BEACON

Worn Identities

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Theme:
Next Nature

Project:
Worn Identities DPL39

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Industrial Design,
B3.3 (premaster)

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Introduction

This project was part of the premaster program I followed to bridge the gap between HBO-level and academic level. Maybe even a bigger gap is the difference in the way of learning.
During this semester I did the Worn Identities Project in the Next Nature theme. This report will explain my activities, results and process regarding the project.

Brief

This project is about visualizing crowd flow in public areas. Giving the people using the area back their own behavior in a visual way.

Vision

I believe that being a designer comes with responsibilities. My work needs to add value to society or the user. Only then I can be satisfied. I want to make people enjoy the little everyday moments in life. Not only distract them from problems they are having, but also solving real problems. For example, enable old people to move more. Maybe even connect people in the neighborhood, making them less lonely. Making a product or service that contributes to solving this problem would help a lot of people living a better life.

Research

During this project different areas were explored. Starting of with a pressure cooker to get to know the theme and project. Some questions that raised at the start were: What is identity? What has it got to do with the things you wear? Further on in the project inspiration came from autonomous systems. How people are involved in a unorganized system.

A colony of ants is a remarkable achievement from nature. The image on the left displays a dug out ant colony of leaf cutter ants. Researchers poured 10000 kg of concrete down the entrance of the colony, waited for a few weeks and dug the whole thing up. The structure goes eight meters underground. The ants build rooms where they grow their own fungal culture to feed the colony. The rooms have exactly the right temperature and humidity for the fungus, because the architecture of the structure is build, so it allows the tunnel system to ventilate. How is it possible that a colony can build such a sophisticated structure without a leader? How do they know where to go.

Crowd flow

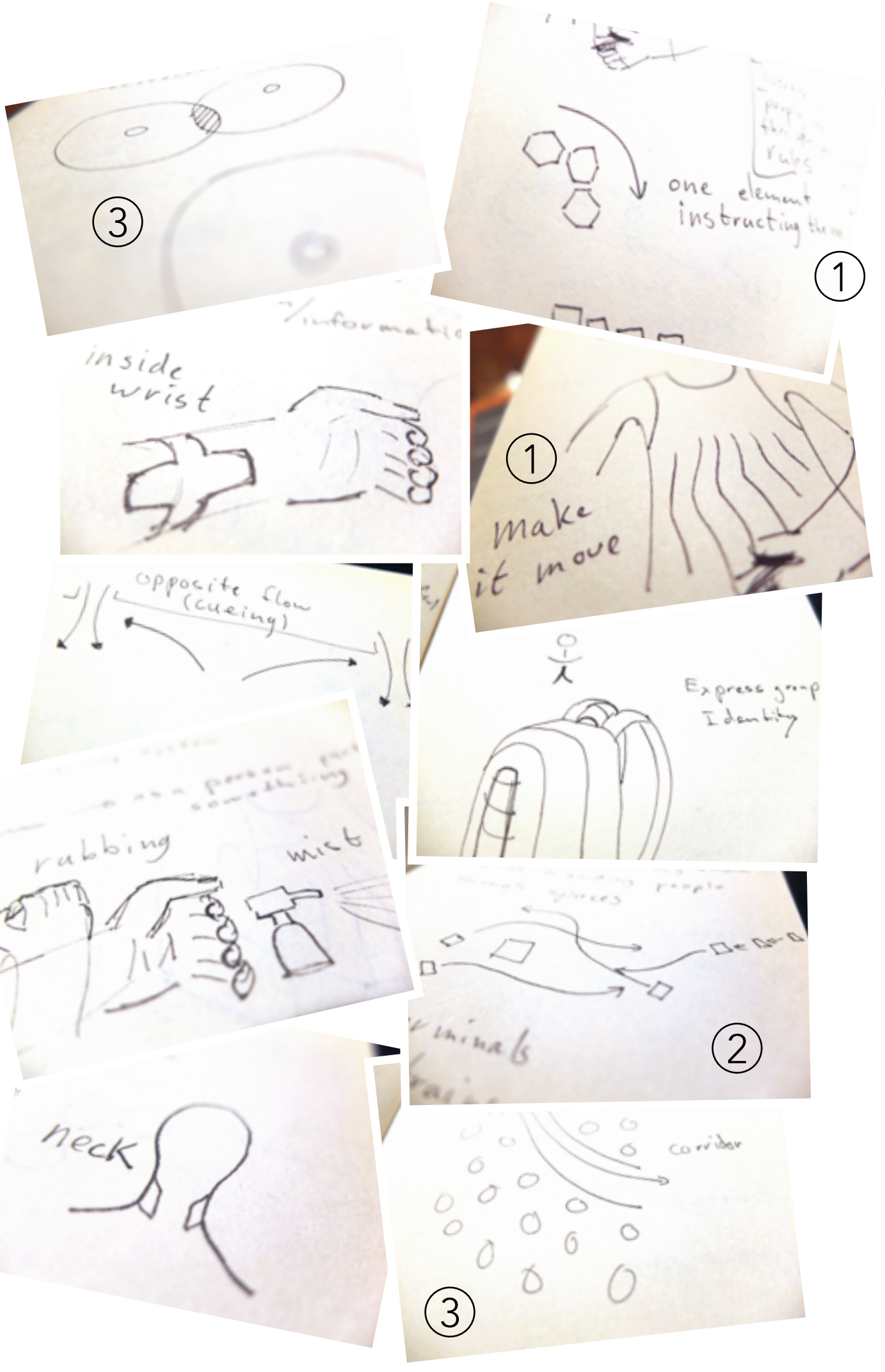
People are just like ants in a way. The growth of our cities is also a process beyond control of an individual that folds out over a longer period of time. We do it together. You could say that a city is one big organism that behaves and grows according to all the combined little contributions from the individual. It is an autonomous organism. Just like a flock of birds or a crowd of people. Lots of people walking through a transportation hub and almost no collisions. Again there is no authority controlling the projected paths of these people. They just know how they have to move within the environment.

There are a few simple rules they keep. People tend to chose the shortest route to their destination. If they have to deviate from this route then they will pick the shortest route from that point on. When people move through a bottleneck in a crowded place, they will organize themselves in a diagonal grid. When people from opposite directions move through the same space they will form lanes. This natural behavior makes crowd flow more efficient, but is for a large part unconscious. Beholding this sight from a distance makes you look different at crowds. A crowd is one big living organism.

On Scene

I have studied the public in the train station in Eindhoven. Shooting film on the scene proved useful. When looking back the footage, I really started to see patterns in the way people move. It is fun to see people flowing around a baby buggy in the middle of the hallway. Something as small as a pillar or buggy has got an enormous effect on the people around. Most people spot the obstacle soon enough to anticipate, but when the space gets busier people have more trouble to see what happens a few meters in front of them. A wave effect arises.

The first people are reacting on the obstacle, avoiding a collision. The people behind are reacting on the first row of people, by stepping aside. This wave is to continue throughout the public for several meters from the original obstacle.


3
one element instructing
1
inside wrist
1
make it move
opposite flow (cueing)
Express group Identity
rubbing
mist
2
neck
corridor
3

Ideas

Inspired by the autonomous systems I went on to brainstorming. I liked the idea of a modular fabric (1). A fabric that consists of smaller parts which transfer a certain movement to the neighboring part, so that a rippling effect would be generated. With these effects you can convey messages about the wearers identity. I was specifically interested in a tool for people who have trouble expressing their identity.

An other direction is about suitcases (2). Every traveler has got a suitcase with him. Often it shows something about the owner. For instance there is the light traveler with a small backpack or suitcase and you have the do not leave a thing at home traveler with big shiny suitcases. Most suitcases are not that smart. They are heavy and the wheels only work on the smooth floor of an airport. A suitcase could be more than the carrier of your baggage. What if a suitcase could drive itself? It could navigate you through the terminals. Just walk after your suitcase and you will never miss your flight again.

More closely to the final direction I brainstormed about groups of people (3). What happens when a group of individuals wait or walk in a public space. Do they interact with each other? Is there a group feeling? What happens if you encourage people to form groups? An idea is to use games to encourage people to form groups. When people share an interest they might benefit from grouping together.

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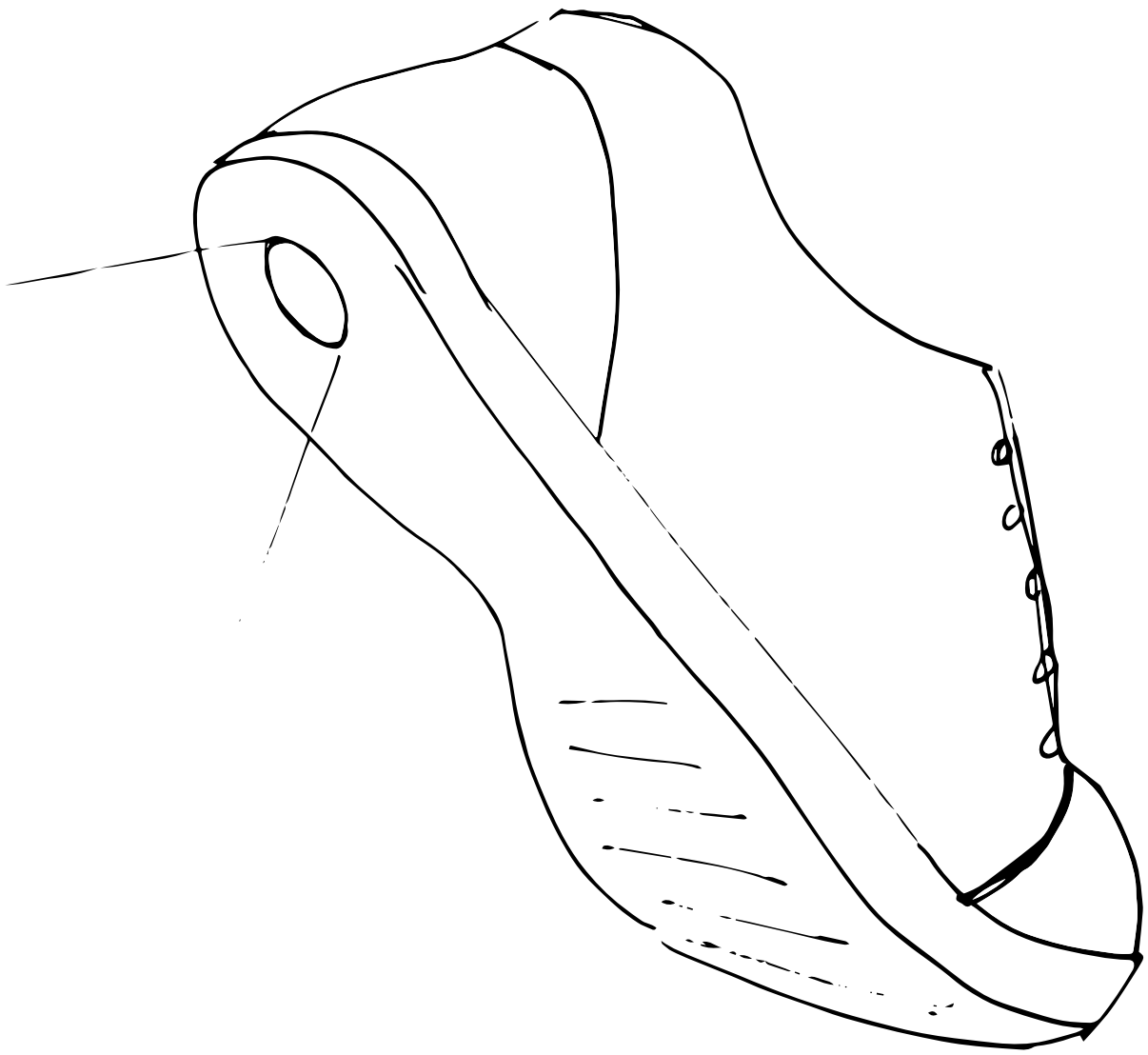
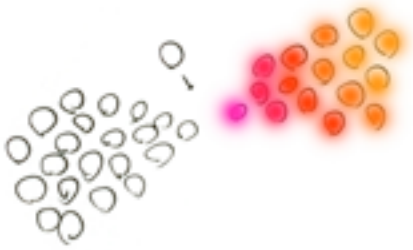


Concepts

After brainstorming I decided to go further with the idea of people in public, because this topic made me very enthusiastic about the project. During the midterm demo days I presented a couple of early stage concepts. On the next pages is explained how they evolved to the final concept.

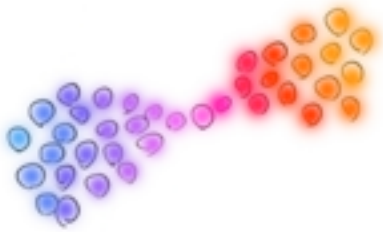
Midterm

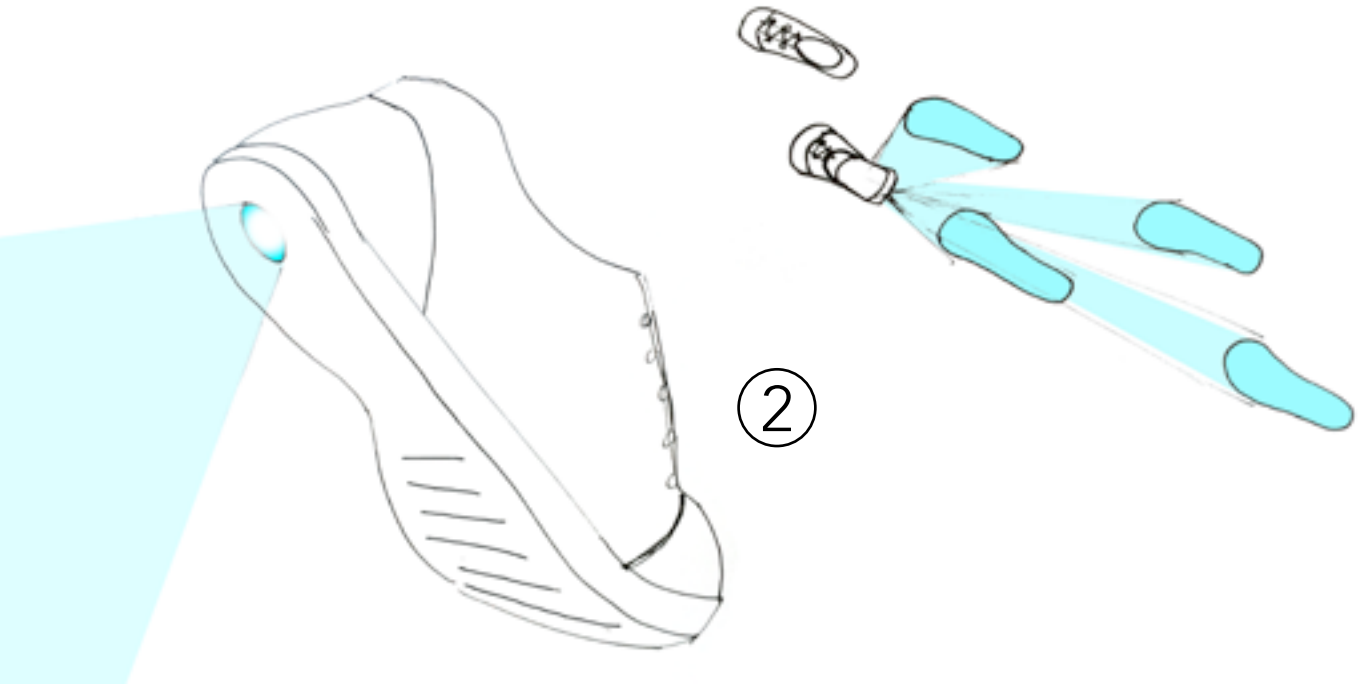
Waiting for a train can be an unpleasant experience. Encouraging people to form groups using a game setting makes waiting bearable. A concrete solution is the wave game (1). When a group gets disconnected the coloured wave stops where the group ends. People who fill up the gap make the wave continue.



1

Crowds of people walking through a public space could be carried out more efficiently (2). People with the same interest, for instance catching a train, could join forces to aid their common interest. Shoes that project a trail behind you so that the people behind you can follow. Assign every destination with a colour and people only have to follow the trail projected before them.



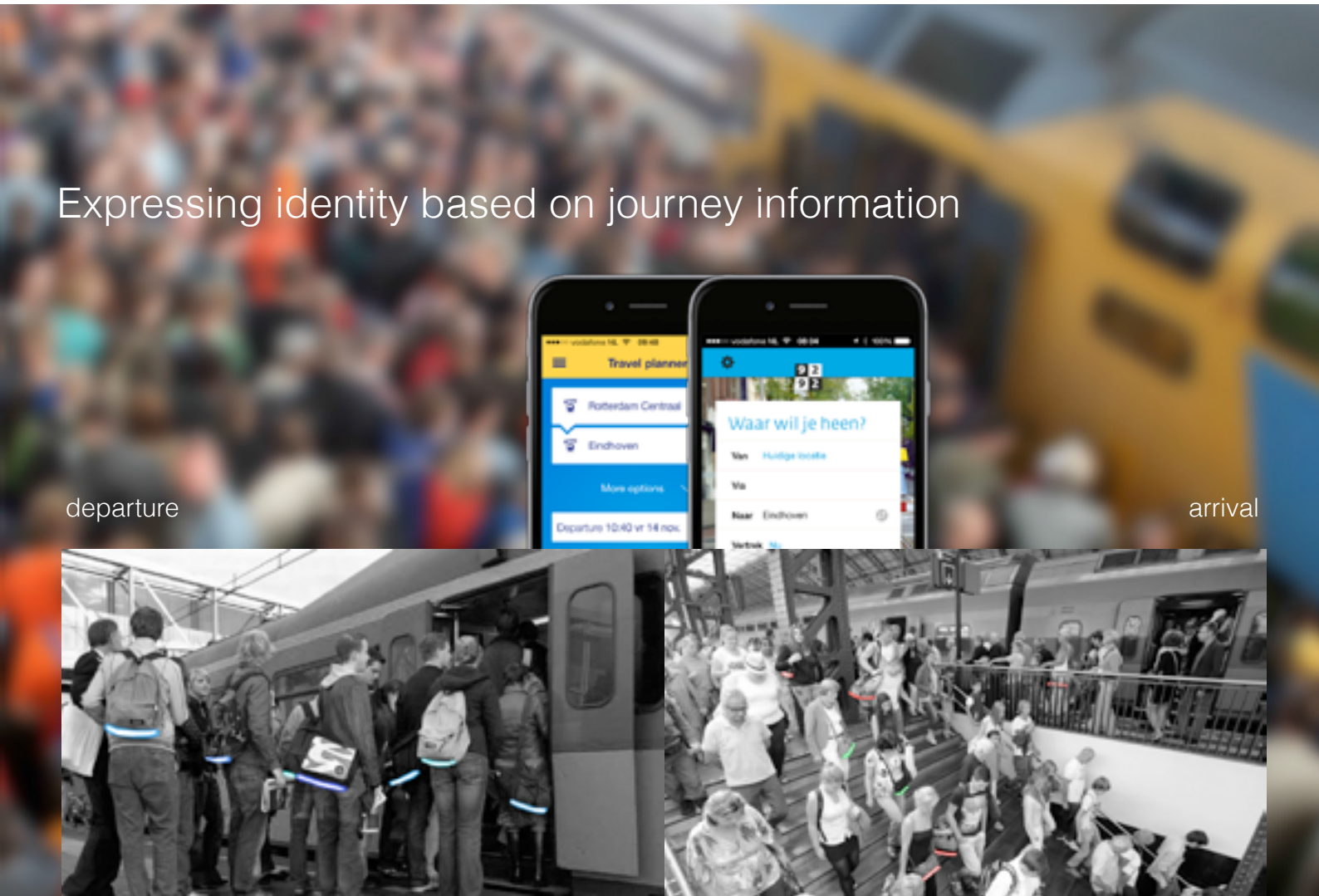


2

Final Concept

The final concept is about expressing your identity as a person or as a group based on journey information. For example people that have just looked at their smartphone to plan their journey, walk to the platform from which their train will depart. the smartphones of these people know where they are going and the preferred time. Assign these people with the colour blue and they will instantly know where to go, because there are more people around them with the same colour.

People might behave differently when they know from each other where they are going. Not only in the way they move though crowds, but also in te way they interact with their environment. Perhaps people would go and sit next to each other if they have the same destination. Talk about their journey, destination or something else they have in common.



Elaboration

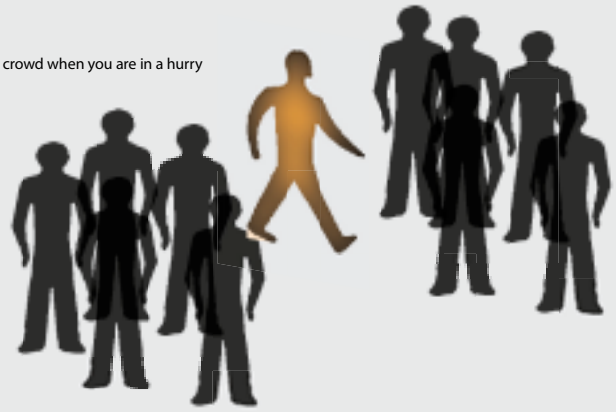
With the right direction set, it is time to go deeper. I want people to be able to see what I see when I look at a crowd. They become one big organism like a flock of birds. I want that the people who travel their journey every day can enjoy the spectacle that unfolds itself in front of them. The phenomenon is a visual one, therefore the communication to the people must be visual as well. The eventual product can not be interruptive in daily life, otherwise it is impossible to be enjoyed by the users.
Travelers always have a bag with them, so this the best target wearable. I decided the product to be an accessory instead of a full-sized bag, because this accessory is not about the bag itself but the display function it provides. Besides, people want to choose their own bag, since it is a very personal item. Preferably the accessory has to be visible from the front and the back. The only piece of a bag that is on both the front and back is the carrying strap, so that is the perfect part of a bag to be an accessory.

How it works

These visuals explain the purpose of the product and how it works.

What is the purpose?

Get the attention from a crowd when you are in a hurry



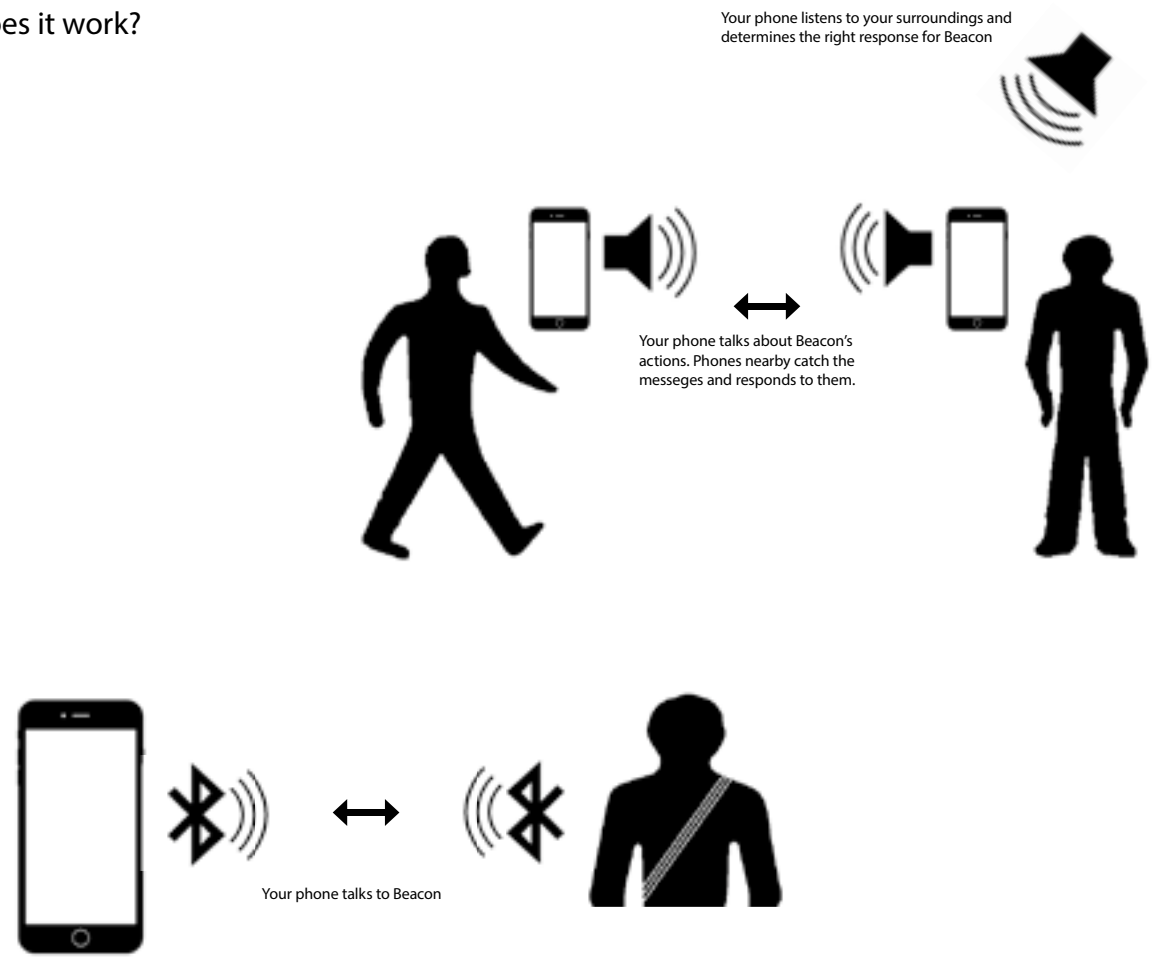
No hassle with lights on your bike which get lost or broken

Improve the safety of traffic by becoming the traffic light

The purposes (left page) Beacon fulfills next to the visualization of flowing crowds is the lighting on your bicycle, getting a crowd's attention when in a hurry and extended traffic light display. When someone with a Beacon is waiting for a traffic light the accessory takes over the tasks of a traffic light. Turn red when the traffic light is red and turn green when the light is green. People become the infrastructure making traffic safer.
The technology behind Beacon (right page) is mostly in the users smartphone.

The smartphone has the right sensors and communication technology. It is unnecessary to integrate expensive technologies in an accessory when you carry them in your pocket. Beacon talks to your phone over bluetooth. Your smartphone listens to your environment and determines the right message for Beacon. If there are other phones paired with a beacon nearby they will hear the ultrasonic sound beacon emits and analyse if they want to form a group. If two beacons are close enough they will group together.

How does it work?



An accessory for your baggage

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Photography by Tom Kölker

Final Exhibition

Presenting your ideas is always a bit exiting. The more and enthusiastic you talk about your project the more people get interested and want to know more. It is also a good moment to receive feedback from your colleagues. I explained my project to a parent of a student and it really helped me to take some distance from the project. Sometimes you think that your audience knows more than in fact is true. I really enjoyed the work of the other students. Suddenly you get the overview of all the projects.


UITGANG

Future

For the future I would recommend to investigate how people would react when the product is deployed in the field. The user should have some kind of control over the product. It would be more fun to use if the users can influence their own appearance and thereby become a leader within the crowd.

Afterword

Many thanks to all the people who supported me past semester. Special thanks to Menno Stoffelsen who has been a great support throughout the semester. He is the person who brought me new insights regarding the world of design. Menno helped me develop myself in a way I would never have imagined. I very much appreciate the undivided attention, I received on especially the late hours of Friday afternoon. Also many thanks to Lennard Bunk, my fellow colleague premaster student from The Hague University. We have learned a lot from each other and I can not remember having so much fun during my studying career.

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