

DESIGN FOR THE HERE AND NOW

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THE DOORBELL

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INTRODUCTION

We believe that the aim of this elective, “Design for the here and now”, is to explore design opportunities based on the observation, experimentation, contextual inquiry and the understanding of how the world actually appears to us. We explored and reflected on how beauty can be experienced through an immediate interaction with a doorbell.

We also wanted the person outside to be able to know if the person's home or not. In this way the person that rings the bell doesn't spend time waiting for someone that will never come. In our design process we adjusted prototypes and iterated a few times to finally get to our final concept.

Our mission

With our doorbell, we wanted to make a very direct interaction with the person outside towards the person inside. We wanted to give the outside user the opportunity to express his or her identity towards the person inside, so that the person inside immediately knows who is outside.



EXPLORATION

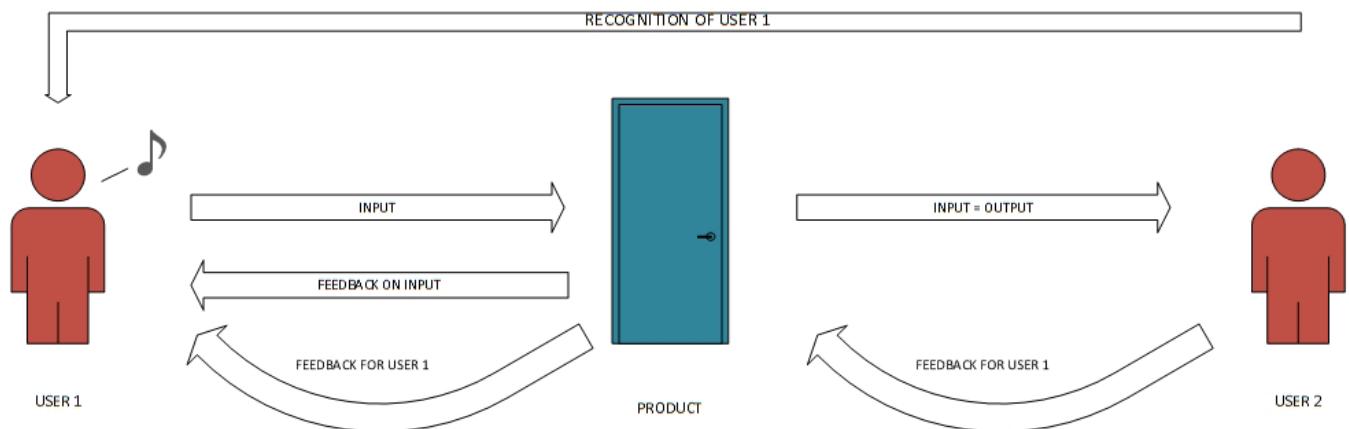
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We started to review/observe the way people in the same space make contact with each other. We found that the most common ways were, making sound or gestures towards the other person. If both persons had eye contact, as respond to the produced sound, people experienced a successful interaction.

When people stand in front of a door, people produce sound by ringing the doorbell to connect with the inside, until the door will be opened or until it takes too long.

We did not want the people outside to unnecessarily wait and therefore we added a feedback system from the inside to the outside. In order to create a more valuable interaction, the people inside could become to know who is in front of the door(this complete interaction is illustrated in the diagram below).

We learned that making prototypes could be very useful to clarify our concept to others, but mainly to ourselves. With just some pictures we cannot let people experience the interaction. By making prototypes, more feedback can be obtained and therefore we could improve our progress.



FIRST PROTOTYPE

What we did

We wanted to inform the person inside about which particular person stands in front of the door as fast and as clear as possible. In order to accomplish this, we chose to use human voice as input of the person outside since it is unique. Moreover, emotions can be expressed and heard through the produced sounds via voice. So we wanted people to produce sound to a door and, we thought, we could encourage people by presenting them a human ear, since sound is received by our ears.

We laser cut an ear of wood to speak in. We added multiple LED's which could give feedback to the person outside. When someone spoke to the ear, lights on the ear would light up synchronically to your voice. If there was movement in the house, lights around the ear would visualize a loading timer, to give an indication of the person inside approaching the door.

Results

We realised that 'the ear' (first prototype) was a representation which might influence people their interaction with it. An ear is a sign and a sign gives people a fixed direction and narrows down their freedom. A sign is a representation about what people have to do. We never wanted to take the freedom away, but that's what we did with our first prototype unintentionally. Through this first prototype we got our biggest growth in awareness. We really learned how we had to avoid such an influencing factor of our design since we were aiming to create a beautiful interaction. Furthermore, we realised that the behaviour of the lights, which we used, were not related to the colors at all. Therefore this was not valuable and especially not clear. We wanted our next prototype to be more engaging, because at this point you could only stand in front of the door and speak to it or grab it and then speak to it to make your voice sound louder.



FIRST PROTOTYPE

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What we changed

To improve the intended interaction we wanted to gain insight about how people interact with different shapes of objects. Objects which did not require any processing behaviour during interaction and therefore would engage people to use their senses. For a second prototype we set up an user test to learn which shapes enable the best experience for our design purposes. We wanted to find a shape which really engages people to produce sounds towards it. Since we thought that a hole, for example a pit, could trigger people to talk to it, we made six different objects with a hole in it. We made these objects varying between shape and material.

During the test we assembled eight participants and analyzed whether the selected different shapes were engaging enough to make some kind of sound. Afterwards we, together with the participants, reviewed

which shape could possibly motivate them to produce sound even more. The objective for each participant was to make contact with the inside.

From this perspective the outcome became very interesting and useful. We experienced that the majority of participants was preferring the 'cup' shape rather than the other ones. The reason for that was, because people referred to the communication tool with two cups and tensed wire between, from their past. We think that for the majority of people this activity is stored in memory. This connection with their childhood was something that appeared to us to be a rich aspect of the design. Besides speaking towards it, it was very interesting that half of the people also listened for a reaction. A greater part of the participants were acting differently according to their intuition to the other objects. They, for instance, felt what could be inside the object or rotated the object.



FIRST PROTOTYPE

From this test we learned that shape did matter in how people approach it and how people use their senses towards it. From now on we changed the ear shape to a cup shape and continued developing this prototype. We associated the outcome of the performed test as a next step to a more beautiful interaction.



SECOND PROTOTYPE

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What we did

We integrated the shape of a cup in this next prototype. We operated with 'Ableton' and afterwards with 'FL studio', music programs, to create sound effects which would give feedback to both the user inside and outside. We connected earphones with a microphone to the bottom of the cup. In order to give feedback to the person outside we decided to use echo's as there is a space behind the door where there would be objects and persons to reflect on. When there was nobody at home the echo would sound clearer to the person than when there was somebody at home, because the space is less 'filled'. Unfortunately, we could not let others experience the difference in echo yet.

Results

We learned that the story behind the echo was not really strong as it was not reflecting on a chosen

object/person, but was based on the whole space. We decided to change this, so the echo would reflect on the person inside. In this case the echo would reflect slower when the person is far away from the door and will reflect faster when the person is close to the door. When nobody is home there would be no echo effect.

What we changed

The feedback we got was to take the qualities out of the new form including the wire. That is why we did a second user test with different sort of cups.

The aim of the user test was to discover cup properties which would encourage people to interact with the product, like our intentions, earlier in their interaction. We designed cups that had a similar shape as the cup we used before, because we discovered that the cup as an object was a good way to trigger people to



SECOND PROTOTYPE

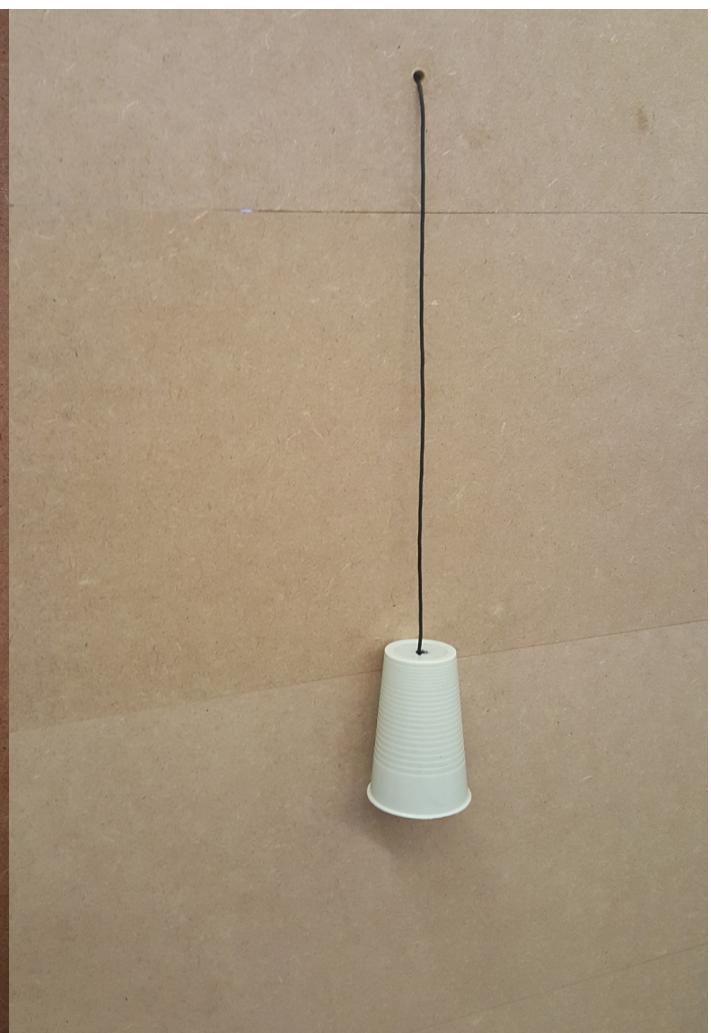
talk. We made different cups based on textures and we tested them with eight participants.

We categorized the cups in three groups and every participant was asked to pick the one cup which they would prefer to hold, over the others in the same category. At the end those three preferred cups formed a new category where they again had to choose their preference. The one they chose, would be their most preferred option. We verified this by asking them if our interpretation was indeed correct.

Afterwards we learned that this was not the right thing to do. This kind of user test could be valuable to do but not in this elective. The way people experience the touch of the cup can influence the interaction. However people already spoke into the cup, which we had before this user test. So testing different sort of cups was not necessary, eventually. By changing the cup we laid the focus on details that were yet not that important for the interaction we wanted to create. That is why we returned to the plastic cup we had before this second user test. We only changed the cup slightly to

a stronger variant so you couldn't pinch it anymore which only improved the feel of our product.

We realised that we needed to better analyze the interactions of users. For example, people were pulling the cup as there was a wire attached to it. That's why we attached an elastic wire to the wire of the earphones. This created a resistance to make the wire less inviting to pull as hard as possible.



FINAL CONCEPT

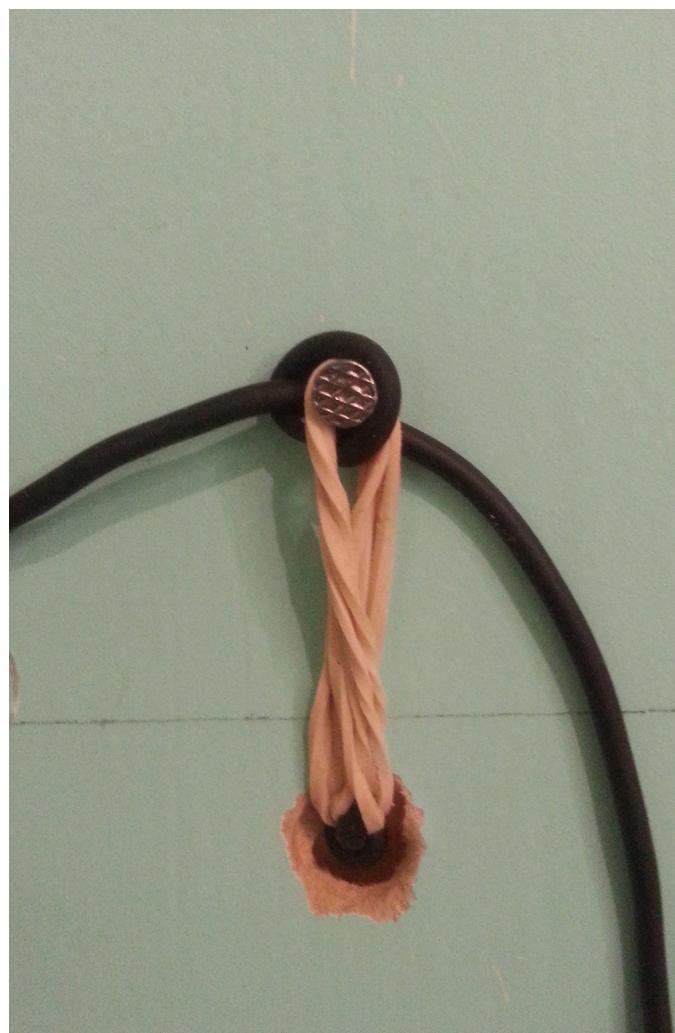
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We finalized our concept by completing the entire interaction. Now, the person inside can easily recognize the person outside and his/her mood via voice, which gives a personal touch to the doorbell. Through the feedback system the person outside would quickly get insight of the inside person his/her presence. The way it works: when you speak and you hear your voice once, without an echo, then nobody is home. The reason why the voice will always come out of the cup once is to give the feedback that you actually made some recognized sound which is translated towards the inside.

We wanted our users to be engaged in the interaction and that is why we changed our concept a bit. We want the user outside to really search for the user inside. Every time you make sound, the echo will search for the person inside and bounces back to the outside. Through the length of the echo, the position of the

person inside can be known related to the person outside. If the echo is long, the person is far away and if the echo is shorter, the person is closer to the door. In this way the feedback differs every time you speak to search for the person on the inside. This will make the feedback dynamic and keeps the person on the outside engaged in the experience, while they are waiting outside.

We also implemented another interaction possibility. If you tighten the wire attached to the cup, you will increase the volume of your voice at the inside as well as through the feedback system. This can be used to increase the volume if the person outside is not heard. We chose to add this variable of volume because people who really want to come in are often stressed or excited which results in excessive behaviour which might lead to pulling the cup harder than normal.



DISCUSSION

In this course not always the right decisions were made to improve our experience. For example the second user test was unnecessary, because it did not improve the interaction of our concept as people were already speaking in it. This does not mean that it is not about the details. Details are yet important factors when designing for a beautiful interaction. However the details that we added were more or less disturbing and did not add value to our intended interaction.

Concisely, a very important aspect of designing for beautiful interaction, we experienced, would be that every detail needs to lead to the intended interaction otherwise it does possibly lead to confusions.



JACCO BLEYEN



I am a designer that wants to bring people back together. The reason for that is that nowadays there are a lot of technical devices and I feel that people get more isolated because of that. I want to bring people back together through the products I design and the relation between each other.

This elective focuses on interaction, I wanted to explore interaction more because I am a designer where form follows function and this elective really focuses on the interaction which is most about the form of the product and what you can do with it.

I wanted to discover more about interaction more specifically the way people engage themselves with physical products. I didn't expect that this assignment was so much about making and discussing the prototypes. When I have an idea in my head, I can't physically engage with it which limits me in exploring possibilities by the fullest and discover new types of elements that can contribute to a beautiful form of interaction. Because of this experience I believe prototyping become more important to me as a designer and I am going to do it more often.

Also I really liked the discussions because other people can give feedback on the prototypes we design. The others are not in our design process and I could learn a lot from the others because of their different points of view they have while looked at our design. I believe I also participated well during the discussions we had during the lectures and gave others also valuable feedback to work with. I often forgot that it is not about functionality but it is just the way I am as a designer and because of that I sometimes comment that some parts are not functional. But that is not the case in this elective, but it conflicts with my way of

thinking. That is why I wanted a good balance between form and function in our prototypes.

I like to look at other designs and learn and reflect on that, it doesn't matter if it is from a book or the internet or in a classroom. If I am able to reflect good on that I believe I train myself to be a better designer because it means that I understand design in general better and better and it also helps me to take the right decisions for myself as a designer. That is why I think discussing designs and also reflect on my own design as well as the designs from others is very important for every designer. The things I learned from the feedback of our prototypes are described in the report. But the most important thing I got from it is that details are very important.

During this elective I wanted to drain more knowledge about rich interactions to experiment with and to think about. The first two lectures did just that and it opened my eyes in a very meaningful way. I aim for rich interaction in my designs but before this elective I felt like I was just doing something until it felt right. Now I feel that I really understand in much better than I did before because of the knowledge I developed through the information that was giving during the first two lectures and the discussions. This gives me more freedom and opportunities to explore the relation between the object and the person in my future products.

I really felt home in this elective because of the subject and the way of working. I was struggling if I wanted to do the "Design For The Here And The Now ll" or not but I decided not to do that because of my own personal development. I have to set priorities to reach other goals.

OLIVIER VAN DUUREN



Before this eight weeks of elective I only made a few prototypes to present an idea. I noticed that when most of these were not interactive. If they were interactive, they missed iterative prototyping. In order to give my projects a valuable experience, I had to learn how products could be developed in detail via prototyping. Therefore I subscribed to this course. In this course we would work with an existing concept, which would save a lot of research time. I especially liked that a lot, because I did not do that earlier. My expectation so far: learn how meaningful prototyping could be.

During the course we first got a few interesting theoretical lectures, which I find very interesting. I learned the beauty of designing through engaging users in the right way. How products differed in experience related to ten very interesting designing rules. Furthermore, I learned the elements of a good design which I should take into account, like feedforward. Then our group started with the iterations of a beautiful doorbell interaction. Doorbell especially was very interesting for me, due to the fact that I want to connect people through my design.

The feedback on our midterm prototype had the biggest impact on my way of thinking. This feedback, was about the feedforward our design had. We represented, labeled, our design as an ear. In this way users had a requirement to process the representation and act according to that. That would have had a great impact on the beauty of the experience and therefore we had to get rid of that 'label' as quick as possible. So we did. Since we got rid of such a representative design, we really enriched the experience at the end. Of course a

lot of other elements had to be added to improve it, but this was definitely the most interesting one. My second point of grown awareness was after the demonstration of our final prototype. During the demonstration, we presented it in the wrong way and that resulted a lack of experience among the users. We thought we solved our troubles with how to present our scenario's in a good way. Unfortunately, we eventually yet did it incorrectly. I realized afterwards that we could have done it different. We had to skip the technology and act the echo with our voices ourselves. In this way we could respond as system to the user and then the user could absolutely experience our intentions with the design. This felt as a big disappointment, because I realized it too late. However, I believe that this realization can become very useful in my future designs.

As conclusion I can state that my goals definitely had been achieved during this course. I think that especially my growth in awareness of experience design grew a lot due to all my realizations. Fortunately I chose this elective, since I truly developed my way of thinking.

CHIEL VAN DER VLIST



I also learned some practical skills while trying to connect the sensors to Ableton. Although I could not manage to connect it, I learned some new things of coding and connecting Arduino to other software programs.

I really liked the way of learning by designing in this course. The weekly iterations let me see that reflecting on the things you made and involving other people in it helps to keep the progress going. The critical eye and experience of someone who is not involved in your project can help to see your project from another point of view. I really would like to implement this more in my other projects.

An example of this is can be found in the beginning of the course when we came in with an ear. We thought that it would let people invite to speak to it. During the feedback session we learned that the ear is more of push towards the interaction while you want to be it irresistible to talk to the ear. This was an eye-opener for me. For a beautiful experience you want people to have freedom but with little details you can steer this freedom to a certain interaction.

That details matter became even more clear when our wire of the cup was pulled and broke. There was no feedback of the wire that let the people experience that they could not pulled it harder. This lack of feedback as cause of a little detail made me more aware of all the details around us. It impressed me and helps me to change my attitude towards making and doing things, it triggers me to work better on the details instead of finishing my work quickly.

JACCO BLEYEN

I liked the group I worked with during this elective. The reason for that is first of all because Olivier and Chiel are nice people to work with and secondly because of the vision we shared during this elective. We all wanted to get the same out of our product and wanted to make a product that has a rich interaction and is functional at the same time. Because the elective is mostly about interaction and not functionality we challenged ourselves to find the right balance so that the functionality is there but still with a beautiful and direct way of interacting.

I made the two videos and did most of the practical work and I can say that I took the lead within the group. I respect my other team members, everyone has to be agreed before we went further in the process, because we made our decisions together.

I am a hard worker and I believe the others also did their best but were unlucky sometimes in the execution or with their timetable so that at the end most things come out of my corner. I don't blame them because things can go wrong, for example Chiel wanted to make the technical part but after a while we discussed it and I appeared to be too difficult for us. Olivier helped me with user testing. They both showed that they care and participated well during meetings and we had great discussions to make progress every week and prepared weekly presentations together and also the report.

At the end I am happy with the performance of my group and their overall contribution to the process.

Jacco became a very active worker and made the majority of the prototypes, Chiel and I had to do all the other preparations to get it at the presentations every week. Where Chiel spend his time in making the technology work, I spend time in testing with users and spend time to prepare a good presentation. With the three of us we spend most of the time to discuss and think about how we had to use the feedback. I really enjoyed the teamwork due to these very interesting discussions, which I not yet had so far that much and that good. I believe that due to the fact that we agreed with each other about our tasks within our weekly assignments, we can say that our teamwork was valuable.

CHIEL VAN DER VLST

The group worked well together, but sometimes we had a different way of interpretation of the feedback we got. This lead to some heated discussions. But we already came to a solution together and all the ideas were created together.

Where Jacco did most of the practical work with some help of Olivier and me, Olivier worked on most of the multimedia and I tried a long time to connect sensors to Ableton. Because I followed an extra elective this quartile, I found it difficult to balance the time over all the courses which may have resulted in putting a bit less time in this course than the others.

OLIVIER VAN DUUREN

During this course I worked with Chiel and Jacco. Together, we fortunately shared a similar mission within the course. That worked out really to be very efficient. Although we had some difficult agreements about how to continue and different interpretations about the feedback sometimes. However we surely made it to a valuable final prototype together. Since

