

The sociality of everyday bicycling

A research proposal by

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Project start date
March 30, 2015

Supervisor
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March 22, 2015

1 Research plan summary

2 Introduction and background

Bicycling is oftentimes considered to be a very solitary activity. But even when we are not riding intentionally in a group—be it for a bicycle tour or as a group commute—bicycling can still be a social experience. It does not take place in isolation, but “in complex choreography with other multi-modal road users” (**noid**).

Compared to other modes of transportation, bicycling offers a unique combination of experiential differences. Bicycling happens ‘out there’, outside of an enclosed room, which allows us to use all our senses and experience the trip and the environment with our whole body. This allows for complex interaction which would not be possible eg within a car. At the same time, bicycling happens at a much higher pace than walking, which limits the range of possible interactions somewhat.

The importance of pedestrians for the urban landscape has already been recognized a long time ago.

- bike is one of the most simple transportation devices, hasn't changed much in recent years; don't put too much technology in, don't change the being of the bike

Lately, the role of bicycling as a social activity has been recognized by bicyclists as well. The *Slow Roll* movement¹, in analogy to the *Slow Food* movement, promotes ...



Figure 1: A Slow Roll bike tour on break. Picture by Slow Roll Detroit.

Similarly, looking for the hashtag #CoffeeOutside on social media like Twitter and Instagram reveals meetups all over the world.

¹ See <http://www.slowroll.bike/>

While some research has happened very close to the project, namely Esbjörnsson, Juhlin, and Östergen (2003) on motorcycles, McIlvenny (2014) on direct social interaction (and *intentional* bike formations), and Cromwell (2013) from an urban perspective, nobody seemed yet to have touched the possibilities the Internet of Things might have for this.

3 Research focus

In focus of my research work are what can be described as *temporary formations* in urban bicycle traffic. My goal is to describe

- How can we make use of the phenomenon ‘temporary cyclist formation’ in urban traffic (maybe using IoT technologies)
- How can the cycling experience be properly conveyed/represented? focusing on ‘temp cyc form’ as well?

Objectives:

1. To describe the phenomenon tempCycForm and its characteristics
2. Explore social interaction patterns within that phenomenon
3. Explore design openings that make use of it
4. Design for better/nicer commutes with respect fo tempCycForm

4 Literature overview and related work

Not much has been written on cycling as a social experience, and most of it in the humanities (the social sciences, especially). While there also exist many studies in the area of traffic research and urban planning, most of it seems irrelevant to my research. Lastly, there is work in the areas of architecture and design that touches on the design space I am interested in.

4.1 A framework for social interaction and meaning-making in a velomobile environment

Marc Augé coined the term ‘non-place’ and uses it to describe mostly spaces of transition, for example bus stops and trains. He did not account a lot of meaning to non-places.

TODO: read spinney and insert here (Spinney 2009)

- McIlvenny, Jensen ‘mobile with’

mobile with + temporary congregation + formation = temporary formation
TODO: read mcilvenny and insert here: with; mobile-with (McIlvenny 2014)

- Kat Jungnickel, Rachel Aldred

Wie war das mit indirect und direct interaction?

4.2 Tangents to the design space

- vllt was von wegen ‘design for serendipity, encounters’?
- Esbjörnsson et al Motorcycling & social interaction Esbjörnsson, Juhlin, and Östergen (2003)
- Cromwell und sein social act of bicycling Cromwell (2013)

Jensen (2010) proposes that we study what he calls the “mobile with.” Jensen argues that “in the mundane and ordinary everyday life we make multiple ‘temporary congregations’ as we are slipping in and out of different ‘mobile withs’ . . . ‘Mobile withs’ might be exemplified by groups of recreational runners or cyclists [italics added]” (p. 341).

In regard to interactional formations, Kendon (1990b, p. 209) describes how “people often group themselves into clusters, lines, or circles, or into various other kinds of patterns. These patterns may be highly fluid or they may be relatively sustained. When such a pattern is sustained it will be referred to as a formation.”

Once moving together, co-riders need to sustain a shared pace, otherwise co-presence cannot be maintained, the mobile formation dissolves, and talk or interaction is no longer possible. As we shall see later, formations can be stretched without breaking, and thus interactions have an elasticity that requires co-riders to attend to their mobility as and with their talk-in-motion.

5 Methodology

Two factors are of the utmost importance for this research project: sociality and embodiment. They suggest a methodology that is grounded in co-design and . As my research focuses on everyday cycling, it is important to work with everyday cyclists, commuters mainly.

One method that crystallizes from these prerequisites is *bodystorming*.

To quickly prototype any ideas that would require random encounters with many cyclists on the road,

- Workshops
- Bodystorming - group storming
- design games

Observation: go and observe bycicle-heavy roads; or go full ethnographic, and go into traffic, maybe following others

Role play: prototype bike traffic with multiple people by means of role play. Not even in real traffic. Just 'play'.

Ideen:

- i. Ein Bumper-Sticker, oder eine App, oder eine Weste o.a. die sagt "Ride with me, I'm social"

6 Collaboration

- Sigma Connectivity
- IOTAP - ECOS - Jonas Lowgren
- Andere Personen:
 - Francesco
 - Roberto

7 Expected results

- How to prototype IoT stuff in a velomobile environment
- tempCycForm
- a method of conveying the social cycling experience
- prototypes of ways/things to encourage social interaction in tempCycForm, e.g. the 'ride with me im social' thingie

8 Activity plan, schedule

Milestones:

- 75% thingie on 1 may

Activity plan:

- design of experiments

- design of workshops
- doing se workshops
-

9 Pilot experiment

Jungnickel (2014) describes a method of creating time-lapse videos of bicycle rides with the aim of conveying a sense of ‘there-ness’ resulting from the visual experience. This experiment builds on her method and, in addition to the feeling of ‘being-there’, tries to convey a sense of the fluctuating social environment during the ride as well. In other words, I aim to represent Jensen’s (2010) interpretation of the ‘mobile with’.

For this, I recorded photos of two rides around the city of Malmö. Similar to Jungnickel, I composed these photos without any further editing or filtering into a time-lapse video. However, instead of just playing the photos at a constant speed, I altered the frames per second (FPS) or the video depending on the size of my current formation: when I was riding alone, the video would play at a fast pace, and it would slow down whenever I would be with others; the bigger the formation, the slower the video.

9.1 Setup

After a few short tests with several time-lapse apps, using a smartphone camera proved not to be a feasible solution. The smartphone bike mount that I had access to was, while securing the phone to the handlebars, not made for holding it steady or even holding it in an upright position (so that the camera could point forwards). The images it caught were shaking, alternating in brightness, had blurs (probably because of refocusing) and were — worst of all — not very interesting, as they showed mostly my front wheel and part of the road in front of me. Instead, I used an action camera (in this case a GoPro HD Hero 2). The camera came with a proper bike mount for the handlebars, and is made for ‘action’ situations, i.e. short exposure, bad lighting conditions, and heavy shaking. Before starting the ride, I set the camera to time-lapse mode, which means that it captures a picture in defined intervals. I set the interval to be 500ms, which is the shortest interval supported by the camera. This seemed sufficient for the purpose, as Jungnickel (2014) used 2-second intervals.

In addition to the equipment for capturing pictures, I used my smartphone to record audio. Using a simple audio recording app and a headset with the microphone placed near my neck, I could record any thoughts and remarks I had during my ride, and thus record any non-visual impression, such as ‘how many people are in a formation around me’.

9.2 Execution

Before going on the ride, I started the audio recording using my smartphone. I then started the GoPro while noting the exact time in my phone. The ride itself was made with a more or less constant pace, but as natural as possible. When ever the number of people around me changed because I joined or left a group, passed someone or was passed by someone, I noted the number of people in my formation with the phone.

This way, I captured two different rides on the same day, in the following referred to as *Ride A* and *Ride B*.

9.3 Post-production

Ride A went for about 30 minutes and captured more than 3000 photos, whereas Ride B went for about 15 minutes and captured about 1500 photos. With the command-line program `ffmpeg` I created a time-lapse video from each of the rides at 30 frames per second (FPS). This would be the speed representing my solitary phases during the ride. Then, using the video editor iMovie, I slowed down all the scenes in which I was in a formation. As this happened manually, the exact speed at which the non-solitary parts of the video would play is not constant, but precise enough to make the viewer understand the connection.

9.4 Result and reflection

The result of this experiment are two time-lapse videos of my bike rides through the city of Malmö.



Figure 2: Still shots from Ride B

In both videos, the solitary time on a bike is longer than the time in a formation. However, in the video to Ride B I am part of a bigger formation — up to five people at one point. The contrast between the different playback speeds can be ‘felt’ and seen more clearly in the Ride B video.

Both videos start with a solo ride and the full 30 FPS. Thus, the transitions between individual frames are short and the overall scene gives a smooth visual impression. However, as soon as I build a formation with other cyclists, the number of FPS is (intentionally) cut in half. This is very visible, as not only the playback is slower, but the transitions are sharper. While it is generally

good that the change in formation is very noticeable, it is possible that the visual characteristic distracts from the actual message at hand, because it feels like a decrease in quality (which, strictly speaking, it is). With this in mind, it might be worth to try a proper video recording instead of time-lapse in another iteration of the experiment. This way, the video would never fall underneath 30 FPS and would be more pleasant to watch.

10 Potential risks

- People do not like to be in a formation with strangers
- they do not like to interact with strangers
- tempCycForm is not a thing, or is hard to design for
- might have to shift focus to intentional cycling formations, then more referring to Paul McIlvenny
- might have to shift focus to other encounters, such as ‘meeting’ or ‘passing’, more looking into Esbjörnsson et al.

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