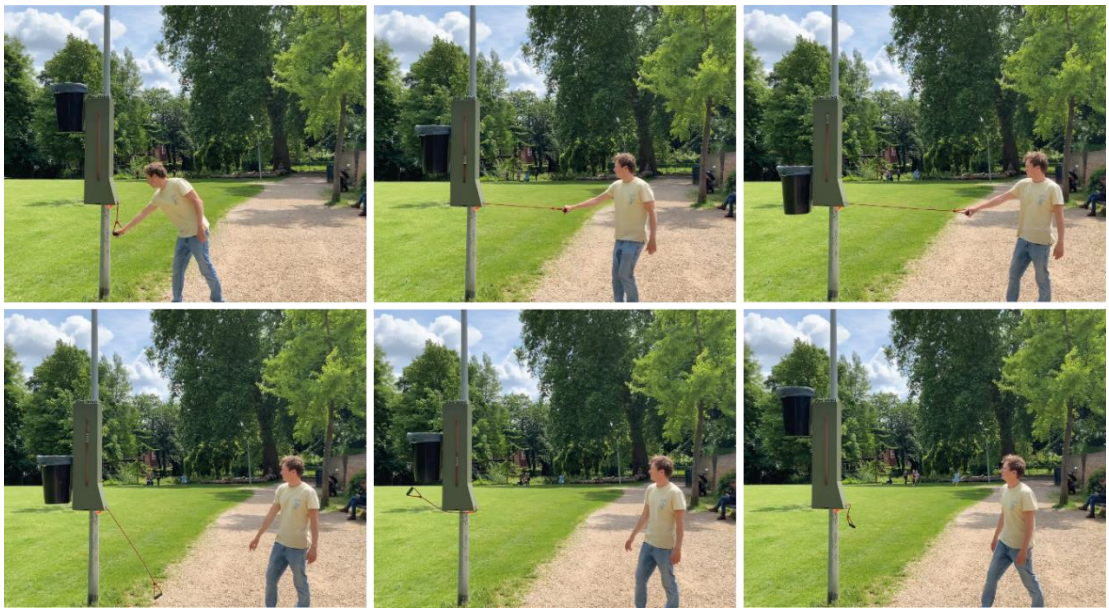

Figure 4: Prototype Double-take pull-system.

By this means the prototype stimulates people to work-out this ‘’heigh-challenge’’ together. On that note, Double-take aims to give the people the opportunity to physically try out different possibilities for interacting and to be creative by means of social interaction and collaboration. The choice of a rope instead of something like a button was based on the fact that it supports more dynamics and variations of interactions. By doing this, people can decide how far or how fast they like to pull the rope and if they pull alone or with others. The mechanism and weight of the prototype were adapted to the estimated strength of children as well elderly people. When the rope is released the trash can goes up by itself (due to the counter-weight). This means when the prototype is not used, the trash can stays upwards. When the trash can hits the top it makes a loud ‘’tack’’ sound, which can be heard by people in the park.

The position of double-take was well considered and should be seen as part of the prototype. Double-take was positioned at the edge of the park, on the side of a walking route. In this way, people visiting the park felt comfortable to stop and stay at the edge of the park, because they were able to see their surroundings [30]. In addition, this place provided enough space around the prototype so people could use it in different ways. To avoid people from being excluded or forced to make use of the prototype, it was installed right next to an ordinary trash can.

7 RESULTS

7.1 Actors

Any person who attended the study site and showed any form of interaction with the prototype was considered as actor within this study, and was included in the observations. A distinction was made between actors that were bystanders and actors that were group-members. Bystanders were considered as people who are not initially interacting with the prototype. Group members were considered as people who attend the park together with the person that interacts with the prototype.

7.2 Qualitative findings

Four main themes emerged from the observational data that provided insight into the influence of a product without a clear aim on social interaction in public parks; (I) Initiating social connection (II) Causing confusion (III) Passive versus active engagement and (IV) Lifting people’s spirits.

I. Initiating social connection

Within the theme ‘’Initiating social connection’’ it was observed that the prototype caused social connections to occur between both group members as well as bystanders.

Regarding the social connections between bystanders, this was often observed in the form of the prototype starting a conversation or making people ask questions. One woman for example sat in her walker while a group passed by, she made

a comment about their interaction while pointing at the prototype. The group responded with a couple of sentences. After this, the woman started to talk to a man sitting close to her. During this conversation, she also pointed at the prototype. Other people were approaching each other physically after an interaction with the prototype occurred. Two boys went back to play with the rope of the prototype, and while they were pulling the rope a group of six girls walked towards the boys. One of the girls started to talk to the boys and said: ‘’Could you hold it down for me?’’. The boy looked at the girl, pulled the rope and held the trashcan down. Some of the girls throw something away and one girl says: ‘’Thank you!’’. Another type of connection that was observed between bystanders was of a non-verbal nature, including nodding, eye-contact or smiling. One girl was pulling the prototype and then she looked and smiled at a woman who was sitting nearby. Another boy was sitting on a bench 20 meters away and noticed a girl interacting with the prototype, and he shouted: ‘’Hi, [her name]!’’.

Social connections between group members after an interaction with the prototype were seen in the form of sharing, giving other group members instructions or serving as a conversation topic (Figure 5). Giving instructions was seen when a woman and man walked past the prototype and the woman started to mimic pulling the rope towards the man she was with. An example of a conversation topic is when a father and child walked by the prototype and the child said: ‘’Dad, you can just throw it in here!’’. The child started to point in the direction of the prototype, and the dad responded: ‘’Quite funny hey, a new kind of trash can.’’.

Figure 5: Group members give instruction about how to use Double-take.

II. Causing confusion

Within the theme ‘’Causing confusion’’ two subthemes were identified: (1) Unclear functionality and (2) Unclear usability. Functionality refers to the purpose of the prototype, whereas usability refers to the how the prototype should be used.

Overall, it was observed that actors showed signs of confusion after interacting with the prototype due to aspects of both functionality and usability being unclear to them. Often times, this confusion initiated more or new social contact as well between group members and bystanders.

1. Unclear functionality

Unclear functionality was observed when actors did not know what purpose was behind the prototype (Figure 6). One boy part of a group walked up to the prototype, stopped and looked at it from different angles. He then started to pull the rope, and another boy said: ‘’Oh, what’s in here? Why does this hang onto this?’’. Other members of the group then walked up to the prototype as well, and one of them said: ‘’I really don’t know?’’. Another man and woman walked past the prototype with confused faces. The man said: ‘’Is this an ingenious system you can pull?’’, to which the woman said: ‘’Uhm, no idea?’’.

Figure 6: People observing Double-take.

In other cases when the functionality was unclear, actors believed the prototype represented something else. One woman thought the prototype was some sort of gym equipment and a girl believed it served as a basket for basketball. A thought that also came forward was from a man who thought it was designed this way so that animals are unable to get to the trash, and that it does not have to be emptied that often in this way. Another man understood that the prototype served as a trash can, but believed it had another function as well: ‘’Really genius to motivate people to throw away trash and to use muscle strength. Really nice.’’.

2. Unclear usability

Initially, how the prototype was ought to be used showed to be unclear to most actors. One girl tried to pull the rope sideways and said: ‘’Do you need to stand here?’’, after which the rope did not move. The other girl replied: ‘’No, you have to stand here’’ after which she started to pull the rope from the right angle. Both girls looked at each other while pulling the rope, and eventually the trash can dropped. Another group of three was sitting in the park, then stood up and

ran towards the prototype. All three of them then tried to throw their plastic coffee cups inside the trash can even though it was still at its highest point.

On the other hand, there were also some actors who immediately used the prototype in the correct way. One man said: ''Kind of looks like some sort of game or something'' to which the man who accompanied him said: ''One holds it open, and the other throws something in.'' Interestingly, there also was one man who sat in the grass, stood up, walked towards the prototype and pulled the rope in such a way that he was able to throw the trash away all by himself instead of needing someone else's help.

III. Passive versus active engagement

Within the theme ''Passive versus active engagement'' it appeared that actors had different types of interactions with the prototype; some were more passive and on the background whereas others were more active by directly approaching the prototype.

Actors who had more passive attitudes were often times observing someone interacting with the prototype and were not interacting with the prototype themselves. Within a group of girls, one of them started to pull the rope without hesitation whereas the other 5 girls were watching her. One woman was walking past a group who was interacting with the prototype, she looked at the interaction and started to smile. Other actors were pausing or standing still when they came across the prototype, to be able to take a closer look and examine it better. One man who was walking his dog stopped in front of the prototype, looked at it from different angles for about 30 seconds and then left again without touching the prototype. Sometimes, actors were a bit more hesitant to pull the rope; after one girl had let go of the rope another girl sprinted towards the rope and grabbed it, but was doubting whether to pull it or not and eventually gave the rope to another girl.

Other actors adopted a more active attitude when interacting with the prototype, involving kids, adolescents, adults and elderly, as shown in figure 7. One young man was pulling the rope, while an older man who was accompanying him looked inside the trash can and then threw something away. The young man smiled when he saw this. Another example is of a man and woman who were walking past the prototype.

Figure 7: Kids, elderly and adolescents interact with prototype.

The woman said: ‘’Should we try this for a moment?’’ and started to pull the rope, while the man was watching her. They both smiled and carried on with their walk. Another type of active engagement that was observed referred to some actors pulling the rope multiple times; two boys walked past the prototype, stopped and started to pull the rope for about 10 seconds after which they continued their walk. Lastly, it was also seen that sometimes actors would leave their spot in the park because of the prototype. Two young women who were sitting down on the grass stood up and walked towards the prototype, after which one of them threw something away while the other woman was watching her (Figure 8).

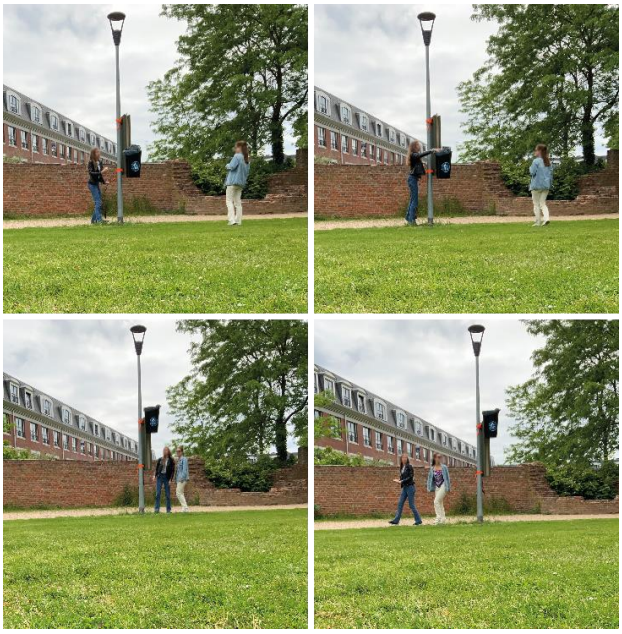

Figure 8: Two young women actively interacting with the prototype.

IV. Lifting people's spirits

Within the theme ''Lifting people's spirits'' two sub-themes were identified: (1) The prototype makes the people interacting with it and others laugh/smile and (2) People get excited because of the prototype.

1. The prototype is making the people interacting with it and others laugh/smile

Often times, it was observed that actors who interacted with the prototype made bystanders who were watching smile or laugh, as shown in figure 9. For example one man, who was watching an interaction happening, started to point in the direction of the prototype, laughed and then spoke with a loud tone: ''Did you see what he just did?''. Another example was within a group of boys and girls, when one of the boys walked underneath the trash can and said: ''Look at me I'm underneath it, I'm underneath it, ahhh!''. After this, the whole group started to laugh. Overall, actors who interacted with the prototype were often laughing and smiling themselves as well. One boy who was pulling the rope repeatedly said: ''Ha ha ha! […] I do like it!''.

Figure 9: Man on the right is smiling when two boys try to throw something away.

2. People get excited

Besides making people laugh and smile, another frequent observation was that the prototype made people excited in some way when they interacted with it or when they observed someone else interacting with it. For example when one girl was pulling the rope and the man accompanying her shouted and cheered: ''Woohoo!'', and while this was happening the man and a woman were smiling, laughing and watching the girl and man interact. The woman then proceeded to make several pictures of the interaction from different angles. Another example was seen with a group of six girls, when one of them

started to pull the rope seemingly without any hesitation, while the other five girls were watching. One of the girls said: ‘’Oh my god, this is actually really nice!’’. An additional moment of excitement was observed when a man walked past the prototype and made contact with the observer and his colleague in a loud and enthusiastic manner. He said: ‘’Do you know if this is a trash can?’’, to which the observer replied: ‘’Yes, it is.’’ The man in turn responded: ‘’Really, very nice idea!’’.

8 DISCUSSION

Main findings

For this research, a prototype was used to gain insight on how a product without the presence of a clear aim can change social connection in urban parks. The results show that having a product with an unclear functionality and/or an unclear usability can make people confused. As a result, people who interacted with the prototype proceeded to think, make assumptions, stop, collaborate and explore the purpose of the product by asking questions and trying different actions. This confusion initiated more and new social contact between group members and bystanders. The social connections between bystanders happened both verbally, such as starting a conversation and making people ask questions, as well as non-verbally including nodding, eye-contact or smiling. Social connections between group members was seen in the form of sharing, giving other group members instructions or having conversations about the prototype. In addition, the prototype frequently resulted in interactions that made people smile, laugh and/or get excited. People had different types of interactions with the prototype; some people where more passive, whereas others more active. Furthermore, it was seen that only a few people used the regular trash can instead of the prototype.

Discussion of main findings

The results suggest that as a result from interacting with the prototype, the social contact people had with bystander(s) mostly involved a brief conversation. This is in line with another study, which showed that park visitors have more weak and one-off interactions than strong interactions with people they do not know [6]. However, the results indicate that many people did smile or had eye-contact with bystanders, which can become the starting point to forging sustained contacts [15]. In addition, it has been argued that, as a rule, people do not interact in public spaces unless there is an obvious reason to do so, such as curiosity or collaboration [31]. This is in line with the finding that bystander(s) started to ask questions and used the prototype as conversational topic. Moreover, when people are engaged in an activity that connects them with others this will enhance social cohesion as well [32]. It was seen that this connection happened during this study as well when different bystanders threw something away together. The fact that the open-endedness of the prototype made people excited and laugh or smile is beneficial for increasing social interaction as well; it was found that people tend to feel more social when they are in a happy mood compared to an unhappy mood (33-34). What is more, the open-endedness of the prototype will also likely enhance the visitor’s well-being compared to a prototype that is over-regulated [35].

Strength & Limitations

The qualitative approach that was adopted in this study gave an in-depth understanding of the extent of social connection caused by a prototype without a clear aim. However, it was sometimes difficult to observe and read visitor's faces and to understand the motivation behind their interactions. Therefore, it is hard to tell what aspect of the design led to what interaction. Another limitation of this study was the timeframe and time consuming set-up. As a result the prototype was not observed for a week as proposed by one study, but was observed three days instead [10].

Implications for practice & research

Because only observations were done during this study, performing a follow-up study with semi-structured interviews would be interesting to gain a more in-depth understanding of social connection and to understand better how people interact with others while using these prototypes. It could for example be the case that the prototype becomes familiar to the visitors of the park over time and will therefore be dominantly used for its designed purpose. Consequently, it is suggested to further explore this project by conducting more observations with one/multiple and different 'prototypes without a clear aim while adhering to a more sufficient time span. In addition, this concept is widely applicable since it can also be tested in public spaces other than Urban Parks.

9 CONCLUSION

In this research, the prototype without a clear aim ''Double-take'' was used to study how a product without the presence of a clear aim changes social connection in urban parks. It explores how the interaction between Double-take and the people using it can influence new social conditions through a series of field observations. In general, Double-take made the visitors of the park happy and social. The results show that people who interacted with the prototype participated in weak verbal and non-verbal social interactions. It was also seen that the open-endedness of the prototype made people confused and encouraged people to explore different physical and non-physical possibilities of interactions with the prototype as well as with others. For this reason, researchers, designers, urban planners and architects should further explore products without a clear aim as a design consideration to strengthen social connection in public space.

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REFLECTION

Reflection Rutger Hooftman-M1.2

In this reflection, I will reflect on my past semester which consisted of the M1.2 research project for the client Six Fingers. I will reflect on the development of my professional skills as a designer and how I have integrated the expertise areas.

As a designer, I am mostly attracted to designing products that are related to public space and to design for the ‘’everyone’’. I am very drawn by social settings, and I strive to create interactive experiences and sensitivity in public contexts. Along these lines, I envision designing new symbiotic dimensions in public and non-public experiences and I believe this project greatly complements this vision.

I think my research skills have significantly improved. The course ‘’constructive design research’’ did introduce me to design research, but doing a research project on my own within the field of transformation practices is something else. I am used to the goal of designing something and making improvements to that design. However, this project has taught me to use design as a medium that contributes to a research community. This meant I also had to get familiar with the challenging theories, practices, and overall work(flow) in the field of transformative practices. For example, it was interesting to do research on a product with an open-ended character, to build this prototype and to see how it operates in the wild. This involves how people interpret the design and how it relates to a deeper meaning, such as the effect on the social connection in urban parks (U&S). To understand this deeper meaning I learned to connect my design to philosophy and psychology((U&S, C&A). By using a qualitative approach I learned to delve deeper into the data and gained a more comprehensive understanding of how to analyze and thematize data.

The project started as something extremely broad, namely *Future of cities*. The challenge was to converge this to something useful and to craft research that was original, timeless, relevant, and something that fits my vision. Yet, the design research needed to be feasible and generate knowledge. As a result, I have learned to use transforming practices as a methodological foundation to tackle the social challenge to bring people together in an open space. I learned how to envision new practices by daring to switch between different lenses and explorations. On that note, this project has learned me to deal with research processes, which involved learning to work carefully with the way I articulate my reasoning, my words and how I communicate these to others. Articulating my reasoning really challenged me in the sense that sometimes I needed to take a step back and re-consider my rationales or methods. For example, the narrative of the project started with ‘’discomfort’’ and slowly changed to ‘’confusion’’. Because of this work approach, I really improved my academic writing, which is a valuable development considering my dyslexia.

Compared to a design project I had to be extra critical about what I assumed and what I eventually argued for. I sometimes tend to work on my narrative based on my ‘‘Fingerspitzengefühl’, which is also one of my strengths. Although, this time I had to be careful about separating my ‘’romantic ideas’’ based on my opinion from the actual research insights. Therefore, during the first phase of my project I sent out about 35 surveys with integral questions to get a better impression of what part is relevant to build on within my research.

One of my goals was to apply a physical prototype in a shared space, which I did. I learned to direct my process through pilot-testing and rapid prototyping and to use these prototypes as a way to study humans as ‘’actors’’ and not as ‘’factors’’. This also meant that, to make my research legit, my final prototype had to be very close to the ‘’real-world’’ (T&R). Therefore, I focused on developing a prototype that fits the ordinary and is in line with the open character of public space. This required me to make quick iterations and design decisions without losing the scope of the research. On top of that, I needed to be careful in my designs, ethics (ERB, municipality approval) and execution, because I knew everyone could interact with and be influenced by it. For example, my final prototype had to be tough constructively speaking because the prototype would otherwise break and the research would fail. However, there were some setbacks I did not anticipate on such as fixing the electronics (M,D&C) and roll mechanism of the prototype that broke down during my first observation. In addition, I wanted to do a legit field study where people are unaware of being influenced by me as a designer, which I had never done before. I believe having applied and experienced this method can be very useful during my future projects. The observation process was something I had to get used to; the idea that many people are watching you while you are installing your prototype felt a bit overwhelming in the beginning. However, the study did learn me how to observe a broad social audience.

During these past few months, I have made some great steps as a designer, but especially as a researcher. All in all, I am glad that I was given the opportunity to further develop my expertise areas and to grow as a design researcher within a context that fits my vision.

A APPENDICES

A1. Data analysis -Generating initial codes

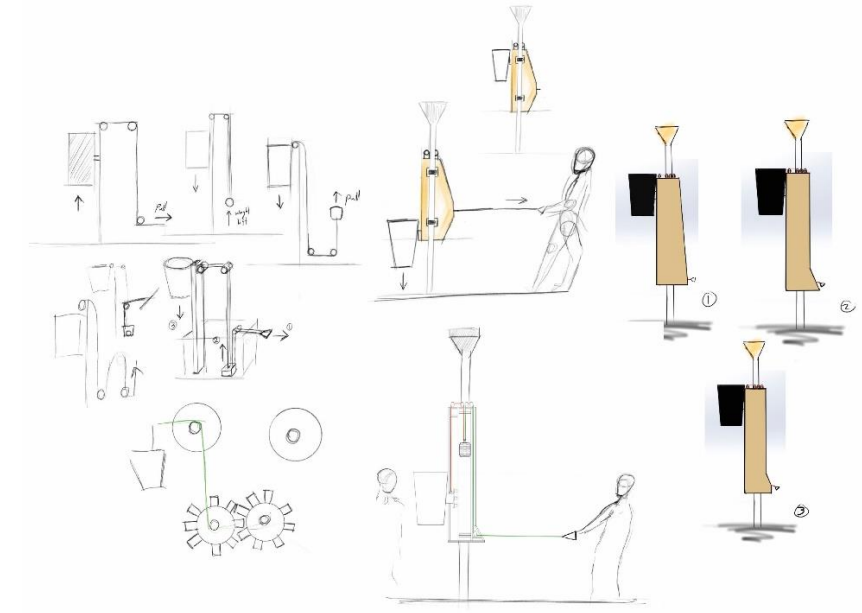
CODE DEFINITION	EXPLANATION
Conversation starter	Bystander(s) start to talk other bystander(s)/ or users because of prototype.
Represents something else	The prototype is seen or associated by people as something else other than a trash can.
Unclear functionality	The function of the prototype is unclear.
Concept makes people laugh	The concept behind the prototype makes people laugh.
Concept makes people enthusiastic	The concept behind the prototype makes people enthusiastic.
Physical approach others	Individual/group in the park approach other bystanders or vica versa.
Likes prototype aesthetics	The aesthetics of the prototype are appreciated.
Prototype as conversation topic	Group members have a conversation about the prototype.
Stare at prototype	People look at the prototype for a moment.
Stand still	People are standing completely still in front prototype, not moving around the prototype.
Kids interact with prototype	Kids pull the rope.
Makes people ask questions	People start to ask questions about the prototype.
unclear usability	People are discussion the usability of the prototype.
Pulled multiple times	The rope is pulled multiple times by one individual.
Group member(s) smile	People observing group-members interact with the prototype start to smile.
Bystander(s) smile	Bystanders observe people interact with the prototype start to smile.
People smile at prototype.	People seeing the prototype smile
Shout	People start to shout because of the interaction with the prototype.
Group member(s) laugh	People observing group members interact with the prototype start to laugh.
Bystander(s) laugh	People observing other * interact with the prototype start to laugh.
Making the user smile	People start to smile when or after they use(d) the prototype.

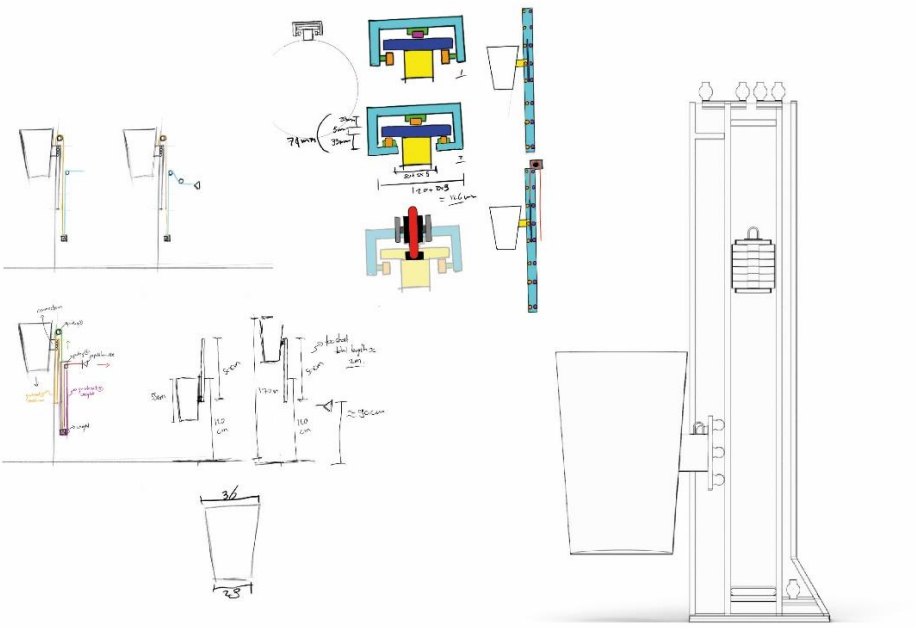
Making the user laugh	The user laughs when using the prototype.
Group member(s) observes use	The group member(s) observe the group member(s) pulling the rope.
Excited reaction	People become excited because of the prototype.
Waiting to pull	People are waiting to pull the rope.
Sharing	The rope is passed to a group-member.
Making pictures	People make pictures of the interaction with the prototype.
Bystander(s) observe use	Bystander(s) observe other people make use of the prototype.
Use without throwing	The prototype is used, without throwing something away.
Nodding to bystanders.	People are nodding to bystanders.
Smile at bystanders	People using prototype smile at bystanders.
Eye-contact	Bystanders have eye-contact with people that interact or have interacted with the prototype.
Prototype is not noticed	People do not see the prototype.
Walk around the prototype	People walk around prototype
Walk while observing	People walk passed the prototype, and are fixated on the prototype.
Walk while observing interaction	Bystander(s) walk passed and observing people interacting with prototype.
Individual pull	The rope is pulled by an individual visitor of the park.
Leaves park spot	People leave the place where they were settled in the park and walk to the prototype.
Individual use	An individual has thrown something away all by her/himself.
Re-visit the prototype	People have used the prototype, leave it for a while and come back to use it again.
Pointing at prototype	People are pointing at prototype.
Other trash can is used	People throw something away at another trash can instead.
Confused face	People look at the prototype confused.
Closely looking at prototype	People look at the prototype closely (about 30cm).
Excited prototype reaction	People seeing the prototype become excited.
Adolescents use prototype	Adolescents pull the rope.
Bystander recognises user	The user is recognised because he is interaction with the prototype.

Elderly use prototype	Elderly throw something away.
No hesitation pull	People pulling the rope immediately after they noticed the rope.
Bystander(s) asks for help	Bystander(s) ask other bystander(s) for help.
Throwing something away with bystander(s)	Different bystander(s) use the prototype to throw something away together.
Thanking bystander(s)	Bystander(s) thank other bystander(s) that helped them using the prototype.
Adult use prototype	Man and woman (age 18-60) pull the rope.
Few words conversation	Bystander(s) have a few sentence conversation with *other* bystanders.
Small conversation	Bystander(s) have a small conversation >1 <5 minutes with *other* bystanders
Stop and look a second time	People observe the prototype, look further, stop, and observe again
Smiling at prototype	People start to smile when looking at the prototype
Throwing something away with group member(s)	Group member(s) use the prototype to throw something away.
Trash misses the trash can	The trash thrown to the prototype misses the trash can.
Trash is tossed	Trash is thrown at the prototype from a distance.
Rope is used with foot	The rope is used with foot instead of hand.
Group members give instructions on how to use the prototype	Group members are explain how the prototype works with words and gestures.
Two people are pulling	Two people are pulling the rope at the same time .
Ask for trash	People ask for trash.
Mimicking throwing something away	People act like they throw something away.
People look in the trash can	
Standing under trash can	People stand under trash can.
User breaks prototype	User damaged prototype to a level it does not work anymore.
Bike while observing	People observe the prototype while they cycle past the prototype.
User makes prototype dirty	User makes the prototype dirty.
User cheers	User cheers while interacting with the prototype.

A2. Ideation and prototype development Double-take

Sketches: concept/technical





Parametric CAD model and digital render

Building process prototype development

A3. Ethical Review Form Education

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Ethical Review Form Education

(Version 17.07.2020)

This Ethical Review Form should be completed for every research study that involves human participants or personally identifiable data. The form should be submitted and approved by your supervisor before potential participants are approached to take part in the research study.

Part 1: General Study Information		
1	Student name and email	Rutger Hooftman; r.a.hooftman@student.tue.nl
2	Supervisor name and email	Daisy Yoo; d.yoo@tue.nl
3	Degree Program	Industrial Design
4	Bachelor/master	Master
5	Bachelor/master end project?	M1.2
6	Course name and code	DEP004 Transformative practices
7	Project title	Future cities
8	Research location	TU/e campus, Eindhoven, Noord-Brabant
9	Research period (start/end date)	31-03-2022 until 1-08-2022
10	[If Applicable] Proposal already approved by (external) Ethical Review Board: Add name, date of approval, and contact details of the ERB	N/A
11	Research question	*How does a mildly discomforting product change social connection in public space?*
12	Description of the research method	1. **Questionnaires:** A short survey (open-ended and closed questions) will be conducted to gain more insights about the social state of public space; how do people perceive and experience the contemporary public space? This explanatory study is parallel to the exploratory field research. 2. **Research-through-design field testing and observation:** Experiential low fidelity prototypes will be placed in a public space. The prototypes will be installations that afford a level of embodied interaction but does not interrupt or force the participant's action. The interaction with the installations will be something unconventional, which may be perceived as mildly discomforting (e.g., non-ergonomic dimension of furniture). The engagement with passers-by will be through simple observation. I will be present at the place of interaction from a distance

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		where passers-by can notice me. Thereby, it is worth mentioning the participants will not be informed that they are being observed. To keep focus, the observation time consists of 40-minute shifts. I will be making notes of the participants' comments and/or conversations. These notes will be coded (linked to themes such as interaction and conversation types) and analysed. Based on this analysis one of the prototypes will be chosen and further developed.
13	Description of the research population, in- and exclusion criteria	Adults in the Eindhoven region (mainly students). Specific inclusion criteria: (1) Healthy adult of 18 years or older (3) No mental or physical impairments which limit or endanger the participation of the participant in the studies or their understanding of the consent form and procedures
14	Number of participants	1. Questionnaire: 20-50 participants 2. Field observation: 3-30 participants (depends on interest)
15	Explain why the research is socially important.	*Public spaces are transforming from a social place to a place that is driven by functionality and overruled by technical devices that happen to be more attractive/interesting than their social surroundings. In brief, contemporary public spaces seem to lose their sense and initial purpose of social connection, shared experience, and engagement, which is in conflict with our inherent need to be social. This research aims to understand the social state of public space (the 'why') and how the social connection can be catalysed through an unusual/mild discomforting interaction.* (See full description on pages 8, 9)
N	Describe the way participants will be recruited	1) For the short questionnaire, participants will be recruited via an online link. 2) By-passers on TU/e campus.
17	Provide a brief statement of the risks you expect for the participants or others involved in the research and explain. Take into consideration any personal data you may gather and privacy issues.	1) This study will have minimal risks for the participants. The level of discomfort anticipated in the proposed research is not greater than those ordinarily encountered in daily life. 2) The participants are allowed to withdraw during the study whenever they want. Furthermore, the participants will be informed about the goal and the protocol before the study starts. In this way the

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		participant can make an informed decision about whether to participate in the study or not. 3) No identifiable personal data will be gathered. Only basic demographics will be collected such as (estimated) age range (18-30; 30-45;45-60;60+), and if they live in Eindhoven themselves or outside of Eindhoven. 4) Data will be handled following the GDPR rules. Online surveys will be conducted using secure remote collaboration tools supported by the TU/e (e.g. MS Forms). Data will be stored safely on a cloud storage platform that meets all requirements of Dutch and European privacy legislation. Specifically, all data of the project will be stored in the "ID_TP_squad_2122-S2" Teams site, in a private channel "2122-S2-Future Cities_" only accessible by the project members and my coaches (D.Yoo and C.C.M.Hummels). Data will be kept in this location beyond the project, and will then be accessible only by the examiners beyond the duration of the current project for research purpose. 5) Since the prototypes will be installed in public, they may be approached by people that do not fit the research population, such as kids. To minimalize this risk the installation will be under the constant supervision. 6) Covid-19 measures: I will make sure the guidelines set by the Dutch government and TU/e are followed during the research by me and the participants.

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Ethical Review Form

	Part 2: Checklist for Minimal Risk	Yes	No
1	Does the study have a medical scientific research question or claim (see definition below) *Medical/scientific research is research which is carried out with the aim of finding answers to a question in the field of illness and health (etiology, pathogenesis, signs/symptoms, diagnosis, prevention, outcome or treatment of illness), by systematically collecting and analysing data. The research is carried out with the intention of contributing to medical knowledge which can also be applied to populations outside of the direct research population.'*	☐	☒
		If yes or maybe: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	If no: Continue with question 2
2	Does the study involve human material (such as surgery waste material derived from non-commercial organizations such as hospitals)?	☐	☒
		If yes or maybe: This is only allowed if your supervisor has consulted with the medical coordinator. Continue with question 3	If no: Continue with question 3
3	Will the participants give their explicit consent – on a voluntary basis – either digitally or on paper? Or have they given consent in the past for the purpose of education or for re-use in line with the current research question?	☒	☐
		If yes: Continue with question 4	If no: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval
4	Will the study involve discussion or collection of personal data? (e.g. name, address, phone number, email address, IP address, BSN number, location data) or will the study collect and store videos, pictures, or other identifiable data of human subjects?	☐	☒
		If yes: The handling, storing and de-identification of the personal data should be discussed with your supervisor. Continue with question 5 if you met all requirements for handling personal data (see …)	If no: Continue with question 5

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Ethical Review Form

		Yes	No
5	Does the study involve participants who are particularly vulnerable or unable to give informed consent? (e.g. children, people with learning difficulties, patients, people receiving counselling, people living in care or nursing homes, people recruited through self-help groups)?	☐	☒
		If yes: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	If no: Continue with question 6
6	May the research procedure cause harm or discomfort to the participant in any way? (e.g. causing pain or more than mild discomfort, stress, or anxiety)	☐	☒
		If yes: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	If no: Continue with question 7
7	Will the participants receive any compensation for their participation? Such as a coupon or a chance to win a prize?	☐	☒
		If yes: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	If no: Continue with question 8 or 10, depending on the type of study (see red text below)
The following questions 8-9 are for *observational* research (e.g. (semi-)structured interviews; focus groups; (participatory) observations). If your research is *experimental*, then skip questions 8-9 and continue with question 10			
8	Will it be necessary for participants to take part in the study without their knowledge and consent at the time? (e.g. covert observation of people)?	☒	☐
		If yes: This is only allowed when observing behavior in public space. If so, continue with question 9. If you observe people in non-public space without their consent, your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	If no: Continue with question 9
9	Will participants be asked to discuss or report sexual experiences, religion, alcohol or drug use, or suicidal thoughts, or other topics that are highly personal or intimate?	☐	☒
		If yes: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	If no: Continue with part 3

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Ethical Review Form

The following questions 10-13 are for *experimental* research (e.g. measurements on yourself or another person; testing a prototype/device; influencing behavior through manipulation (e.g. light or temperature). If your research is *observational*, then skip questions 10-13 and continue with part 3			
		Yes	**No**
10	Is the study invasive (i.e. it affects the body such as puncturing the skin; taking blood or other body material (such as DNA) from the participant)?	☐	☒
		If yes: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	If no: Continue with question 11
11	Does the device have a medical purpose sucs as diagnosis, prevention, monitoring, prediction, prognosis, treatment or alleviation of disease or injury?	☐	☒
		If yes or maybe: Your supervisor should submit the study to the ERB. You cannot get automatic ethical approval	If no: Continue with question 12
12	Will the experiment involve the use of physical devices that are 'CE' certified for unintended use (meaning you will use existing CE certified devices for other things than they were originally intended for?	☐	☒
		If yes: This is only allowed if they are completely harmless. They should have a harmless voltage of <5V and hazardous waste (fumes/gas/substances) should not be released. You should discuss with your supervisor whether you need to have the device tested for safety	If no: Continue with question 13
13	Will the experiment involve the use of physical devices that are not 'CE' certified?	☐	☒
		If yes: This is only allowed if they are completely harmless. They should have a harmless voltage of <5V and hazardous waste (fumes/gas/substances) should not be released. You should discuss with your supervisor whether you need to have the device tested for safety	If no: Continue with part 3

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Ethical Review Form

Part 3: Enclosures and Signature		
1	Enclosures (tick if applicable): ☒ Informed consent form (link to template); ☒ The survey the participants need to complete, or a description of other measurements (such as interview questions or a description of the prototype): ☐ Text used to find participants (such as brochures, flyers, etc); ☐ Approval other research ethics committee;	
2	I hereby declare that I have completed this form truthfully Signature(s) of the student(s) Date	 31-03-2022

Discuss this form with your supervisor. If any of the boxes your ticked in Part 2 suggest that your supervisor should submit your study to the ERB for ethical approval, try to change your research design in such a way that your supervisor can approve it instead. If this is not possible, ask your supervisor to submit the proposal to the ERB. It will take two to five weeks before you receive a decision from the ERB.

Part 4: Review by supervisor			
		Yes	No
1	Does the data storage adhere to all requirements of responsible data management (link toevoegen)?	☒	☐
		If yes: Continue with question 2	If no: Discuss with your student the necessary steps to adhere to the requirements
2	Does the research proposal adhere to all requirements for automatic approval?	☒	☐

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Ethical Review Form

		If yes: Please skip the questions 3-6 and sign the form	If no: Discuss with your student if any alterations can be made in order to adhere to the requirements for automatic approval. If you decide that the study cannot adhere to the requirements, then you as a supervisor need to submit the proposal to the ERB. Please answer the following additional questions (3-6)
Additional questions for ERB approval			
3	Elaborate on the topics from part 2 that do not allow for automatic approval. Describe how you safeguard any potential risk for the research participant for each topic.		
4	Describe and justify the number of participants you need for this research, taking into account the risks and benefits		
5	Explain if your data are completely anonymous, or whether they will be de-identified (pseudonymized or anonymized) and if so, explain how		
6	Who will have access to the data?		

Part 5: Signature by supervisor		
	I hereby declare that I have completed this form truthfully Signature of the supervisor Date 14/04/2022	

Subject information for participation in scientific research - Future public spaces

Dear Sir/Madam,

The following object/installation is a part of a scientific study; research-through-design field testing and observation.

Purpose of the study: This research aims to understand the social state of public space and how a mildly discomforting product does change the social connection in public space.

What participation involves:

During the study, the following will happen:

- You will be able to interact with a prototype. The prototype affords a level of embodied interaction but does not interrupt or force you to do anything.
- While this happens your engagement with the product will be observed and collected in written notes. This means nothing will be recorded (like conversations).

Note: Please try to avoid damaging or removing the prototype.

The data collected is about:

- basic demographics will be collected such as (estimated) age
- The time spent using the prototype
- The user's engagement and interaction with the prototype
- The user's type of connection (e.g., conversations, laughing) with others caused by the prototype (conversations will not be collected).
- Composition photos of the interaction (faces will be blurred)

If you do not want to participate or you want to stop participating in the study

It is up to you to decide whether or not to participate in the study. Participation is voluntary.
If you do participate in the study, you can always change your mind and decide to stop, at any time during the study. You do not have to explain why you refrain from participating, by raising your hand your data will not be collected.

End of the study: Your participation in the study stops when you stop using the prototype or when the social connection with the others (caused by the prototype) is stopped.

Usage and storage of your data: All research conducted at the Eindhoven University of Technology adheres to The Netherlands Code of Conduct for Research Integrity and the Code of Scientific Conduct. In this study no personal data will be collected. No information that can be used to personally identify you will be shared with others.

Contact details: If you want more information about this study, the study design, or the results, or if you have any complaints about this study you can contact Rutger Hooftman (contact email: r.a.hooftman@student.tue.nl).

Information form for participants

This document gives you information about the study "Future public spaces". Before the questionnaire begins, it is important that you learn about the procedure followed in this study and that you give your informed consent for voluntary participation. Please read this document carefully.

Why is this research socially important

People are in need of social connections. Public spaces, on the other hand, are moving from a social place to a functional place that is overruled by technical devices such as mobile phones. As a consequence, public spaces are losing their initial purpose of socially connecting people.

Aim and benefit of the study

The aim of this short survey is to gain more insights into the social state of public space; how do people perceive and experience the social aspect of contemporary public space? Do people still seek social connection or do they accept public spaces as the way they are?

The study is performed by me, Rutger Hooftman. I am a master's student Industrial Design at the TU/e, and I am working on a design research project related to the social future of public space.

Procedure

You are asked to fill in a short questionnaire.

Risks

The study does not involve any risks, detrimental side effects, or cause discomfort.

Duration

Filling in the entire questionnaire takes around 5 to 10 minutes.

Voluntary

Your participation is completely voluntary. You can refuse to participate without giving any reasons and you can stop your participation at any time during the study. None of this will have any negative consequences for you whatsoever.

Confidentiality and use, storage, and sharing of data.

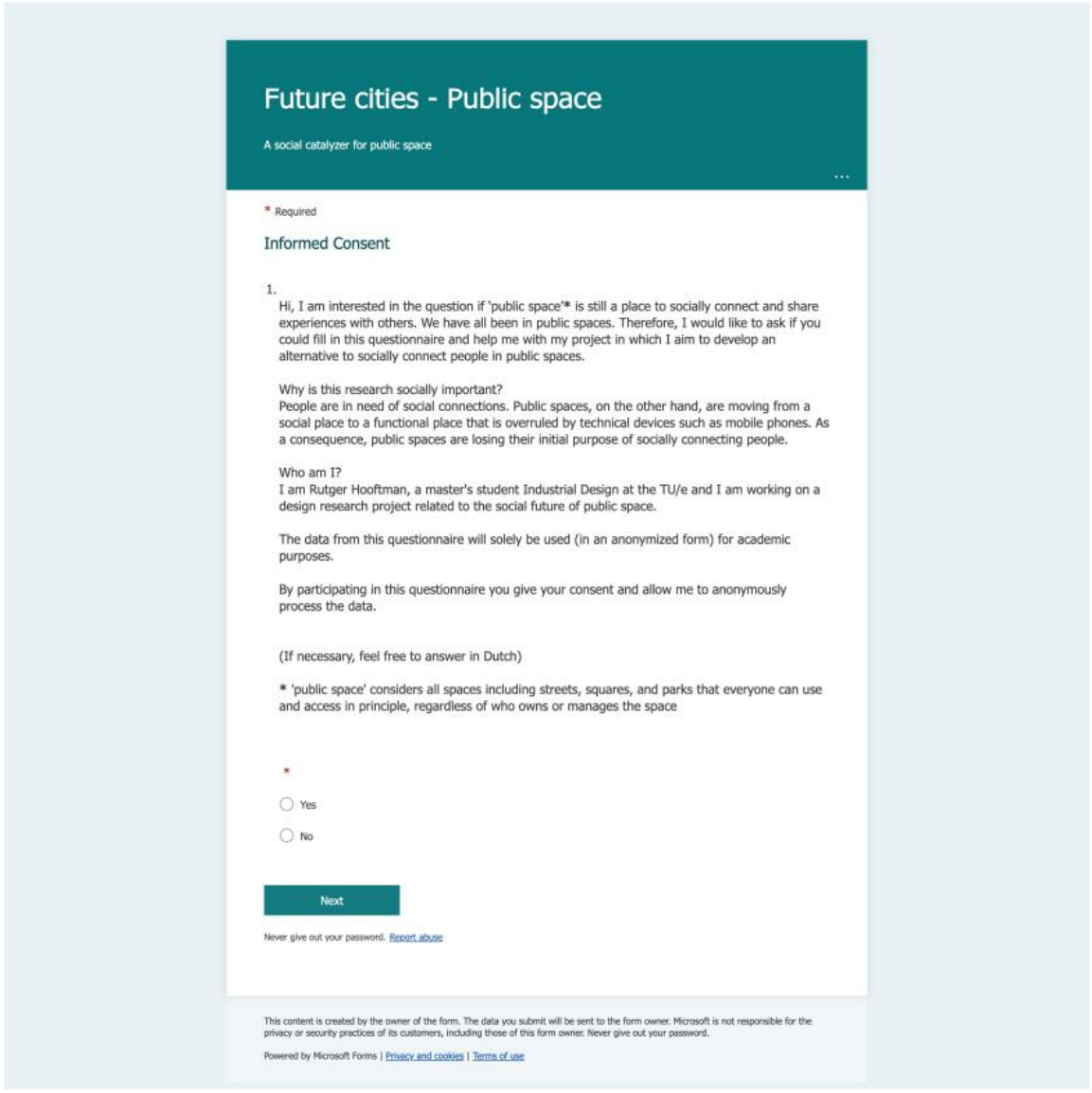
All research conducted at the Eindhoven University of Technology adheres to The Netherlands Code of Conduct for Research Integrity and the Code of Scientific Conduct. In this study no personal data will be collected. No information that can be used to personally identify you will be shared with others.

Further information

If you want more information about this study, the study design, or the results, or if you have any complaints about this study you can contact Rutger Hooftman (contact email: r.a.hooftman@tue.nl). You can report irregularities related to scientific integrity to confidential advisors of the TU/e.

Informed consent form

By answering 'yes' you provide consent to participate in this study.



Future cities - Public space

A social catalyzer for public space

...

* Required

Informed Consent

1.

Hi, I am interested in the question if 'public space'* is still a place to socially connect and share experiences with others. We have all been in public spaces. Therefore, I would like to ask if you could fill in this questionnaire and help me with my project in which I aim to develop an alternative to socially connect people in public spaces.

Why is this research socially important?
People are in need of social connections. Public spaces, on the other hand, are moving from a social place to a functional place that is overruled by technical devices such as mobile phones. As a consequence, public spaces are losing their initial purpose of socially connecting people.

Who am I?
I am Rutger Hooftman, a master's student Industrial Design at the TU/e and I am working on a design research project related to the social future of public space.

The data from this questionnaire will solely be used (in an anonymized form) for academic purposes.

By participating in this questionnaire you give your consent and allow me to anonymously process the data.

(If necessary, feel free to answer in Dutch)

* 'public space' considers all spaces including streets, squares, and parks that everyone can use and access in principle, regardless of who owns or manages the space

*

Yes

No

Next

Never give out your password. Report abuse

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