



FOR THE TIME BEING

Report
DAM313 Design for Social Innovation
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Course activities

This chapter describes the various activities during this course. Many of these activities in the end contributed to the final prototype.

The first week started with an assignment in which we formed small groups and got to collect objects that would recommend a new machine/system.

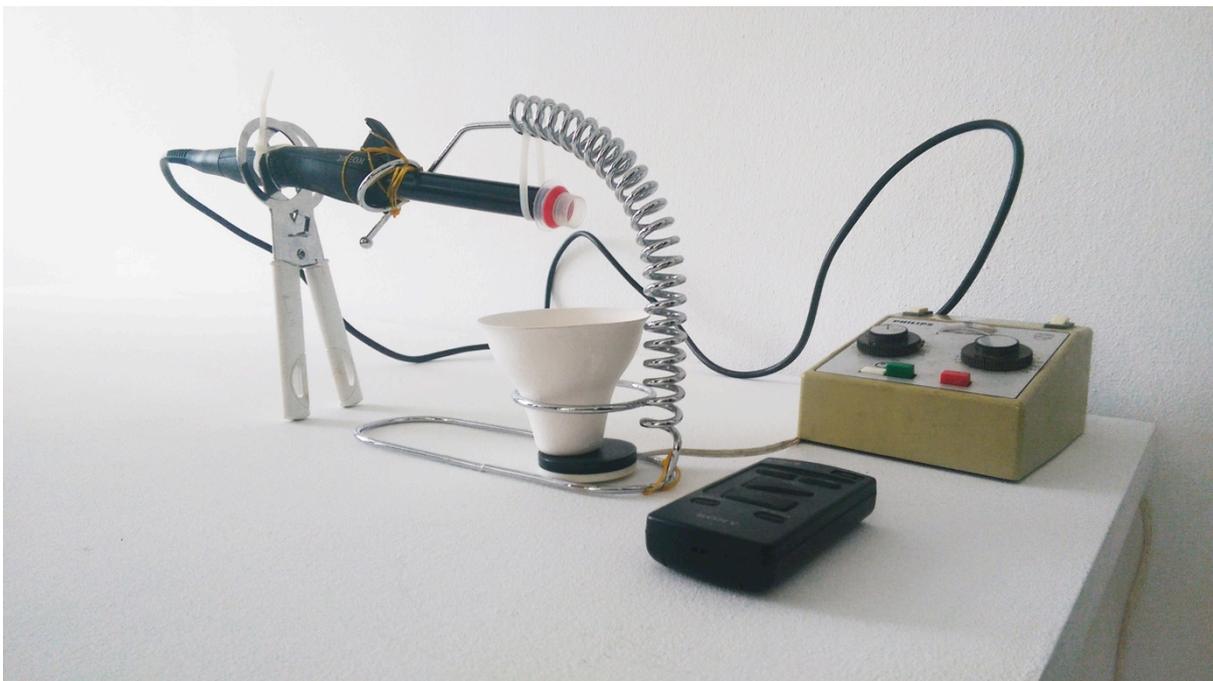
Tea maker

Being one of the first we grabbed a remote control with very little buttons to make interacting with it more sensible.

Two of us being just out of a coffee and tea ritual elective project, we quickly focused on tea making. Because the different objects/artefacts were quite intriguing we just added stuff without really thinking its function more deeply. Everything became automated and depending on 'magical integrated technology. Just as most these devices are nowadays. Push a button and a whole process is executed - mostly invisible - by a machine. The fact that we followed this path as well is funny because we as designers don't really like this type of interaction.

In the end we complicated things by adding an interesting looking device with many buttons, just because it looked cool. This got full attention of the user interacting with it instead of the remote control.

Also, however the device looked nice and interesting and had some mechanical qualities, the user didn't get to - hands on - use it.



Tea maker machine

Repetitive movement bubble

I was in my own bubble/space rocking back and forth facing a corner of the wall and focusing on a loose screw. This really allowed me to be closed off from the rest of the room and the things that happened there.

It was kind of a shock though when I was suddenly touched.

It remained a soft touch though, on both my arms, following my movement. By very small, hardly

noticeable, corrections my movement was changed from rocking back and forth to sideways. We really became one in movement. The touching hands entered my bubble. It didn't feel comfortable or natural though to really break the movement. Therefore we became kind of stuck in the bubble which in the end got quite funny and made us laugh.



Me in my loop/bubble (at the right) whilst Fabienne (In front) tries to reach me

Emotional confusion

As a preparation on the second week I did a long brainstorm session with Manon Barends on designing a First Person experience on dementia. Through existing research we found out that however demented people forget things, they do forget the emotions that belong to these things. *While everything else fades away, the emotional memory will stay.* The emotional life (level of feelings & intuition) increases whilst the ability to frame, control and interpret emotions decreases.

So demented people lose the framework to which their emotions are coupled. They might feel sad for instance, but not recall why. They do remember this sad emotion though. That is why it is especially sad when demented people are continuously confused and scared. We therefore focused on the emotional needs and emotional confusion for our first person experience design experiment.

The experience we imagine is as follows:

1. I sense something.
2. I feel an emotion.
3. I try to interpret the emotion I feel.
4. I am not able to relate it.
5. I am confused why I feel that emotion.

Because music is one of the things that strongly relates to human emotions we used this as a base. We found music that strongly resembles an emotion.

These were the emotions that we included in our playlist

Loving, Cheerful, Energetic, Passion, Flurried, Wonderingly/ fascinated, Deeply Attentive, Watchful, Calm / content / serene, Anticipating / expectantly, Happy

Feared, Confused, Panic, Apathetic, Powerless, Hostile, Disgust, Angry, Broken, Agitated, Longing, Nostalgic, Insecure, Detached, Bored, Alienated, Sad, Restless

The user hears this music through a pair of headphones to create a personal sound bubble.

The user gets a couple of objects presented, which he or she may explore. To take away the distraction of colour all of these objects are white. Only the physical properties then play a role in determining the meaning of an object.

When one object is picked up a random piece of emotional music is played through the headphones.

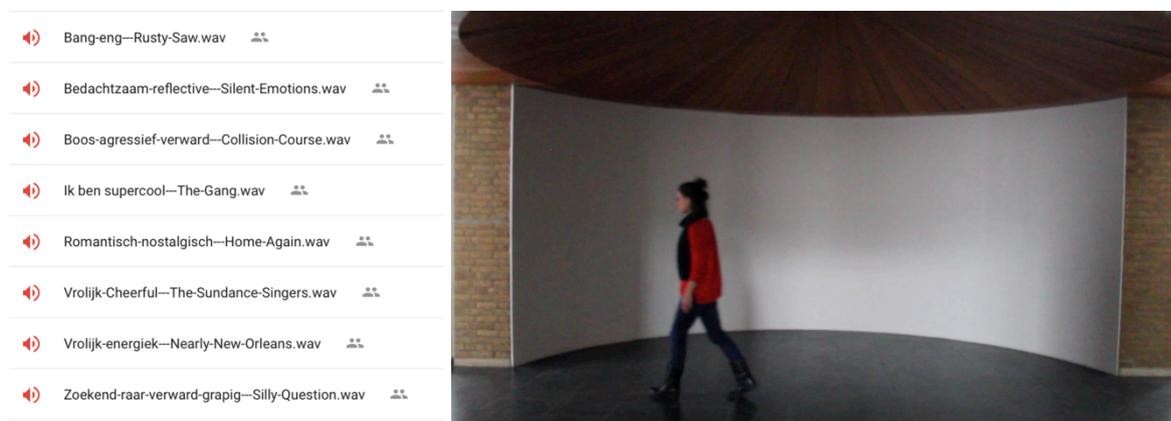
Our design will make the user feel an emotion (by hearing music that represent emotions) when the user senses (picks up) an object from the table in front of him or her. Sometimes the relationship between the object and the emotion is logical – the emotion and object fit together or the user makes sense of it by thinking rationally. But more than often the emotion conveyed by the music does not fit with the object was just picked up. The user then has a first person experience of missing the framework that belongs/is associated to it. * Confusion *

A number of people participated in the first test of this experience. Their reactions showed that we met our design intention. It ranged from; 'trying to make sense', 'Confusing', 'Frustrating' and recognition.



The emotional confusion experience setup

As preparation for the third week we developed this concept into a short movie that shortly displays the impact of 'emotional music' on how images are perceived. To do so we used a smaller amount of emotions than earlier, and soundtrack/moviestyle music. This movie was also one of the explorations of the designspace, the Design Huis.



'Emotional movie music' list and still from video

Sensuous explorations

The third week was very explorative. Both the designspace of the Design Huis, as on the sensuous possibilities of the human body where explored.

The building was explored in new ways and trough movement and inexplicit interaction with others we explored our body and senses.

The senses where further explored in a low-fi physical prototype.



Sensuous exploration of body, interaction and design space



A low fi prototype on the sense of touch experience

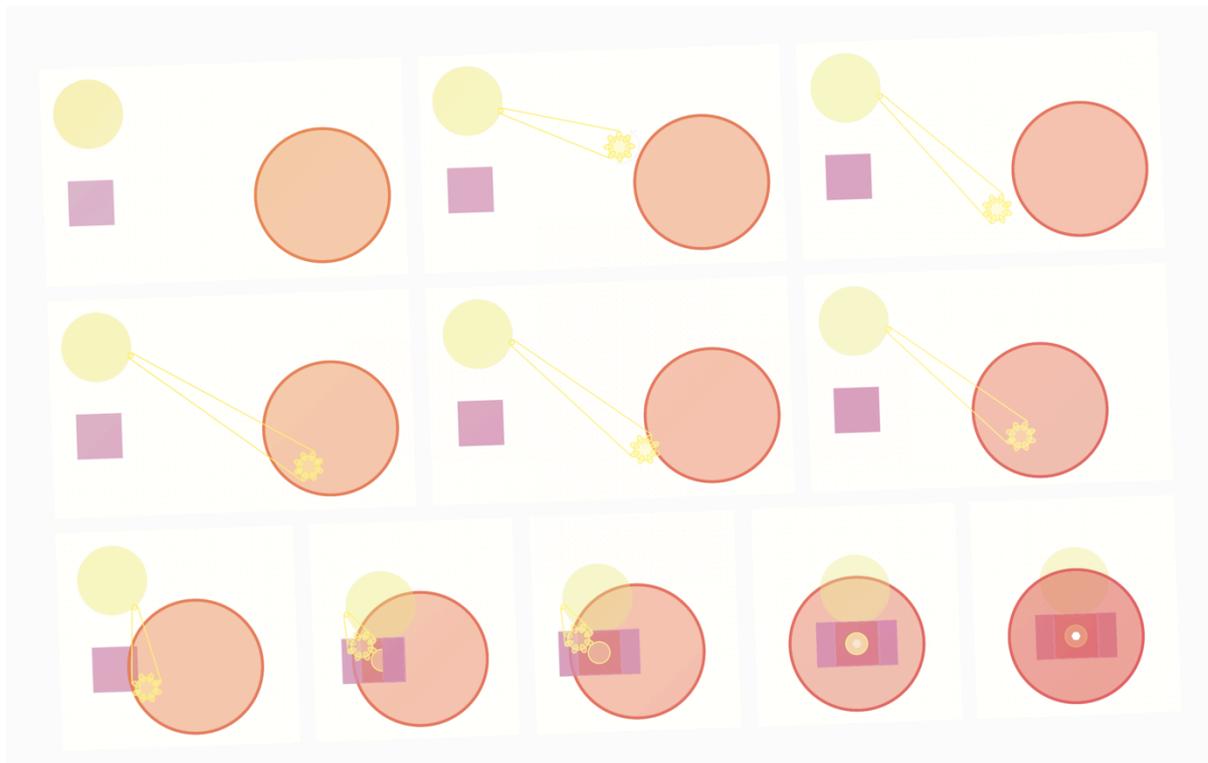
Mystery Box

Taking into account the things learned so far, we were asked to design for loops that are common with dementia. To do so we tried to guide the patient to something they need. This is done by grabbing their attention using light that then guides them to this object. The object itself is located in a "mystery box" that also contains a source of light. This light spot illuminates around the object of interest. The light is used to interfere with the patient's loop in a positive and interesting way.

A box, we hoped, evokes surprise and curiosity which are potentially positive emotions. It could also evoke flashback to presents and celebrations. This concept was developed with Mantas Palaima and Lezhi Su.



Making of the Mystery Box



A graphical / storyboard representation of the Mystery Box

Day and Night

At some point everyone chose an interest to design the final exhibition prototype for. I was interested in the dichotomies between day and night activities and how they are confused in later stage dementia. As a new formed group we started with determining which space we wanted to use for our prototype in the exhibition. We quickly decided to use the big room right next to the main staircase. This beautiful big space allowed us to replicate all kinds of atmospheres, like day and night, inside and outside the house.

GGzE visit

The next week we were allowed to visit some demented people at GGzE. Of course we fully embraced this opportunity however it was on short notice. Our enthusiasm faded when we learned that we had to provide them a workshop. Also we did not now what to expect of the demented people themselves. We were completely unprepared but of course had our interest – day and night confusion – and a number of questions. We therefore had to improvise, which turned out to work great in the end. Using two probes, writing and drawing day and night activities, we tried to learn about their routine and possible confusions. These demented people were in early stage of dementia though. Therefore it turned out to work best to just ask them things and discuss with them.

This learned us that most demented people don't get confused about day and night itself but slowly shift their day and night rhythm through forgetting activities. Because of this the focus of our group shifted from day and night confusion to daily routine and from later stage dementia to the whole process of dementia.

I also filmed during the visit. A rough cut can be found here: <https://youtu.be/CIJ1NXG4Xqw>



Visit and probing at GGzE

My contribution to the Final prototype

The final prototype itself will be described in the next chapters. Therefore I will shortly list my activities that contributed to the realization of the prototype.

- Designing and lasercutting the big circle at RDM Makerspace Rotterdam
- Constructing the geared motor system with lego
- Testing and supplying several AC connected possibilities in driving the Lego motors
- Tried making a high quality 24 hour timelapse, in the end searched for a suitable third party 24 hour timelapse.
- Program, design, make and set up the slider box
- Lasercut and paint black cardboard pieces with some group members
- Set up the final construction with the group
- Film and make photos during the exhibition
- Convey the story of our installation to the visitors together with some group members.
- Edit the footage into a short impression video of our prototype

Final concept description and rationale

Our final concept; 'For the time being', integrates a clock in your house that does not tell time, but shows you valuable, beloved or important objects that reminds you to do the things you need or want to do at that time.

The clock itself is just a platform that people build upon to invest in their own future. People that are in an early stage of dementia can record and define their own daily routine for later stages of dementia. They do this by putting objects that strongly resemble certain activities on that moment of day on the clock in the cabinet.

The cabinet clearly highlights the current object (the current time) but in a fading way also shows the objects/activities that just passed and the objects/activities to come. This allows people to relate to what they did and to what they are about to do.

Rationale

During the process and especially during the visit to the GGZe we realized that day and night disorder is not just about the confusion of time. We came to learn from people with 1st stage dementia themselves that the reason for confusion during night was in routine during the day. Forgetting to do activities during the day results in boredom and triggers people with dementia to go to sleep during the day. At night they are awake and get confused while trying to perform activities that they should have done during day. This was the first and main finding where we based our concept on. Routine is important to stimulate the lifestyle of the elderly and helps relatives to deal with the situation as it is. People develop themselves during their life and discover things that they love to do. Also for elderly, these things are very important in their lives. They keep on performing hobbies from the past or they develop new activities that they like. When a person gets dementia it is likely that he/she will forget to perform these activities over time. It is very important that they will be remembered of the things they love to do to keep them busy, keep them enjoyed and stimulate contact with relatives or friends. To remember the activities they love to do we decided to choose physical objects as triggers for activities. One of the reasons for choosing physical objects was based on the reactions that we got from people with first stage dementia at the GGZe. They mentioned that they value specific objects in their environment and that these objects stand for the activity they could perform with it. For example they used a very specific teacup for drinking tea and the moment of drinking tea is precious and always follows the same ritual.

Another very important aspect of the concept is "building your own routine for the future". Our vision was that we didn't want to focus on one specific stage of dementia and that we wanted to allow for self-empowerment. We wanted to enable people with dementia to invest in their future. In this way these people can also have some grip on what is happening to them. It gives them the feeling that they are in control of their own life, and that they can confront their dementia within their own home environment.



① diagnosed with dementia



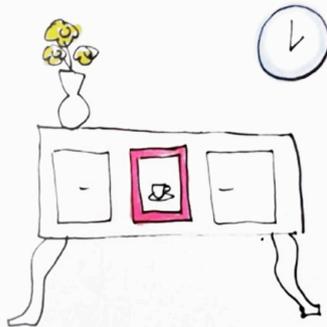
② What is coming?
Scared of the Future
No grip on situation



③ Start to prepare
lets have a close look at what activities are in your daily routine



④ collect objects that remind you of the activities



⑤ put the objects at the time you like to do these activities in the cabinet



⑥ In a later stage the cabinet shows you your life. You have invested in your own future.

Final concept storyboard

Final prototype

In the final concept we think of a cabinet with a subtle window which can show the activity of that moment with showing an object that reminds the person with dementia. The cabinet will fit in the interior and will of course not be of the size we showed at the exhibition. The cabinet will have a kind of assembly line where objects will arise in the window one by one. The line will rotate on the beat of the clock. The dementia person can easily take out objects or change them. Also the caregiver can have an influence on what is inside the cabinet. But is it important that the person with dementia has a moment of memory when seeing and touching the objects.

The exhibition set-up showed an abstraction of what we had in mind for a sensuous home environment. In the exhibition setting, we wanted to let the visitors experience both the first person's perspective but also take a step back, reflect and think about how they would fill in this routine. Besides this, it was also a kind of statement design which evokes discussions during the exhibition day. Mainly because the big room around the prototype was impressive. Just like in the workshops, we wanted to use the space we were in to get inspired. The final prototype which was presented at the exhibition, contained out of a round, turning table where different objects were placed on, the object passed by one by one in a frame. This frame is what we call 'the real time' so the activity shown in the frame is what would be the best suggestion to do at this time, this moment. To give a feeling of how a person with dementia could feel about time, a changeable timeline was presented as a window. Window was filled with a time lapse projection where people could change the speed of time of. In this way we asked them to match the time with the object shown in the frame. Soon they will notice that the objects are very personal and everyone will take another moment in time to match the object. And this is actually what makes the concept strong.

I made a short impression video of the final prototype. The video can be found here:

<https://youtu.be/W9w5LeQocSU>

Differences from the final concept

Our concept was about the routine or a cycle of the patient's day. Patient should build his personal routine clock in the early stages of dementia and use it as a guideline later on. Our installation consisted of:

- A giant (160mm) turning table;
- 12 panels to put the associative things;
- 12 everyday objects from user's environment;
- Painting frame to isolate single object;
- A spotlight highlighting the current object;
- A black screen isolating the objects from the opposite side;
- An interactive time-lapse projection on the window to visualize the current time of the day;
- A slider which controls the speed of time-lapse to match the speed of the changing objects;

We were limited not in many ways, except probably the turning surface wasn't working reliable enough. High ceiling made installation of any construction hanging from the top very complicated. Also, in the first planning we had a scheme that people would enter our exhibition from the spiral staircase, but due to higher than usual steps to enter the room we decided to change this setting.

Nevertheless, in the real environment we imagine something like a vintage cabinet, where the patient placing his/hers personal objects in the specific places and later on one (or just a few) objects were shown to guide the patient through the day.

In our initial concept we had an idea about a conveyor belt (similar with those, using in the airports for moving luggage). Our plan was to attach like a small boxes with the personal objects inside. In the facade of this construction we planned to have a facing side of an old cabinet. The objects would move around slowly and appear in the cabinet. Due to the short time, lack of tested technology, expenses and experts among us for our exhibition we decided to go for an easier solution - our turning circle.

The interaction should be simplified as much as possible, as well as scale should be smaller to fit the ergonomics. We probably won't use any complex controllers, I would suggest having a real clock-face in the cabinet to match the time with the activity more easily.

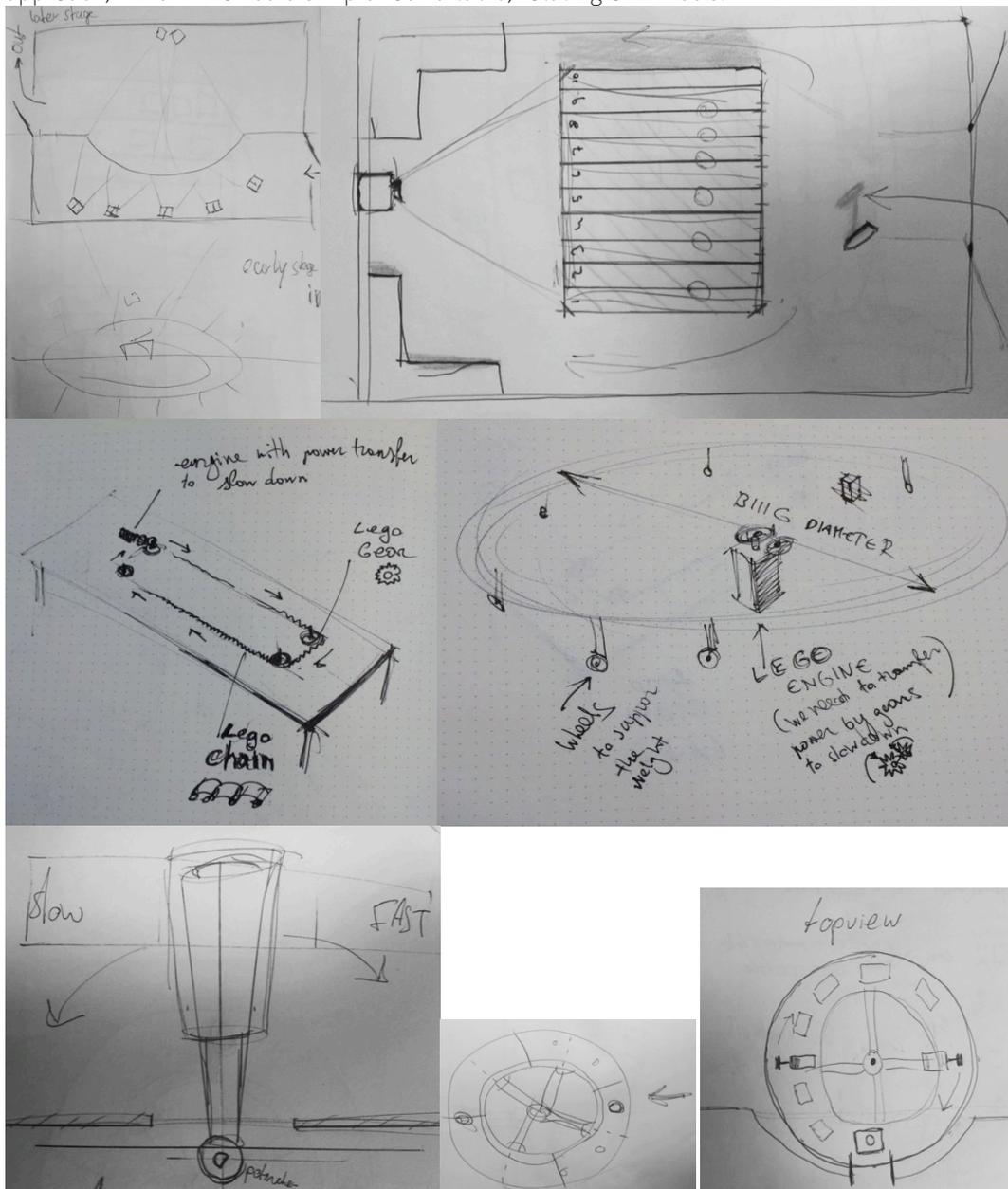
The projection on the window and the slider, which controls its speed were used just to imitate the current part of the day, also to make our installation more interactive, but most of all - helping to get into the first person perspective.

The setup in DesignHuis allowed us to have such a big space for our installation, provided with some technology as well. The surprise effect took place when people entering our exhibition space in the end.

Prototyping process

1. Sketching the setup

In the first iteration of the prototyping we made a large amount of sketches in order to illustrate the mechanisms behind our concept. There were several iterations that involved different approaches. With time effectiveness and buildability in mind we eventually chose the most easy approach, which involved a simple round table, rotating on wheels.



2. **Building a scaled down version**

In order to test the effectiveness of our approach we then build a scaled down model of the prototype using LEGO. This allowed us to have quick and powerful prototyping iterations working towards the full prototype. It also helped tackle some small initial problems.



3. **Building full prototype**

Format

We then started building the full prototype. Because of the size, the table had to be laser cutted in Rotterdam due to the needed size. The table itself also included multiple panels on which the objects which were presented. This caused the table to be heavier than anticipated which called for multiple iterations in the mechanics.

Mechanics

Because of the use of LEGO we were able to quickly react and adjust on any issues that arose. However, the weight of the table had a toll on the LEGO motors and controller, which meant that even after multiple iterations and adjustments the table stopped turning halfway through the exhibition.

Looks

There were multiple attempts at creating a professional look. We decided to use fabric, but the ultimate implementation turned out to be not what we expected. We also used different iterations of paint and painting in order to get the desired effect. During this process we decided to also use a spotlight and shadow effects to enhance the peripheral experience of the object being presented.

First person's perspective

In order to work from the right angle and to enhance our empathic skills while working the prototype we also reflected back on using the loops methodology. This not only became apparent in the essence of the concept itself, but also in the way we presented our concept. We wanted to slowly enable the visitor to shift between a first person's perspective and a visitor's perspective, by allowing them to both play with the concept itself, but also with an abstraction of the passage of time.

Reflection on final prototype

Visitors of the exhibition were almost all quite pragmatic and interested in how a real life version of the prototype would look and function. “Good idea, curious to a practical implementation” Next to the recurring non-functioning of the installation (through overheated engines), that might have been the reason that many of the visitors did not really get the timelapse and timeslider. Those were of course only aimed at the exhibition (first person) experience. Maybe the big space and separation of the part enhanced this confusion.

A number of visitors mentioned to see much potential in the prototype, also for other applications. “I see a lot of potential in For the Time Being (development possibilities on a variety of applications).” *Bart Brandenburg – Medicinfo* “Providing good grip on daily rhythm, focused on wellbeing” *Sandra Jager & A. Oosting*

Also the visitors really urged us to actually put this to the test with actual demented people. “Try out and discuss in Alzheimer cafés.” *De Boer* “If you are going to test it at carehomes, I am very curious to the results” *Sandra Jager & A. Oosting*

Though the functioning of the final prototype obviously needed some refinement, people were obviously very pleased with the concept we tried to convey.

Reflection on entire course

I chose this elective because I was interested in getting acquainted with embodied perception and social design theories and frameworks to add those to my ideation toolkit.

Also the description of this course mentioned aesthetic refinement, which is one of my main interests throughout my master. Since I always want to refine my prototyping skills and knowledge the hands on approach provides a nice learning opportunity.

At the start of the course I wasn't too enthusiastic about the topic – Transformative homes for senescent dementia - that is used as a carrier. It's not that I don't care about people, for some reason I am just not that interested in healthcare design.

After exploring the field using both embodied design, the wild machine experiment and design around emotions, I started to like things anyway though.

The visit at GGzE was way out of my comfort zone, especially since we were unprepared, but it turned out to be a very positive experience in which I regained my confidence in improvising. Also emphatically this visit had a huge impact on me. Not having any close experience with dementia leaves one knowing things about it but not fully comprehending the consequences of it. To see things that seem small in my own daily life deteriorating, actually made the most impact. For instance one man (in what is supposed to be an early stage of dementia) had difficulties with just going to sit on a chair. Also many of the demented people started to have trouble with writing.

Lego has always been my favorite construction and building toy. The weird thing is that I always kept thinking of it as a toy. Using it as means of prototyping was amazing. It allows you to very quickly make mechanical prototypes that would otherwise need a lot of specific parts. In the same process I also saw the limits of the Lego prototyping. Using it with the heavy final prototype turned out to be a bit too far fetched. Though I sometimes hated the uncertainty on the actual end goal of the elective and the fact that we swapped groups several times, I think it brought some good things as well. Being in different groups allows you to truly start over again several times while all having knowledge from past groups. I for instance integrated parts from my first experiment on emotional confusion as emotional value on activities and personal objects. But also from the mystery box where the guiding to, and highlighting an object of interest comes from.

This course gained me knowledge on my competencies of Aesthetics and Creativity and User and Society. The final prototype is fully aimed at how aesthetics evoke the experience we envisioned. Also the emotional experience is something that I gained more recognition for. The experiments showed me that it is very powerful. Embodied design is something that I can add to my ideation toolkit. Especially in exploring the design space, I really felt that this sparked creativity.