

The perception of safety of international students cyclists in Groningen

A qualitative research study about how safe international students perceive cycling in Groningen and the reasons behind this.



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Abstract

Cycling is a popular way of transportation in the city of Groningen. Groningen also has a large student population that is still growing. Perceived cycling safety determines if cyclists feel safe enough to cycle. News articles wrote that some international students do not feel safe enough to cycle in Groningen. This is why this research looks into how safe international students perceive cycling in Groningen to be. 15 semi-structured interviews were conducted. The conclusion is that international students perceive cycling in Groningen as safe. This is mainly due to the separated cycling lanes and the behavior of car drivers towards cyclists. The large number of other cyclists in the city does not have a negative impact on the perception of safety. The simultaneous green traffic light intersection is a unique intersection type to Groningen. SGI's do not have a negative influence on the perception of safety. International students do have to get used to the SGI's because it can feel chaotic. Bus drivers and scooters do have a negative impact on the perception of safety. A better knowledge of traffic rules could also prevent dangerous situations. This could be prevented if information about traffic rules would be provided by the university.

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Figure title page: Cyclists on the Europaweg-Griffenweg intersection (Veenstra, 2019).

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1. Introduction

1.1. Background

Cycling in the Netherlands is a popular way of transportation, more than 25% of all journeys in the Netherlands are carried out by bicycle, this is more than any other country in the world (The Brussels Times, 2020). The city of Groningen is no exception to this. 60% of all traffic movements within the city of Groningen are by bicycle (Groningen fietsstad, 2020). There is an extensive bicycle path network of 145 kilometers of separated cycling lanes within the city (Fietsnetwerk n.d.). 40.000 of the 233.000 people that live in Groningen are students (AlleCijfers.nl, 2020; Studiekeuze123, 2021). A lot of the students use the bicycle as a way to commute to the campus because the cycling path to the Zernike campus is the most used cycling path of the whole city (Municipality of Groningen, 2015). Groningen is also a city that is getting more popular with international students. In 2020 4200 more international students were studying at the Hanze University of applied science or the university of Groningen than in 2016 (Hanze university of applied sciences, 2016; Hanze university of applied sciences, 2020; University of Groningen, 2016; University of Groningen, 2020)

Cyclists are vulnerable when participating in traffic because a bicycle does not protect the cyclists in the same way a car protects its driver (Davis, 2001). This is one of the reasons that perception of safety does have a great influence on people's willingness to cycle. When people do not feel safe on a bicycle they are less likely to use the bicycle (Cleland and Walton, 2004). Some of the new international students in Groningen also do think that cycling in Groningen is not safe and get anxious even thinking about getting on a bike in Groningen (Zaal, 2021). Safe bicycle facilities increase the comfort and willingness of people to try cycling (Sanders and Judelman, 2018). Some research has been done about the perception of safety on cyclists however, this is more focused on separated bicycle paths and cycling in mixed traffic in cities that are car-centric. Not a lot of research has been done about how the perception of the safety of cyclists is influenced by other cyclists or pedestrians. International students violate traffic rules more often than Dutch students (De Waard et al., 2019), it is however unclear if this is because they lack the knowledge of the rules or if they lack the willingness to follow the rules. It is also not clear if a lack of knowledge of the traffic rules influences the perception of cycling safety of these international students. There is also a research gap regarding the perception of safety in a city with a large number of cyclists. It would be interesting to understand the perception of safety on the bicycle of international students in Groningen and if the perception of safety is influenced by infrastructure, other cyclists, pedestrians, car users, traffic knowledge or, the perceived skill level of the cyclists.

1.2. Research problem

Groningen is a city with a lot of cyclists and a lot of international students. Since the amount of international students is growing these students need to be able to feel safe when cycling within the city. By researching how international students currently perceive cycling in Groningen, aspects of cycling that are perceived as unsafe can be changed so future international students do feel safer and are more likely to use the bicycle in Groningen. Aspects that are already perceived as safe can be implemented more. Some research has been done about the perception of safety of cyclists however, this is limited to cities where the car is the main transportation method. This report aims to find out what the perception of the safety of international students is regarding cycling in the city of Groningen. The city of Groningen would be a suitable location for this research because of the large number of cyclists and international students in the city.

The main question the report tries to answer is:

What are the international students' perceptions of the safety regarding cycling in the City of Groningen?

The sub-questions are:

How does Groningens cycling infrastructure influence the perceived cycling safety level of international students?

How does the perceived cycling skill level and knowledge of traffic rules of international students in Groningen influence their perception of cycling safety?

What are the effects of other cyclists and pedestrians on the perceived safety of international students cyclists in Groningen?

1.3. Hypothesis

H1: International students might perceive Groningen as a safe city to cycle in due to the high quality of cycling infrastructure.

Since the quality of cycling infrastructure is high in Groningen, it is expected that international students might feel safer when it comes to the use of separated bicycle lanes, the attitude of motorists toward cyclists, and other cycling infrastructure.

H2: international students might feel less safe when cycling due to a large number of other cyclists or due to certain infrastructure features.

International students that are not used to cycling in a city with a lot of cyclists might feel less safe when surrounded by a large number of other cyclists. Cycling in Groningen might feel chaotic and unsafe for new students in Groningen. This is also due to infrastructure features

such as simultaneous green intersections for cyclists (SGI's) and roads that are shared with cyclists and pedestrians.

1.4. Outline

This report will first discuss the academic literature that is available about the safety of cycling and how safety is perceived by cyclists. Then the decision to take a qualitative research approach will be discussed in the methodology in chapter 3. Chapter 4 includes the results of the interviews and links this back to the theoretical framework. The conclusion of this report will include a recommendation for future research and proposes new measures on how international students might feel safer when cycling in Groningen.

2. Theoretical Framework

2.1. Perception of safety

In this paper perception of safety of a cyclist is explained as to how comfortable a cyclist is when cycling. If cyclists perceive cycling as dangerous they perceive the risk of an accident as too high and are not comfortable to cycle (Sanders and Judelman, 2018). The perception of safety is different from the actual traffic safety since traffic safety can be explained as: "The risk of being injured because of interaction with motorized transport modes" (Rietveld and Daniel, 2014). The difference between these two concepts is that perception of safety is about how someone perceives the chance of an accident, while traffic safety is about the actual chance of having an accident.

2.1.2. Infrastructure

The infrastructure in a city affects how safe cyclists perceive a city to be. Cyclists in emerging cycling cities perceive cycling to be less safe than cyclists in established cycling cities partly due to the lack of designated cycling infrastructure in emerging cycling cities (Chataway et al., 2014). The perception of safety also depends on the kind of infrastructure, cyclists perceive a cycling path that is physically separated from car traffic as safer than a cycling path that is painted on the road (Nazemi et al., 2021). Due to the lack of separated cycling paths, cyclists in emerging cycling cities perceive the layouts of the infrastructure as less safe (Chataway et al., 2014). Separated cycle lanes are not only perceived as safer but it is proven that they reduce cyclists-motor vehicle crashes, so it does affect the actual traffic safety level as well (Schepers et al., 2017). Besides cycling lanes, it is also important that people feel safe at intersections (Hull and O'Holleran, 2014). Groningen has a unique infrastructure feature when it comes to intersections: the SGI. This intersection type gives a simultaneous green traffic light for cyclists in all directions. The benefit of this type of intersection is that it reduces waiting time for cyclists. Not all international students and elderly people however like these intersections because they perceive them as dangerous (Zafari, 2018). There are 28 intersections in Groningen where this feature is applied (Groningen fietsstad, n.d.).

2.1.3. Cycling skill level and traffic rule knowledge

One factor that may influence the perception of safety is the cycling skill level of a cyclist. The basic control level on the bicycle of international students after living at least three months in Groningen and Dutch students is nearly the same (De Waard et al., 2019). It is however important to understand that perception of safety is influenced by the perception of skill level not by the skill level itself (Lawson et al. 2013). So even if the basic control level of international students is the same as Dutch students this does not mean that the perceived cycling skill is the same. The increased perceived skill level on a bicycle can lead to overconfidence in one's skill level. This decreases the perception of risk in mixed traffic, which could lead to more accidents, so this affects the actual traffic safety as well (Marín Puchades et al., 2018). Cyclists with a driver's license are less likely to cause an accident (Yao and Wu, 2012). This could be because they have a better understanding of the traffic rules. International students did violate traffic rules more often than Dutch students (De Waard et al., 2019).

2.1.4 Motorists

The attitude of other motorists towards cyclists also has an impact on the perceived safety of cyclists. Perceived social norms of motorists regarding aggressive driving towards cyclists and a negative attitude towards cyclists relate to more aggressive driving directed at cyclists (Fruhen and Flin, 2015). An improved attitude of drivers towards cyclists has been shown to have a greater effect on the perception of safety than segregated bicycle paths do (Lawson et al. 2013). Due to a large number of bicycle trips undertaken in the Netherlands, it is less likely to see aggressive driving towards cyclists. The safety in numbers phenomenon explained that a motorist is less likely to collide with a cyclist if there are more cyclists in a city (Kuipers, 2012). This is due to a difference in driver behavior towards cyclists when there are more cyclists in a city (Jacobsen, 2003). If there are more cyclists in a city the chance is higher that car drivers are also cyclists. Car drivers who are also cyclists are more aware of the traffic rules regarding cycling infrastructure and have a more positive attitude towards cyclists than car drivers who do not cycle on a regular basis (Johnson et al. 2014). Due to the safety in numbers phenomenon motorists in the Netherlands behave differently to cyclists than motorists in emerging cycling cities. Cyclists in the emerging cycling cities with less dedicated cycling infrastructure have more fear for other traffic than cyclists in the established cycling cities (Chataway et al., 2014).

2.1.5 Traffic accidents

Traffic accidents also influence how safe cyclists perceive cycling to be. If a cyclist experiences an accident themselves the perceived risk of getting involved in another accident increases. Also near misses influence the perceived risk of getting involved in a traffic accident (Sanders and Judelman, 2018). Accidents that the cyclists themselves are not involved in can also influence how safe the cyclists perceive cycling to be. People perceive intersections or roads as less safe when an accident has happened in these places (Rietveld and Daniel, 2004).

2.2. Conceptual framework

The conceptual framework is shown in figure 2.1. The conceptual model shows the relationships between the theoretical concepts that were discussed in the theoretical framework.

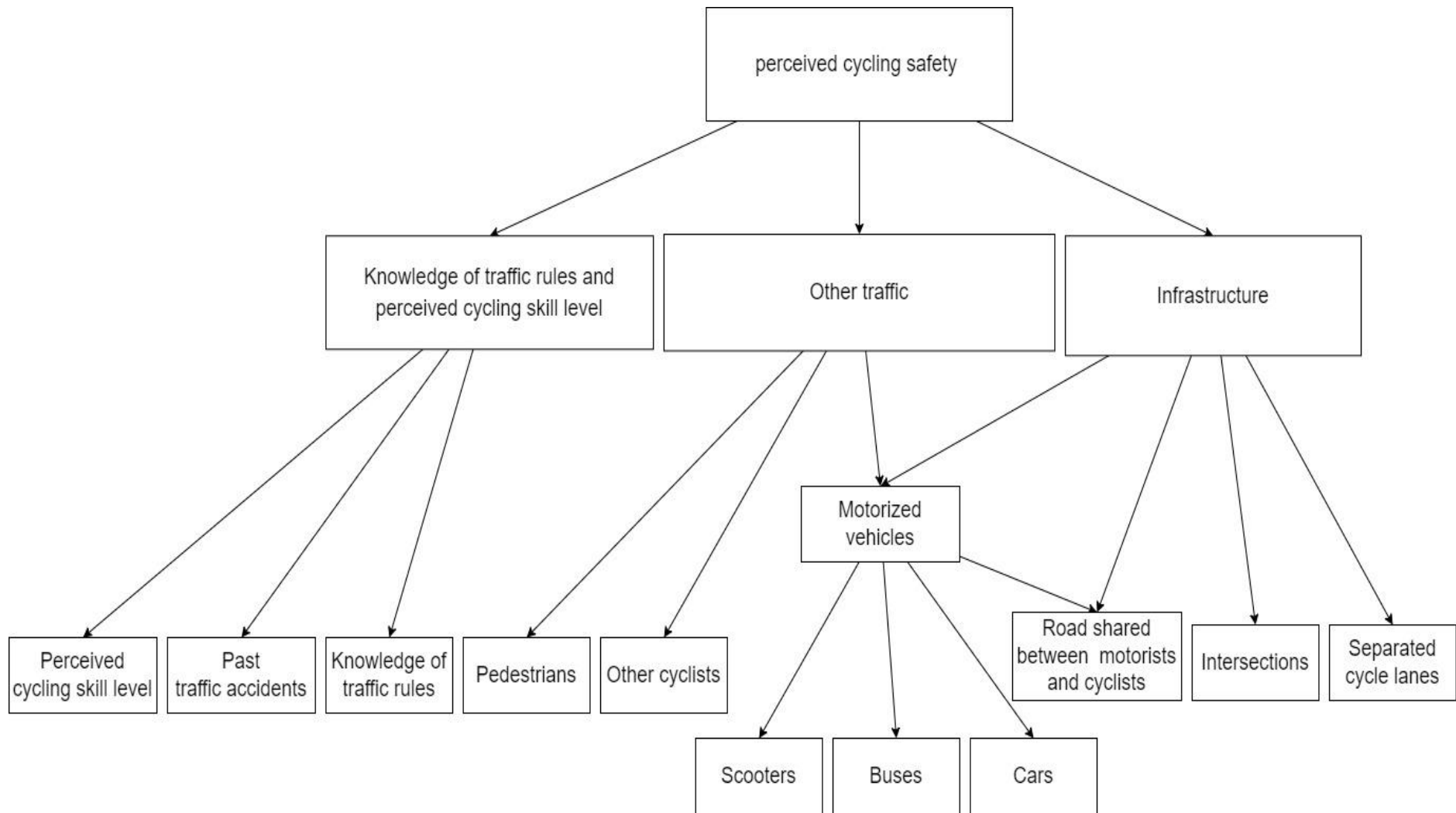


Figure 2.1: Conceptual framework

3. Methodology

For this research, fifteen semi-structured interviews were conducted. A qualitative research method was chosen to give the interviewees a better opportunity to express their opinion about cycling in Groningen and how they feel about this topic. Since it might be difficult to express opinions and feelings about the perception of safety of cyclists in numbers a quantitative research method might not be suitable for the topic (Clifford et al., 2016).

3.1. Recruiting participants

Fifteen students participated in the research, these students were recruited through the personal network of the researcher and by sending an e-mail to the students that follow a course for exchange students at the faculty of spatial sciences. Also, some requests were posted in Whatsapp groups with international students studying in Groningen, this approach was however unsuccessful. Although it was intended to interview students with and without cycling experience before arriving in Groningen, all the interviewees had learned how to cycle before coming to Groningen. Since it was only asked during the interviews if the interviewee had previous cycling experiences it was not possible to find people based on previous cycling experiences. In future research, this could be solved by making a small survey that asks about previous cycling experiences, then selecting the interviewees based on the responses of the survey. Also when asking in classrooms or social media groups if people want to participate in an interview, people who are more interested in the topic are more likely to participate in the interview. In this case, this meant that people who are interested in cycling reacted more to the request to participate. These people did have more cycling experience since they were more interested in the topic of cycling, people with less cycling experience did not react to these requests. Another limitation of this research is that the interviewees are from different countries with different cycling cultures; this might be hard to compare in some cases. Table 3.1 shows the date on which the interview took place, the country where the interviewee was raised, the study year the interviewee is currently in, and the faculty where the student currently studies.

3.2. The interviews

The interviews that were conducted were semi-structured, this way the questions could be compared between all the interviewees but the interviewees were still able to express their opinions about aspects of the safety of cycling they thought were really important. Due to the limited availability of the university library (because of exam weeks and covid restrictions) most of the interviews were conducted online via Google Meet. This platform has a recording feature so it was not necessary to make notes during the interviews so all the attention could go to the conversation (Clifford et al., 2016). The interviews took around twenty minutes each. Fourteen interviews were done in English, one interview was done in Dutch. The interview guide is shown in appendix A.

3.3. Analyzing the data

All the interviews were recorded and transcribed with the help of the transcription tool in Microsoft Word. The transcriptions were also checked on mistakes made by the transcription tool. In order to make it easier to analyze the data, the interview transcripts were coded. Coding the data helps to link connect the themes discussed in the interviews with the theoretical concepts discussed in the theoretical framework (Clifford et al., 2016). To code the transcripts the ATLAS.ti software was used. The codes were based on the theoretical concepts, the codes are shown in appendix B, and appendix B also shows how many times each code was used. A summary of each transcript of the interviews is shown in appendix C.

3.4. Ethical considerations

Before the recording of each interview, the topic of the thesis was introduced to the interviewee, and permission was asked to record the interview. The interviewee was also informed about the right to stop the interview at times during the interview. The recordings of the interviewee will not be published or shared with anybody and are only used to transcribe the interviews, the recordings will be deleted after the research paper is completed. The names of the interviewees will also not be shared.

Date of interview	Raised in	Study year	Faculty
25-10-2021	Lithuania and the USA	3rd	Science and engineering
27-10-2021	Poland and the USA	3rd	Spatial sciences
29-10-2021	Hongkong	3rd	Spatial sciences
4-11-2021	Poland	3rd	Spatial sciences
5-11-2021	Egypt	3rd	Economics and business
8-11-2021	Poland	3rd	Spatial sciences
4-11-2021	Germany	Exchange	Spatial sciences
4-11-2021	Ukraine	Exchange	Spatial sciences
17-11-2021	Portugal	2nd	Economics and business
16-11-2021	England	3rd	Spatial sciences
11-11-2021	Austria	Exchange	Spatial sciences
18-11-2021	Germany	3rd	Spatial sciences
11-11-2021	Romanian	1st	Science and engineering
30-11-2021	Switzerland	1st	Spatial sciences
18-11-2021	Spain	2nt	Hanze school of Business, Marketing & Finance

Table 3.1: Table with the date of the interview, the county they grew up in study year at the time of the interview, and the faculty the interviewee studies at.

4. Results

4.1. Effects of infrastructure on the perception of safety

4.1.1. Separated cycling lanes

All the fifteen interviewees felt safer cycling in Groningen than in their home countries. One of the major reasons for this was infrastructure and especially the separated cycling lanes. The interviewees felt that the separated cycling lanes prevented the number of contact points with cars so there was less interaction with cars. A second student from Portugal stated that the separation between cars and cyclists does increase the level of safety.

“Well, for starters you have dedicated roads everywhere for cycling (...) Traffic lights for bikes as well, so there's a whole system developed just for bikes which makes it really safe.” - Interview 9

This is in line with the research done by Nazemi et al. (2021) that people feel safer on separated cycling lanes than on cycling lanes that are painted on the road. The interviewees also described that due to the extensive cycling path network the accessibility in Groningen is higher than in their home country.

“Here is everything connected. You go out of the city, and even if you're in the middle of the field, you have a cycling path” - Interview 15

4.1.2. Intersections

One aspect that seemed to be challenging for international students in Groningen is the SGI. There are no formal traffic rules in these situations so non-verbal communication is important in order to avoid conflicts with cyclists that come from other directions (Groningen fietsstad, n.d.). Four of the interviewees said that they did not have any problems with this kind of crossing one German exchange student mentioned he felt safer at these SGI's.

“(...) I really like this [The SGI's] because even though it is faster I think it is safer as well. With regular interceptions, you have to cross a street with cars, but then you have to stop at the other side of the intersection [in case of a left turn]. Then I have to wait for the next green light. So the way that they do it in Groningen is the proper way to do it”
- Interview 7

The other eleven interviewees said that they had to get used to the SGI's, three of these eleven people did not feel comfortable enough to take the left turn diagonally when they first arrived in Groningen. They took the left turn in two stages, first cross the street straight then turn left and wait for another traffic light cycle and then cross straight again. The green line in figure 4.1 shows the fastest way to make a left turn on an SGI and the red line shows how the students that were less comfortable took the left turns. One of the three students that were not comfortable enough to take the left turn at the SGI's took the pedestrian crossing while walking with the bicycle in his hand.

“When they have the crossings where everything is green all at once? That's hellish. (...) There's no regulation there at all. (...) when I got to a junction, I'd get off my bike and then stand and then walk across. [to take a left turn]” - Interview 10

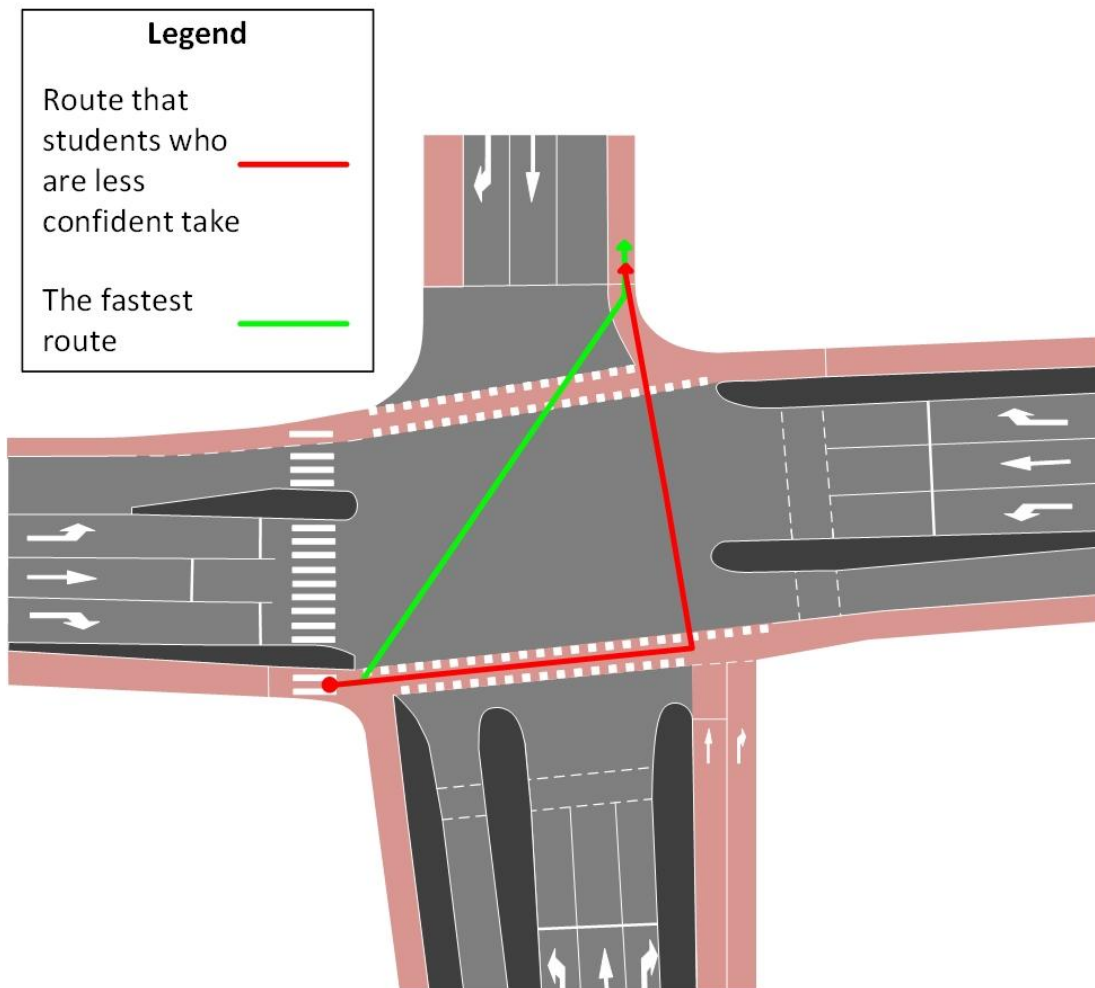


Figure 4.1: Schematic representation of a left turn of the green in all direction intersection for cyclists between the Emma viaduct and the Stationsweg in Groningen.

One of the reasons why the interviewees described was that they did not feel comfortable with SGI's straight away was because they did not know who to give priority to and if the road markings apply to this situation. The official rules state that at these intersections nobody has priority, in practice people who come from the right have priority (Groningen fietsstad, n.d.).

“You have obviously the right priority, but sometimes it's a bit confusing with the shark teeth [road markings who show who has priority]. Who has priority? do shark teeth count? Or do I just give priority to the person on the right? So that's a bit confusing sometimes. But I mean everybody takes care of each other, so it's alright.” - Interview 11

The SGI's are one of the infrastructure features that are most surprising for international students, and students do have to get used to this. This is also in line with comments made by traffic psychologist Dick de Waard in the Ukrant (Zafari, L. 2018) about how these intersections can be challenging for international students.

4.2. Effects of Cycling skill level on the perception of safety

4.2.1. The cycling skill level of international students

All of the interviewees did learn how to cycle before arriving in Groningen. Four of the interviewees did only cycle as a child and felt that they had to get used to cycling again, these four students did feel less comfortable on a bicycle in the first couple of weeks than they do now. After getting used to cycling again nobody felt unsafe due to their cycling ability. Three interviewees did mention that they had to get used to the coaster brakes on the Dutch bicycles because they were used to the brakes on the handlebar.

4.2.2. Knowledge of the traffic rules

Most of the interviewees did feel like they have a good enough understanding of the traffic rules to safely participate in traffic in Groningen. These students do think that they know the most important traffic rules. There are still however traffic rules that international students are not familiar with, four students did not know what a priority triangle on the road meant ('shark teeth'). One student also got a fine for cycling with his phone in his hand while he did not know this was illegal. That international students do not know all the traffic rules is in line with previous research that stated that international students did violate more traffic rules in Groningen than Dutch students (De Waard et al., 2019). One interviewee does think that cycling in Groningen can be unsafe due to his lack of traffic rule knowledge. This Polish third-year student also states that he did not actively look for the rules because nothing was pushing him:

"We don't know the rules, or at least I don't know the rules. And I could change it, but. I don't know, maybe because I haven't been in an accident yet, I don't have something pushing me to actually look the rule up." - Interview 6

The lack of knowledge of traffic rules can also lead to dangerous situations. Four interviewees ended up on roads where cyclists were not allowed. Two of these people did describe cycling on these roads as a terrifying experience. A Lithuanian third-year student did end up at the highway and did realize the dangers of cycling on it.

"Yeah, so there's a lot of things I don't know about. I know I've infringed on a couple of rules, that's for sure but I have never caused harm to anyone else except for myself. I think that the most serious thing was when I ended up on the highway I got honked at and panicked and fell, thankfully not on the road. I did realize later. Oh my god, I could have died." - Interview 1

It has to be mentioned that the other two people who ended up on the highway did think that their traffic knowledge was good enough to participate in traffic in Groningen. This could mean

that they felt that cycling on the highway was not perceived as unsafe while the other two students did perceive it as unsafe.

Some students did think that there was a lack of information available about the traffic rules or did not know where to find this information. A first-year student from Romania describes that he is not sure if he knows all the necessary traffic rules:

“I still don't know them [the traffic rules]. Uh, Or I'm not sure If I know all of them. I didn't exactly find anywhere to read them, or no one pointed me towards them. I have a rough idea of it and to get to uni and back. I think I know what I'm meant to do for almost all the intersections. So it's a possible level, but I'm still unsure.” - Interview 13

All the interviewees did agree that it would be useful if the university or the municipality would provide new students with information about cycling in Groningen. One third-year student from England also believes that this also convinced international students who currently do not cycle to cycle more.

“I know a lot of my friends who said the only time they learned to cycle was in that ESN like 5-minute sketch thing [about the traffic rules in Groningen] that they did so. If they'd missed that, then they wouldn't cycle and a lot of them did miss that, and a lot of my friends refused to cycle for six months in the city. (...)I really passionately feel that all you have to do is just get them interested with something like a short video, something that would make them feel comfortable cycling.” - Interview 10

4.2.3. Previous traffic accidents

Seven of the interviewees have had a traffic accident in Groningen on a bicycle and two more students had witnessed a traffic accident involving a cyclist. Four of the interviewees blamed themselves for the accident they were involved in. The reasons they blamed themselves, were that they did not have enough control over the bicycle or that they felt that they were not paying enough attention. Two other students had accidents due to slippery roads and one student got hit by a car while this car did not give priority. While most of the incidents were minor accidents where the students did not feel less safe on a bicycle. Some students did feel less confident after having an accident or said that they would be more careful after the accident.

“I felt less safe in myself. I felt very reassured because I think I've crashed now twice into people once it was a very small bump on a lady on like a high-speed part it was because I didn't look when I moved into the like overtaking side of the path” - Interview 10

One German third-year student that witnessed an accident did say that this was a scary experience since this could have happened to him as well.

“like the only accident I've ever seen was actually when I followed a girl on the wrong cycling lane. Basically, we were on the wrong side of the road (...). So then yeah, she actually got knocked out by the car because they couldn't see her and that was quite

scary because I was right behind her doing the same wrong thing and then.”
- Interview 12

It is very unlikely that overconfidence was the cause of the accidents because three of the four cyclists that had accidents they blamed themselves for, also state that they had to adapt to cycling in Groningen and were not as confident in their cycling skill level as they are now. This does not mean that overconfidence does not lead to more traffic accidents on a bicycle (Marin Puchades et al., 2018) but in these cases, overconfidence was not the cause of the accidents. The Accidents did affect the perceived safety of some of the international students since they said they would be more careful after their accidents. This is in line with the research of Sanders (2015) who states that the perception of risk is higher after an accident. That one student felt scared after witnessing an accident is also in line with the research of Rietveld and Daniel (2004) that states that people feel less safe on intersections where an accident has happened.

4.3. Effects of other traffic on the perception of safety

4.3.1. Cars

The interviewees also felt safer with the driving behavior from cars in Groningen than with cars from their home country. 80% of the interviewees said that they would rather cycle on a road with Dutch cars on it than on a road with cars from the country they grew up in. Dutch car drivers gave more space to cyclists and gave priority to cyclists when needed according to a second-year Portuguese student.

“I think that in the Netherlands car drivers have a lot of respect for bikes. Like if a car sees a bike they will most certainly stop or slow down because there's always I believe that stigma of well, first we don't know if this person on a bike is a tourist and he might not be as good on the bike as I am and so people tend to be really respectful.”
- Interview 9

The reason why the interviewees think that Dutch drivers behave differently towards cyclists than drivers from different countries is that the rules in the Netherlands are more strict or that Dutch drivers are more used to all the cyclists (because they might cycle themselves).

“I absolutely think the fact that pretty much everyone in this country also cycles means they know what it's like to be trying to do a sneaky overtake on someone or just be outside the bike lane or whatever. I think that that is such a big part of building safety into it (...) it was such a stark difference from where I'm from.” - Interview 10

Research also stated that the attitude of car drivers towards cyclists has a greater influence on the perception of safety than separated cycling lanes have (Lawson et al. (2013). This was not entirely supported because due to the separated cycling lanes, there are fewer contact points with car traffic so if there is less interaction with cars it is less important how cars behave

towards cyclists. One German exchange student describes how he has fewer problems with cars in the Netherlands due to the separated cycling paths.

“Yeah, I think I also have fewer problems with cars in the Netherlands because there is not so much conflict between the car and the cyclist. Like yes, separated from the cars and stuff like this so you don't have so many conflict points where you could get in conflict there.” - Interview 7

Three students did not feel safer with Dutch cars because they felt that since Dutch drivers are more used to cyclists they are more likely to do riskier overtake maneuvers. One third-year student from Poland thought that Dutch car drivers did not give enough room and made more dangerous overtakes than Polish drivers would.

“Yeah, I'm sure there is an element of that Dutch people are more used to seeing bikes on the road. But because you are more used to seeing bikes on the road, I feel like you are more likely to take risky maneuvers and ride very close to me, where your mirror is basically touching my handlebar off the bike” - Interview 6

The perception of safety also depends hugely on each person. The Oosterstaat in the city center of Groningen was given as an example of how much patience car and bus drivers have towards cyclists by a third-year student from England. A second-year student from Portugal describes that he would rather avoid this same road because he experiences this road as dangerous due to all the buses that drive here and the lack of space there is for cyclists. The reason for this different perception of safety could be the attitude of car drivers towards cyclists in their home country. The English student describes the attitude towards cyclists in England as very hostile. The Portuguese student also describes that car drivers can behave dangerously towards cyclists but not as hostile as the English student describes English drivers to be.

Buses in the Netherlands are perceived as less safe than regular cars when interacting with bicycles in traffic by international students. Buses give less space and can be quite intimidating according to an Austrian exchange student.

The behavior of cars does have a positive effect on the perception of safety of international students on a bicycle because the majority of the interviewees thought that Dutch drivers are more respectful towards cyclists. Bus drivers have a more negative effect on the perception of safety. This is in line with research done by Kuipers (2012) that car drivers in cities with more cyclists are less aggressive towards cyclists.

4.3.2. Cyclists

Thirteen of the interviewees answered that they thought that cycling in Groningen could be somewhat chaotic due to the large number of cyclists in the city. Several students use the term “controlled chaos” to describe cycling in Groningen. Due to the large number of cyclists in the city, some international students did have to get used to cycling in such a busy environment. But

after getting used to the other cyclists they did not feel unsafe because of other cyclists. A Spanish student describes that new students might perceive cycling as chaotic.

“(…) I mean it's a bit more chaotic [than cycling in Spain] in the sense that let's say that if you are new you find it chaotic because you can think there are bikes everywhere and you have to get used to a go with the bike and cycling with all the other bikes surrounding you. (…) But it is not that hard. I feel I've used the bike a lot and I don't know. It's just like everything, practice. (…) But I did not feel unsafe because of other cyclists.” - Interview 15

Six of the Interviewees thought that SGI's to be the most chaotic part of cycling in the city. But in general other bicycles were not perceived as dangerous. E-bikes were also not perceived as more dangerous than bicycles.

4.3.3. Scooters

In Groningen, scooters are allowed to ride on the cycling paths (Groningen nieuws, 2020). Twelve of the interviewees thought that scooters should not be allowed on the cycling path because scooters can cause dangerous situations. According to a Spanish second-year student, the large speed difference and the reckless driving style make scooters dangerous on the cycling path.

“I think they're very annoying because usually people that drive them to pass really fast compared to what people are usually going when they are cycling. (…) I had accidents with people on scooters because they're all the time going fast.” - Interview 15

According to a third-year student from Poland E-scooters also have the downside of being completely silent.

“I hate it. I hate scooters, but it's my personal opinion because I think the problem with them is; first of all, they are just completely unsafe because of the speed and that they are fueled by electricity, which makes them completely silent like they don't make any noise.” - Interview 4

Scooters on cycling paths seem to have a negative effect on the perception of safety of international students due to the big speed difference between cyclists and bicycles. E-scooters also have the downside that they are completely silent so people might not expect an E-scooter to overtake.

4.3.4. Pedestrians

None of the interviewees thought that pedestrians had a negative impact on the safety of cyclists. The city center of Groningen does have a couple of shared spaces between pedestrians and cyclists however these were not perceived as unsafe for cyclists because the

pedestrians paid enough attention to the cyclists according to the interviewees. Some of the interviewees felt less safe as a pedestrian on those streets because of the speed difference.

“It can be quite busy sometimes [The shared spaces], but I think these are one of the safest places, I think, because you really look out for each other especially as a bicyclist, you're at the advantage. Sometimes the worst part is being a normal pedestrian walking around. So I think there the bicyclist should kind of take more care of the pedestrians or not drive too fast. But in general, like shared, that's completely fine.” - Interview 11

One interviewee did mention that he would rather avoid the shared streets if it was busy in those streets because he felt more comfortable on a less busy parallel street. Overall pedestrians do not seem to have a negative effect on the perception of safety of international student cyclists in Groningen.

5. Conclusion

Cycling infrastructure was one of the most important reasons why international students perceived cycling in Groningen as safe. Due to the separated cycling lanes, the international students experienced less conflict with cars and felt safer, this confirms the research of Nazami et al (2021). This also confirms H1, which stated that international students would feel safer cycling in Groningen due to the cycling infrastructure. The SGI was by some students described as chaotic however after getting used to the SGI's they would not describe the SGI's as dangerous.

All the interviewees stated that they had previous cycling experiences, some interviewees did mention that they had to get used to cycling again but after a couple of weeks, all the interviewees felt safe regarding their cycling skill level. Most students described did understand the traffic rule good enough to participate in traffic but they did not know all the rules. This would explain the research of de Waard et al. (2019) that international students did violate the traffic rules more than Dutch students. The lack of knowledge of the traffic rules did lead to dangerous situations for some of the students. Overall for most students, the traffic knowledge and cycling skill level did not negatively influence their perception of safety. All students however did think that it would be useful if extra information about the traffic rules was provided.

Hypotheses 2 (H2) predicted that cyclists might feel less safe cycling in Groningen due to the large number of other cyclists in the city. This hypothesis can be rejected since the effect of other cyclists on the perception of safety is less than was expected beforehand. The SGI's are perceived as the most chaotic parts to cycle in the city of Groningen however most students do not have a problem with the SGI's. The SGI's also had a less negative effect on the perception of the safety of cyclists than expected.

Other factors that influenced the perception of safety negatively were busses and scooters. The attitude of car drivers did affect the perceived safety positively, international students felt safer

because of how car drivers in Groningen behaved towards cyclists, This is in line with the research of Kuipers (2012) that states that the behaviour of car drivers is less aggressive in cities with a lot of cyclists. Overall international students do perceive cycling in Groningen to be safe and also to be safer than in the country they lived in before coming to Groningen.

For future research, it would be interesting to understand how students with no previous cycling experience at all would experience cycling in Groningen. An additional focus on immigrants could also be looked into since this report only focuses on international students. Immigrants might have to be in a different age group which could affect how they perceive how safe they think cycling in Groningen is. A possible language barrier of immigrants might also play a role in trying to understand the cycling culture in Groningen.

To improve the knowledge of the traffic rules of international students, additional information could be given to all the first-year and exchange students of the University of Groningen and the Hanze university of applied sciences. This could prevent dangerous situations and can encourage students that are not yet comfortable enough to start cycling in Groningen. The students that did try to look for information about traffic rules did not know where to look for this but most students did not look for this information.

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Appendices

Appendix A: Interview guide

Ask About recording!

Tell the interviewee that they can stop the interview at any moment

Short introduction about the topic and explain that the interview will take around 20 minutes.

Where are you from?

Did you cycle before you came to the Netherlands?

If you did what was the purpose of cycling? (commuting/recreational/sport)

Cycling culture home country

Can describe briefly the cycling culture in your home country (do people cycle a lot, is there good infrastructure, etc.)?

If you did cycle before coming to the Netherlands: Do you think that cycling in your home country is safe?

If you did not cycle before coming to the Netherlands: What was the main reason you did not cycle before coming to the Netherlands

Cycling in Groningen

Do you think that cycling in Groningen is safer than cycling in your home country?

Have you had any traffic accidents in Groningen?

If so did you still feel safe on a bicycle after this accident?

Do you think your cycling skill level was good enough when first arriving in Groningen to cycle in Groningen?

Do you think that you have sufficient knowledge of the traffic rules in Groningen?

Do you feel that cycling in Groningen is chaotic?

What is your opinion on the green on all-direction traffic lights for cyclists?

Does the behavior of motorists make you feel unsafe on the bicycle?

Do safety concerns have an impact on the route you choose to take?

Conclusion

So in conclusion ...(short summary of the most important points)

Do you have anything to add to this?

Is there anything else you would like to mention?

What is your age?

Thanking the interviewee for participating in the interview

Appendix B: Codes used in Atlas.it and how many times it is used.

Codes used	Amount of times used
Cars/Busses	44
Cycling skill level	25
Intersections	29
Knowledge of traffic rules	22
Other cyclists	23
Past traffic accidents	16
Pedestrians	10
Scooters/E-bikes	19
Separated cycling lanes	29
Too scared to cycle	3
Type of bicycle	3
Information provided by the University or the municipality	10

Appendix C: Summary of the interview transcripts

Interview 1

Date: 25-10-2021

Nationality: Lithuanian

Study year: 3rd

Faculty: Faculty of science and engineering

The interviewee grew up in the US and in Lithuania, he learned how to cycle in Lithuania and in the US but mainly in the US. He only cycles in Lithuania for recreational purposes. Cycling in Lithuania is mainly a sport or recreational activity but 10 years ago or so they started to improve the cycling infrastructure and they are still working on it.

About the attitude of car drivers towards cyclists:

“Most of the time. They're pretty pissed about it. I'm just like speaking from my mom's experience 'cause she hates when she has to share the roads with cyclists. She says "why do they not drive on the sidewalk" and then like, well, according to the rules they can't. I don't think that it's very antagonistic as I've seen like in some places. Like in the US, I've seen a lot of like you know articles where the perception of like cyclists is a lot more negative, But I think it's pretty neutral, but I know certain individuals have, like gripes about you know cyclists and, and all the older common complaints, so like they're stealing the road all this like you know causing traffic to slow down and all that.”

The interviewee did think that cycling in Groningen was safer because there are more cycling lanes and that the cycling lanes are well connected than the cycling lanes in Lithuania. Since cycling lanes in Lithuania are mainly made for recreational purposes they don't really go anywhere. So cycling the cycling network in Groningen is a lot better because you can go anywhere on your bicycle not just cycle in a park or something.

The interviewee did have traffic accidents

“but most of them were falls of my own volition or like problems with the bike itself but I don't know if that really counts. There were a couple of times when I was like confused about the right of way. I only found out this year, what the hell the spiky triangles mean when in an intersection. I was like what is that? What am I supposed to do? 'cause I just like realized It shows who to give way to”.

The interviewee did think that the lack of knowledge of rules could lead to dangerous situations.

“Yeah, so I'm like there's a lot of things I don't know about the rules, so I know I've infringed on a couple of rules well like that's for sure. But I'd never caused harm to anyone else except for myself. I think that the most serious thing was in the 1st place I lived. That is Hoogezand and it had like an awful connexion with bikes.

There was this highway ramp and I went on it and ended up on the highway.

since I was just living there I wanted to take a shortcut so I looked on up op google map and I ended up on the highway ram and then on the highway part. Then I got honked at, then I panicked then I fell but thankfully not on the street, but it was like Oh my God I like I think I've done something wrong. My friends told us later that it is really dangerous to cycle on the highway and illegal. I was very mad because I think I ruined my bike that way because I had to go through a gravel path. Anyway, you live and you learn.”

The interviewee did think that the main reason for his accidents was the lack of knowledge of the traffic rules and not the lack of cycling skills. He did think that his cycling level improved in the Netherlands. The interviewee about how chaotic cycling in Groningen is:

“I think Cycling in Groningen is a bit of acquired taste like at first you just need to get used to the like know your surroundings. You know that really like once you're aware of what you're doing then it is well okay. Of course, there are parts of the city where you know it's always chaotic, especially like the market during weekends or the morning rush. The thing that surprised me at first was the all green lights for bicycles. That was, like you know, a bit of a shock 'cause like I thought, oh OK, it's going to be like, we're basically cars, but no, it's. Like everyone goes and that it. That took some like getting used to like okay, who has priority? But it's definitely more beneficial for the cyclists, even though it might seem Like a hot mess express.”

The interviewee did not feel unsafe with cars because he didn't really encounter them but he did mention that he had to pay extra attention to scooters.

“Well, usually like the roads I take, I don't share with cars. Sometimes with a scooter, since they can share bike lanes, that's a thing where you know you need to look out for and be aware that he can overtake you. With cars, you usually follow a certain like flow 'cause usually like if you are in an intersection with cars you kind of already like have a heightened awareness of like OK, like you know this is like a traffic situation. You need to be on like higher alert, but usually with scooters that share the same lanes with you. they're intruding in your safe space, They would always catch me by surprise, 'cause I don't expect them. But otherwise, I don't think I had a bad experience on a shared road with cars but I try to avoid those roads more often anyway, just 'cause like the good thing about this is that there are a lot of roads that go parallel these roads are a lot safer”

Safety did influence the route he takes but the most important factor is to avoid traffic lights. The interviewee did think that infrastructure was the most important reason why Groningen I safer than Lithuania but did think the safety of numbers principal also helped a lot. “In Lithuania your kind of a lone wolf when it comes to cycling” so he thought that he felt also safer in Groningen because you are not the only cyclist and you are more inclined to cycle. The interviewee also thinks that a small cycling course about the traffic rules would be useful.

Interview 2

Date: 27-10-2021

Nationality: Polish/USA

Study year: 3rd

Faculty: Faculty of spatial sciences

The interviewee did grow up in the US but is also half Polish, he only cycled in Poland using public city bikes. He did use the bicycle occasionally to get around but not really for commuting. He cycled only in the US as a child for recreational purposes but after that not because of the poor infrastructure for cyclists. The interviewee describes the cycling culture in Poland as follows

“I'd say cycling is mostly kind of for recreation purposes. There are a lot of nature paths for bikes. For commuting purposes, most people use public transportation, so it's not really a main mode of transport.”

The interviewee did think that cycling for most parts is safe but the infrastructure is not perfect. There are cycling paths but cyclists still have to cross major roads. But the infrastructure is getting better. The interviewee did not commute by bicycle because public transport was more convenient. He did also think that cycling in Groningen was safer than cycling in Poland.

“I think the main reason why cycling is safer in Groningen is the infrastructure, there is a very good network of bike paths in the city and outside of the city. So that has a huge impact on safety, and I think there's a cycling culture as well. Well, I think that's the difference because in Poland and the US cycling is kind of seen as something extra and more like a recreational activity rather than for transport. I think the mentality like the drivers are aware that the bicycle is important and it has kind of the priority.”

The interviewee did have a traffic accident in Groningen due to a slippery surface when it was raining. He did think that his cycling ability was good enough to participate in traffic in Groningen. He did also think that his knowledge of the traffic rules was good enough but still thinks that the rules could be better communicated to international students.

“I think that my knowledge of the traffic rules was good enough. But some traffic rules I think were not communicated well. I got a ticket last year because I had my phone while I was filming something for a course, mobility and infrastructure planning, but I didn't know that you weren't allowed to cycle with your phone in your hands and the police officer gave me a ticket and didn't let me explain. So I think does it disconnect between what the rules are and communicating them to international students.”

The interviewee would be interested in receiving more information about the traffic rules if he was new in the city.

“I think it would be very useful for new internationals coming into the city to have a Dutch crash course just on Dutch cycling. I think that would be useful, especially if you come from a country where there's no cycling culture because I think also just little things like signaling which road you're turning into are useful o know. Just make it safer.”

The interviewee did think that cycling could feel chaotic at certain times for example during the evening rush hour and especially at the intersections where all the traffic lights have a green light at the same time.

“I think that the green light intersections are something you need to get used to and if you're cycling here and everybody is used to it and knows how to do it, then it's OK. Kind of 'cause you flow in groups and it's fine, but if you are not used to it, it's very very scary if It's the first time you would counter it.”

The interviewee also thinks that car drivers in the Netherlands are more aware of cyclists in Poland

“ Polish drivers are more reckless and dangerous than the motorists here. The drivers in Poland are much more aggressive and there's a sense that the car has more priority than the bikes.”

The interviewee also describes that he does choose his route based on how safe he thinks the route is.

“When I'm in the city center and I go like pass Grote Markt or into the city I avoid Folkingstraat because I know there's a lot of other cyclists and people, pedestrians sometimes cars. So I go on a parallel street up so I don't have to encounter them. And also I try to avoid the streets where the buses go because the buses drive really fast. I might take a detour to cycle on a separated cycling lane but this depends if I'm in a rush and also, how far away the nearest separated path is. But if it's close by and convenient, I'll take the separated one over the shared road because it feels safer and faster.”

Scoters on the cycling path make the cycling paths more dangerous according to the interviewee. Especially electric scooters.

“Yeah, I think the biggest, uh, problem on the bike path is like the electric scooters. Because they take up more space and also are quiet you don't always hear them. You aren't always aware that they're coming towards you, so it can be sometimes dangerous.”

Interview 3

Date: 29-10-2021

Nationality: Hongkonger

Study year: 3rd

Faculty: Faculty of spatial sciences

The interviewee did grow up in Hongkong and did learn how to cycle there. He does describe that cycling is not as common in Hongkong as it is in Groningen. The interviewee did cycle for recreational purposes in Hongkong but not for commuting.

“Well, in Hong Kong, cycling is not a very common method of transportation because the roads themselves are not very bikers friendly. There are certainly some of us who cycle back and forth from work or for school, but there are not a lot of people who do this. Only cycling enthusiasts or people who live somewhere that is really suitable for cycling, that is probably in only a few districts or areas in Hong Kong.”

According to the interviewee, car drivers are more aggressive towards cyclists (and pedestrians) in Hongkong than in the Netherlands because they are not used to cyclists in Hongkong. Another reason is that cyclists also do not know how to behave in traffic that well. During covid, a lot more people started cycling and especially the new cyclists struggle how to behave.

The interviewee does think that cycling in Groningen is safer than in Hongkong due to the less aggressive car drivers and the infrastructure.

“Cycling in Groningen is much safer because the behavior of drivers is much less aggressive as we just mentioned. Of course, the infrastructure takes up a big part too, like you got a very clear bike lane, while in Hong Kong you can rarely see bike lanes. I mean like not very rarely but definitely not as common as in Groningen. And the road width and the amount of traffic is much different too so Hongkong has a lot more car traffic. I think these are all important reasons. Yeah like so to summarize, I would say the behavior, the infrastructure, and the amount of traffic are reasons why Groningen is safer.”

The interviewee does think that he knows the general traffic rules but he does not all the rules. He did have a traffic incident in Groningen when he did not hear a scooter from behind because of wearing headphones.

The interviewee thinks that cycling in Groningen is very organized and people know how to behave in big crowds. The SGI's can be a bit chaotic.

“These kinds of intersections can be a bit chaotic, but I think cyclists are usually aware of this kind of situation because you know like we start off at a pretty slow speed so we all have enough time to react to the bike from different directions. So this is a bit chaotic but not as chaotic and will not create a dangerous situation”

SCooters make the cycling paths unsafer according to the interviewee because scooters can drive pretty fast, E-bikes are no problem because their speed is similar to that of regular cyclists.

Safety reasons were also not a reason for the interviewee to change their route because of the extensive cycling path network and drivers behave well towards cyclists.

Interview 4

Date: 4-11-2021

Nationality: Polish

Study year: 3rd

Faculty: Faculty of spatial sciences

The interviewee is from Poland and did learn how to cycle in Poland before coming to Groningen. She did use the bicycle for commuting purposes (in combination with public transport). She also cycled a little bit for recreational purposes.

Cycling in Warschau is getting more popular according to the interviewee however she thinks that new cyclists might fear all the cars in the city. There is also a shared bicycle system in Warschau named VentureLab. She also thinks that cycling in Warschau, in general, is used for both commuting and recreational purposes. There is bicycle infrastructure but it is not on par with the infrastructure in Groningen. The bicycle is way less used in the winter because of the snow, so only enthusiasts use it in the winter. But overall the interviewee believes that cycling in Warschau is safe.

“I think generally speaking cycling is safe in Warschau, Like for me it is safe, but I know that there are still accidents going on. what I observed, for instance, is that the bicycle path and at some random point might all of a sudden end and you have to go either cycle on a pathway or road. I assume some people might feel unsafe when this happens. There are also fewer cycling paths and the city is also quite big, so commuting from one side to the other, it's quiet maybe not challenging, but it's still an effort. It's not as safe as it is in the Netherlands. It may be not dangerous because car speed limits are decreasing for example and In general speaking, the municipality chose the direction to go forward with cyclists rather than drivers. But it's still a car-driven city. So there are a lot of accidents.”

Due to the increasing amount of cyclists, cars are getting more aware of the cyclists but there is still room for improvement when it comes to the attitude of car drivers towards cyclists.

“I think drivers are more aware and more patient when it comes to giving space to cyclists on the road, but also it's not always the case. I think it really depends per individual like some cars are still a bit annoyed and want the cyclists to go away. but only speaking on the big road, like on a massive road, not on a neighborhood road. But some people don't know how to deal with cyclists in traffic and it can cause problems from time to time, but there is the willingness to give cyclists space.”

The interviewee did think that cycling in Groningen is safer due to infrastructure and the different cycling cultures, people are more used to cycling so they behave more safely. She also thinks that due to the smaller distances Groningen is more suited to cycle in. Also, the policies in the Netherlands regarding cycling are more time to encourage cycling according to the interviewee.

The interviewee did feel like her cycling skill level was good enough to participate in traffic in Groningen. She also thought that she knew the traffic rules well enough.

The interviewee did think that cycling in Groningen is slightly chaotic but it is not a problem.

“Uh, I think cycling in Groningen it's like maybe slightly chaotic, but within this chaos, there's still some pattern. I think people can easily observe how to cross intersections, who has the right to go first, it goes smoothly even though there is a bit like chaos for maybe someone who is not adapted to cycling. Like in comparison to Amsterdam, I don't think it is chaos.”

The interviewee also had no problem with the SGI's

“Intersections like when all the traffic lights for cyclists are green at the same time, I was like, oh, that's cool, but so we don't have it in Poland, of course.”

The interviewee had several traffic accidents in Groningen. One of the accidents was the fault of a car driver who did not see her on a roundabout.

The interviewee does feel safe in general with dutch car drivers

“I think. Sometimes I feel like it's better to stop because the driver is also going quite slow, but not stopping and I'm like OK are you driving, or are you stopping so? What's the problem? Especially when the elderly are driving. I'm like I don't know what they are going to do, so it's better to stop and wait than the cross because I don't know how they will behave. Yeah, but generally speaking I feel very safe. But it's maybe also due to my skills. But for instance, the fast buses here are crazy like they go super fast, they don't care about anything. I might say buses are dangerous. More dangerous than polish bus drivers because in Poland the drivers are quite scared what cyclists can do so they are really careful.”

The interviewee does think that scooters are really dangerous especially de electric scooters

“I hate it. I hate scooters, but it's my personal opinion because I think the problem with them is; first of all, they are just completely unsafe because of the speed and that they are fueled by electricity, which makes them completely silent like they don't make any noise. I've heard people call them ghost scooters [instead of go scooters, the name of the brand that the scooters are from] because you can just hear them. And I think 90% of students or just young people either text or listen to music or talk with other people when cycling. I can imagine that they can't notice that the E scooter on the cycling path”

E-bikes are in general fine but could be dangerous if they are too fast according to the interviewee

“I've never seen that accident with E-bike, and I think it's a good alternative for elderly people, but it's also quite dangerous. They can go really fast. They could go really fast. Especially when children I see. Sometimes I see children from primary school going on an E-bike and the E-bike is like twice as big as the children. I'm like what the hell this is really unsafe. 'cause they go really fast, so maybe there should be like limit like the speed limit on the engine of an e-bike”

The interviewee does not think that safety affect the routes she takes in Groningen because she thinks there are no real unsafe spots to cyle in Groningen

Interview 5

Date: 5-11-2021

Nationality: Egyptian

Study year: 3rd

Faculty: Faculty of economics and business

The interviewee grew up in Egypt and did learn how to cycle there. In Egypt, it is usual for children to learn how to cycle on private property since the roads are too dangerous to cycle on. There are no bicycle paths and the distances are too big to cycle so everyone takes the car. During the corona lockdown, the number of cyclists did however increase according to the interviewee. There are also no real traffic rules regarding cycling according to the interviewee and he does not think that cycling in Egypt is safe.

“In Egypt, car drivers are a lot less considered. I'd say like they barely make room for the motorcycles. So if you're a cyclist, you definitely need to wear protective gear and if you're going out on the street with the rest of the cars, like main roads, then definitely. Watch out, but yeah, I wouldn't say that cars take cyclists into account, not as much as here like they wouldn't stop for cyclists. They wouldn't let them pass.”

The reason for this, according to the interviewee, is that there are almost no cyclists so people don't pay attention to the ones that are there. He does think that cycling in Groningen is safer than in Egypt.

“It is safer to cycle here I think, yeah. Cycling in Groningen is quite practical and very easy. The only thing you have to remember is the arrows [Shark teeth, these are painted on the ground and show who has priority]] like which the arrows where do they point? If you have right of way. You even have the traffic lights for cyclists, which I think is pretty amazing. Yeah, it's all pretty flat. So yeah, I think it's really safe. And it's very comfortable”

The interviewee thought that his cycling skill level was a bit rusty but got better pretty quickly because he had to cycle a lot to get around in the city. He does think that it would be useful if more information was provided to international students about the traffic rules.

“That's actually one thing I would recommend that they should just inform first years about the traffic rules. I think people driving cars would also appreciate that. First years can really mess up things for cars and stuff. Because we internationals don't really know the rules. I had to ask a Dutch friend of mine, but you get the hang of it pretty quickly.”

The interviewee did not have any traffic accidents in the city or did end up on the highway. He does think cycling in Groningen can feel slightly chaotic but more controlled chaos.

"I'd say it's controlled chaos like where I come from It's a lot more chaotic. Cycling in Groningen to me is very, very controlled. You know the like the most chaotic thing is when, like in big squares, when you have all lights are green, so then they all just go. But I wouldn't say that's chaos. That's just a lot of cyclists. And even there there is a system to it, it is very controlled, it's not just chaos."

The interviewee has no problems with scooters since they can be heard very clearly even with headphones in. Electric scooters are a bit harder but still fine, he would use them if he had a license. Car aro also no problem but busses are.

"The attitude of car drivers towards cyclists is absolutely here than in Egypt. Here there are rules so they have to follow them. In Egypt when it comes to cycling we don't really have cycling rules. So yeah, it would just have to be a case by case, but here rarely have I felt that cars, host the danger to me. It's mostly the buses, the buses don't stop for anyone. Those guys will hit you and won't even care."

Safety does not impact the route the interviewee takes because he thinks that there are no unsafe spots in Groningen.

Interview 6

Date: 8-11-2021

Nationality: Polish

Study year: 3rd

Faculty: Faculty of spatial sciences

The interviewee grew up in Poland and did learn how to cycle over there. He cycled there less than in Groningen (twice a week or so) for recreational purposes. The interviewee did notice that people cycled a lot more since covid than they did before, this is also due to extra cycling infrastructure that is being built. He did think that cycling is safe on the cycling paths but not on the major streets.

The interviewee does think that because dutch drivers are more used to cyclists they give less space to cyclists.

“Yeah, I'm sure there is an element of that, that Dutch people are more used to seeing bikes on the road. But because you are more used to seeing bikes on the road, I feel like you are more likely to take risky maneuvers and ride very close to me, where your mirror is like, basically touching on my handlebar off the bike and I feel like people in Poland just don't have the experience, so sometimes they'd rather just wait because maybe you're going to turn into the nearest Street, maybe not, but they're gonna overtake you when they judge there's yeah, there's safe space. 'cause there are also rules that govern how close to a car driver can be to a cyclist of like 1 meter”

Officially Polish cyclists do need a license that children can get in elementary school but it is not really enforced by the police. The interviewee did mention that he does not know all the rules.

“I still struggle with the rules because at no point that I like consciously sit down and actually check what the cycling rules are. So it's a bit of a guessing game on a daily basis. I wish somebody, like the university, told you the rules when students get here. Like the most basic rules. I don't care about where I can park my bike, but I care about who's got priority That's basically the most important one. That's the one that prevents you from dying. It's like who's got priority on the intersections.”

The interviewee did believe that his cycling skill level was good enough to participate in traffic in Groningen. He also mentioned that due to the difference in the rule is less sure what to expect from car drivers in the Netherlands (how they will behave)

“I think there is one basic difference which is, pedestrians and cyclists always have priority in Poland when it comes to a crossing or an intersection and usually card drivers will let you through. There are of course some car drivers who are in a hurry or just don't like bicyclists or pedestrians too much and they will enforce their own priority in every situation, but yeah they usually they will stop for you. In Groningen, I'm terrible because I

don't actually know what the rules are. I don't know who has priorities, so if there's enough space before a car I will cross if I see it. Oh yeah, I'm going to die before that car then I stop and that's my rule."

The interviewee does think that cycling in Groningen is "pure chaos that somehow works" because there are a lot of cyclists in combination with cars and pedestrians. He does feel safe usually but he had to get used to the new type of bike.

"I usually feel safe. The only reason I do not feel safe, apart from the occasional car that is very close to you, is because I rented a bike this year that has the reverse brake. I don't know what you call it professionally. And I've never had those in the past, so I've gotten used to it, but it's still not my favorite thing in the world."

"First thing I feel is at the SGI's, uh, it feels slightly uncomfortable and weird. I know the sign, which is like "tegelijk groen" (green at the same time) or whatever it said and it has four arrows in all directions. I always do it one by one. I never do the go from here to here (cross diagonally/take a left turn) because I just feel very weird about it. I've had situations where I was just wanting to go straight and people were wanting to come for I the side and they didn't seem to care that I was coming. They would just enforce their priority and cycle in front of me which would feel slightly dangerous, so I'd rather be a bit slower, but hopefully safer."

The interviewee does not consider safety when choosing a route but rather be more careful at intersections or difficult traffic situations so he is still safe. The interviewee does not mind the shared roads with pedestrians but he does mention the cyclists do need to slow down if necessary. He also thinks that scooters should not be on the cycling path.

"Scooters, I think absolutely shouldn't be on the bicycle path. The speed and mass difference is too big. Just because of their speed, they're more likely to overtake in places where maybe it's not the best idea to overtake. Whenever I hear the sound of a scooter coming, I instantly become more aware and more careful. I'm sure there's an element of surprise to it. When it comes to electric bicycles, uh. I've seen very few electric bicycles. Maybe I just haven't been paying attention 'cause they usually look similar to your bike. I haven't seen them like reaching ultra-high speeds, so I'm absolutely fine with electric bicycles. I think they should be on the bicycle path."

The interviewees think that Groningen is overall usually a safe place to cycle but the lack of knowledge of the rules can cause dangerous situations.

"Yeah, I think Groningen is reasonably safe, I think It's usually unsafe because we don't know the rules, or at least I don't know the rules. And I could change it, but. I don't know, maybe because I haven't been in an accident yet, I don't have like something pushing me to actually look up the rules"

The interviewee thinks it would be good if the university provides information to new students (international and dutch)

“ I think every like first-year students should get one flyer with information about cycling in Groningen on like their welcome days or whatever. Even if you are from the Netherlands, 'cause as you just mentioned (the SGI's are only in Groningen), some of the things that are in Groningen don't appear in other Dutch cities, so I think it will be useful for everyone.”

Another thing the interviewee thinks can be confusing is the directions of cycling paths. Sometimes they are one-way paths and other times not.

“Like sometimes you have different directions of the bicycle path on different sides of the road, but other times you merge them on one side of the road because for example there is no space on the other side of the road. I recently experienced a situation like this and I just didn't know what to do. I just would have appreciated some information before that in 100 meters your bike paths will merge or whatever.”

Interview 7

Date: 4-11-2021

Nationality: German

Study year: Exchange

Faculty: Faculty of spatial sciences

The interviewee grew up in Germany and studies in Munster. He describes that a lot of people cycle in Munster for commuting purposes and this is increasing but the infrastructure is not as good as in Groningen however for German standards it is really good. Car drivers do respect cyclists in Munster but according to the interviewee, this is not the case in the small village he grew up in. Due to the cycling infrastructure, there are also fewer contact points with cars so less interaction with cars in Munster in general. He does think that cycling in Groningen is safer than in Munster.

“Ah yeah, yes, I think cycling in Groningen is safer because you have more separated cycling paths, and also a higher quality of the bicycle paths. They are broader and like on the same level of the street (in Munster they are on sidewalk level so a little bit raised), so you feel like you are on the same level as the cars. Here in Groningen, you have all the four-way green traffic, I really like this because even though it is faster I think it is safer as well. With regular interceptions, you have to cross a street with cars, but then you have to stop at the other side of the intersection [in case of a left turn]. Then I have to wait for the next green light. So the way that they do it in Groningen is the proper way to do it. There are also paths just for bicycles so not next to a road so there are no cars at all. There are also bicycle parking garages that hold many bicycles. The city center is also completely free of cars and that makes me feel safe and it is even more comfortable to use the bicycle in the city center than the car.”

The interviewee did say that even though he likes the SGI's he did have to get used to them.

“Yeah, I think it's the first time I've I've seen this SGI. It was a bit messy. But after I understood the principle behind this, I really liked it. It's just like you mostly just have to give way to one or two cycles and then you can go. With more bicycles, you have to slow down more. It's even more about communicating. There will be other cyclists so look at them and then go or give way to them. It's better than it is more about communicating.”

The interviewee also thought that the shared spaces with pedestrians in the city center can be chaotic especially Dutch people that ride a little bit faster than internationals.

“Uhm, yes, I think that these shared spaces can be a bit chaotic. Especially on the weekends when there are many guests and other people. When the city is not so crowded, I'm comfortable riding in these shared spaces. I discovered that the Dutch people are a bit ruder like they're just going faster through all the pedestrian zones. That's not so common in Germany.”

The interviewee did think his cycling ability was good enough to cycle in Groningen. He also had no traffic accidents in Groningen. Also, the traffic rules were not a problem for him although he was surprised that scooters can ride on the bicycle paths as this is not the case in Germany. Scooters also don't have to wear helmets over here, this is also different in Germany. He does feel unsafe when a scooter is riding on the cycling lane because of the speed difference and how close they get to cyclists.

The interviewee also thinks that car drivers in the Netherlands are more used to cyclists and do respect them more

“Car drivers are probably just more used to all the bicycles here in Groningen. There are bicycles everywhere, so yeah. So many people are riding a bicycle and not so many people are riding a car then maybe they see that the bicycle as equal in traffic. I usually don't have any conflicts with cars. It might also help that there are a lot of separated cycling lanes so there is not much conflict between the cars and de bicycles”

Safety doesn't impact the route the interviewee takes in Groningen because there are no points where he feels unsafe. He does change his route when it is busy.

Cars are the main reason why the interviewee would feel unsafe on a bicycle and other cyclists do not make the interviewee feel unsafe

Interview 8

Date: 4-11-2021

Nationality: Ukrainian

Study year: Exchange

Faculty: Faculty of spatial sciences

The interviewee grew up in Ukraine and did learn how to cycle over there. He did cycle in Ukraine but for recreational purposes, not for commuting, due to the mountainous terrain in Ukraine. The interviewee does describe that there is almost no cycling culture in Ukraine.

“Yeah, I would say it is pretty bad. There is almost no cycling culture in Ukraine and it's not only about the mountain regions, it's in general everywhere in Ukraine. It's only now that we are implementing and promoting the development of cycling infrastructure and trying to make our cities more comfortable for cyclists and other groups of residents. But in general, I mean we have some cycling paths, but it's not even comparable with the Netherlands.”

Some cities have bicycle infrastructure but the cities are still mostly for cars. The interviewee does not think that cycling is safe in Ukraine because of the cars and the attitude of cars towards cyclists.

“I can't like, say for everyone, but I think most car drivers have pretty negative thoughts about cycling because they like to park their cars on the side of the road and they do not like that there are cycling pathways being constructed here in Ukraine. They're like we don't need that. We need more parking space. Even if there is already a cycling path, they would still park the car on it and just ignore the rules. It's not something rare in Ukraine. I hope Ukraine will be more bicycle-friendly in the future”

The interviewee does think that his cycling skills were good enough to participate in traffic in Groningen and that because he had a driver's license he adapted quicker to the cycling rules and habits here in Groningen.

He does think however that extra information about cycling in Groningen would be useful for international students.

“Yeah Cycling in Groningen was pretty easy from like my first day here. Maybe that's because I have a driving license, so I kind of know the rules of the like traffic flows and they're kind of similar for bikes. The most confusing was that all the traffic lights turn green at the same time and everybody just crossing it was a bit confusing, you need to look for a gap when you can get at these intersections. Now I don't even pay attention to the intersections because I'm used to them now. So in general yeah, it was pretty easy to get into biking here”

The interviewee did not have any accidents in Groningen and did not end up on the highway. He did see accidents with delivery scooters. He also thinks that scooters should be on the road and not on the cycling path.

The interviewee thinks that cycling in Groningen can be a bit confusing at the shared pedestrian streets in the city center.

“Uh, well I would say that like on the pedestrian streets was like it's combined with bicycles and pedestrians. At first, it was a bit hard because I thought that maybe it is not allowed to cycle there, and maybe I should like it. Uh, go by walk and not cycle here, but pretty soon it became something that I got used to. It was not a problem for me.”

According to the interviewee, the car drivers in Groningen are much more polite than drivers in Ukraine, the interviewee thinks that this is because of the rules car drivers have to follow in Groningen.

“Car drivers are much more polite here. I think this is because probably the rules here are much more strict than in Ukraine. We were told, actually by Paul [van Steen] that if you have an accident between car and bike in almost all cases the car will be responsible for the damages. I would say that maybe not every driver is scared of the rules. I think they are in general more polite to the cyclist because probably most of them are also cycling and they understand the whole point of cycling.”

The interviewee does not mind busses and also does not change his routes because of safety concerns. He states that is is not always in a hurry so he can take extra time in busy situations. He thinks that cycling is a lot safer in Groningen than in Ukraine.

Interview 9

Date: 17-11-2021

Nationality: Portuguese

Study year: 2nd

Faculty: Faculty of economics and business

The interviewee is from Portugal, he also learn how to cycle in Portugal before he came to the Netherlands. He did not use the bicycle as a way to commute in Portugal due to the hilly terrain and the long distances. Cycling in Portugal in general is more seen as a recreational activity instead of as a way of commuting. The interviewee also thinks that the cobblestone pavement that is used in Portugal is uncomfortable to cycle on and that there is not enough space for cyclists on the road. There are also no cycling lanes in Portugal. Car drivers in Portugal also do not respect cyclists a lot and claim their priority even if they don't have priority.

Cycling in Groningen is a lot safer according to the interviewee mainly due to the infrastructure for cyclists that is in place.

“Cycling in Groningen is safer because well, for starters you have dedicated roads everywhere for cycling. You have crossways like, the cycle lane ends and then the car line starts and you have proper crosswalks just for bikes. Traffic lights for bikes as well, so there's a whole system developed just for bikes which makes it really safe.”

Also, the attitude of cyclists towards cars is different in Groningen.

“I think that in the Netherlands there is a lot of respect for bikes. If a car sees a bike they will most certainly stop or slow down because there's always that stigma of well, first we don't know if this person on a bike is a tourist and he might not be as good on the bike as I am and so people tend to be really respectful.”

Even though the interviewee did learn how to cycle in Portugal he still thought that when he just arrived in Groningen he did have to get used to cycling again. Since he cycled a lot in Groningen he got better at it quickly, he did not feel unsafe because of his cycling skill level. He did know most of the traffic rules but the specific cycling rules were new to him.

“Uh, well of course I did know most of the rules, in Portugal I had a car. I have my driving license so I knew most of the rules by default. When I came to Groningen there were however a few signs that were different. A few signs that were mostly hidden away or in unexpected places that I just didn't see. I ended up on the highway because I did not see the sign. The fact that there are rules for bikes was also new for me, In Portugal, there are no rules for bikes. A cyclist in Portugal follows the rules of the car, but in the Netherlands, not. There are rules for bikes and it caught me off guard. I did not feel unsafe because of this because again, people respect bikes. The education here is lean towards ok the bikes are people as well, Which is good.”

The interviewee also thinks that it would be helpful if extra information was provided about cycling in Groningen to new students.

“It would be helpful if extra information was provided with, for example, a flyer with all the cultural stigmas” of cycling in Groningen. It should not necessarily be only the rules, because the rules, you get used to them fast, but if you understand how other people might think from the get-go, you might start to see things differently. One example: If you're riding a bike, you have to point where you're going. You might learn this fast but if there was a flyer with that on the first day, then the first time you actually get onto your bike you might do it already. It's also nice to have when you bring home a flyer. Oh, these are the rules that they taught us.”

He also thinks that cycling in Groningen can be chaotic but not in a negative way

“It can be chaotic, but there's also some beauty to it. There is this intersection close to the station and there's always a lot of movement there and I find it beautiful to see just like 1000 bikes no not 1000 but like 50 bikes something like that just suddenly the traffic lights go green and then just see them moshpits, can be disorienting and it can always be dangerous. Not know why, but still, I never saw anything fail so I also think it's still beautiful.”

The interviewee did not feel unsafe at the intersections because there is room for error according to him.

“Well, if you feel unsafe, you can only stop slow down. So there's always that. If you have the whole square of the crossroads for just the bikes for a few seconds? Yeah, you can just go to the middle if you feel unsafe or go to the left or onto the side. I believe there's room for errors with this. But there is also, space for people just to respect others, and it's not guaranteed to fail. it can be chaotic, you have to be attentive, and yeah, if you are not attentive, you shouldn't be on a bike.”

The interviewee did have traffic accidents in Groningen, his last one was where he slipped on wet gravel because it just rained although he also thought he took the turn at a too high speed. He did not feel unsafe after the traffic accident but he was more careful after it.

He does not feel unsafe because of scooters because he is able to hear them due to the loudness of the engine, in that regards bicycles are more dangerous because you are not able to hear them unless they use their bell. (which he thinks should also be in the flyer: ring your bell). He did not encounter a lot of electric scooters.

The interviewee does change the route based on safety concerns at the Oosterstraat and Grote mark junction because of busses.

“Until recently, safety did not really impact my route, but you know, Poelestraat and Grote Markt. There's this road that is really narrow and has a lot of busses on it, so that particular road is actually pretty dangerous. Because it's tiny, it's thin, and there's also always a bus there so going through a bike there is not really nice. I would like to avoid that road yes.”

The interviewee also thinks that the attitude of cyclists in Groningen is different than in Amsterdam.

“I didn't bike in Amsterdam, but in Amsterdam, the attitude of cyclists is way worse because. You can respect the bikes, but the bikes do not respect you, so if you're walking in a bike lane, that's your problem. In Groningen, it's a lot different if you're crossing a road, people slow down and see where you're going, so it's a lot less chaotic.”

Interview 10

Date: 16-11-2021

Nationality: English

Study year: 3rd

Faculty: Faculty of spatial sciences

The interviewee did grow up in the UK and did learn how to cycle there as a kid on private roads because cycling on public roads was too dangerous due to all the cars. He did not really use the bicycle as a way to commute.

The interviewee describes cycling as not used for commuting or for recreational purposes in the town where he is from due to the attitude of car drivers towards cyclists. He describes the people as very conservative and not tolerant of changes. The car drivers are very hostile towards cyclists and see something for children.

“Car drivers do this thing kind of like a drive-by so when there's a commuter cyclist, they get as close to them as possible to try and push them over. When I went back to the UK over the summer holidays, I tried to cycle a bit and I couldn't do it. Like it was, it was actively dangerous and not even because of me.”

They are however installing more cycling infrastructure in the town where the interviewee is from.

The interviewee thinks that Groningen is a lot safer to cycle than the UK because of separated cycling lanes, so there is less conflict between cars and cyclists. He also thinks that because car drivers are also cyclists it is a lot easier to get around in Groningen on a bicycle.

The interviewee describes that he had to get used to cycling again especially in the first two weeks he got here.

“It took me about two weeks of shaking falling off now I can cycle with no hands and I'm proud of that. But it wasn't easy at all when I started off and there was no way to learn it was like you were thrown onto the road straight away”

The interviewee describes that he learned the traffic rules in an ESN [international student association] event, which explained some of the traffic rules in Groningen but cycling on the right side of the road was also an extra challenge.

“ESN did a little like comedy skit thing where they showed us some of the rules. They taught us about the shark's teeth there and about like the lines which mean there's a bump and which way to give priority to. For me, there was the added challenge of cycling on the right side of the road, which wasn't fun. One thing that still confuses me is

when there's a four-way intersection with no traffic lights or shark teeth. I don't know which way to give way to I think it's to traffic from the right, but I'm not sure."

The interviewee did have had some traffic accidents in Groningen.

"After the traffic accidents, I felt less safe in myself. I felt very reassured because I've I think I've crashed now twice into people once it was a very small bump on a lady on like a high-speed part it was because I didn't look when I moved into the like overtaking side of the path and the other time it was I collided into a friend because I was drunk. I think I think I felt confident that Groninger's don't want to crash, so if you make a mistake, they'll do anything to not crash, which is nice."

The interviewee also thinks that the SGI's can feel chaotic

"When they have the tegelijk groen (simultaneous green) intersections, where everything is green all at once? That's that's hellish. Like I live in the South of the city and I have to cycle along the from the center of the city to outside the city, pretty much every day and those big intersections where everyone goes all at once. There's no regulation there at all. You just if there's a space you go for it. Just about I when I first came here, I absolutely wasn't comfortable crossing these intersections diagonally to make a left turn, when I got to a junction, I'd get off my bike and then stand and then walk across and I used to feel quite smart 'cause the light goes green for pedestrians really early so I could do that. But also I feel like a twat when I do that now 'cause it doesn't make sense now. Now If I do it in straight lines, I have to stop and wait for the next light and that is I'm not doing that and not at all."

The interviewee also thinks that the attitude of car drivers towards cyclists is a lot better in Groningen than in the UK.

"I absolutely I think the fact that everyone pretty much everyone in this country also cycles means they know what it's like to be trying to do a sneaky overtake on someone or just be outside the bike lane or whatever. I think that that is such a big part of making cycling safe over here obviously I study human geography, so I kind of like to read about this in my free time 'cause I'm a nerd, but like it, it was such a stark difference from where I'm from to come here and see cars waiting for a cyclist. There is this road that goes past the jumbo, the Oosterstraat I think, like just one lane and then there's buses and taxis and cyclists and that's it. the fact that a bus or a taxi will wait behind you as you cycle up there. That is just insane. Like if I'm there's a road vaguely similar to that where I'm from it would be like cars honking. It would be chaos the cars would. I'm not kidding there. Try and push the bikes off the road, like bump into the cyclists to get rid of them. There's never an option to cycle."

After telling the interviewee that this street is actually seen as one of the more dangerous streets in Groningen by the other interviewee because of the busses he could kind of

understand this because the busses can get really close but since they won't overtake you as a cyclist he still thinks the is a safe street.

The interviewee also mentioned that he does try to avoid busy intersections because of the long waiting times a traffic lights and because some of the intersections can feel really chaotic. He also mentioned the intersection between the UMCG hospital and Sontplein as particularly dangerous because

“at the start of the first year I avoided the big high-speed bridge that goes like between IKEA and UMCG it's so huge like you if you make a single mistake, which I did as I was just starting to learn to cycle again, then you're stuck in the middle for like it's. It's hellish, it's really scary.”

The interviewee thinks that the overall street design in the Netherlands is an important part of why cycling is so popular here.

“I think that the attitudes and the infrastructure are part of why cycling is safe over here. The way that the streets are designed here means that broadly you have a lot of space and opportunities to see things like if you come to a junction, All the shops in the junction have glass windows, so you can like see reflections. Where I'm from in the UK with those like country lanes with the huge hedges and there is space for one car and one car alone. It's just a different world. It's like a different approach to making bikes feel welcome on the road.”

The interviewee also describes that he thinks that scooters are the most annoying thing about cycling in Groningen.

“hate scooters so much. Out of all the things that are annoying about cycling in Groningen it's mopeds and scooters, which make me the most unhappy like they whiz past you, which makes me nervous because everything else is s quiet in the city they're so loud in comparison. I don't like the electric scooters which you don't hear at all. They just whizz up behind you and like sometimes they might honk. But if there's like some drunk frat boys on there, then they're not going to care. I think scooters should not be allowed on the cycling path in Groningen”

Even though the interviewee did get the information about cycling from ESN he still thinks it should be useful for everybody to get this information from for example the RUG.

“So I think personally I would have consciously sought out trying to cycle if I did not have had the information of ESNand I still did actually tried to find the rules somewhere, but I know a lot of my friends who said the only time they learned to cycle, was in that ESN like 5-minute sketch thing. If they'd missed that, then they wouldn't cycle and a lot of them did miss that, and a lot of my friends refused to cycle for six months in the city. If the university was able to like put out even just like an informational video like in a jokey

way and they marketed it to students and they put it in an email or whatever. And said if you're wondering about how to cycle it, you can buy bikes from these shops you can buy them for this amount of money, you should look for this in a bike and when you get your bike these are the rules that you should follow. I think it would make cycling so much easier for people coming here like I, I really passionately feel that all you have to do is just get them interested with like a short video, something that would make them feel comfortable cycling.”

The interviewee thinks that this also can prevent dangerous situations. He did experience such a situation when he did not see the sign that cycling was prohibited on the highway and he describe it as terrifying. He can imagine that people who don't know what these signs mean might also end up on the highway.

Interview 11

Date: 11-11-2021

Nationality: Austrian

Study year: Exchange

Faculty: Faculty of spatial sciences

The interviewee did grow up in Vienne, Austria, and did also learn how to cycle in Vienna. The cycling culture is developing so a lot more bicycle-friendly policies are implemented in the last couple of years however this depends on the political parties that are elected.

“The cycling culture is rising. Vienna does a lot, and it depends on the political parties that are elected. There was a changeup last year or so or two years ago. And so it became a bit quieter because the Green Party left and the Green Party was always making the most efforts for pro bicycles policies. So Vienna was never perceived as a cycling-friendly city, but in the last 10 years it changed quite a lot, but there's still a lot to do. Vienna is currently, kind of lacking in the amount of separated bicycle lane stuff. They're not so good in or not so brave in taking space away from the cars. In my opinion, Paris currently is a really good example of how to deal with it in a fast way. Maybe a bit extreme sometimes, but I think that's necessary for change”

The interviewee also thinks that the lack of cycling infrastructure gives cars an advantage over cyclists. So cars are dominant in Vienna but there is no conflict between cars and cyclists. The attitude of car drivers is not aggressive towards cyclists.

The interviewee does think that his cycling skill level was good enough to participate in traffic in Groningen. Also, the traffic rules are mostly similar to the rules in Austria so that was also not hard for the interviewee. He did have to get used to the shark teeth since Austria only uses physical signs and not a lot of road markings. He does think the shark teeth are a good addition to the road because they are easier to see however can be a bit confusing at big intersections when there are a lot of shark teeth for different modes of transport especially at the SGI's can be confusing.

“Especially at the traffic lights with the simultaneous green for cyclists thing. You have obviously the right priority, but sometimes it's a bit confusing with the shark teeth. Who has priority? do shark teeth count? Or do I just give priority to the person on the right? So that's a bit confusing sometimes. But I mean everybody takes care of each other, so it's alright.”

The interviewee did not have a traffic accident on the bicycle in Groningen. The interviewee also describes that cycling in Groningen is safer than in Vienna, also because there are fewer cycling lanes in Vienna.

“Yeah, I would say. The difference is not as big as you would expect, I think, but in general, It's definitely safer and more convenient because everything is closer in

Groningen, but also the attitude of car drivers is different. Car drivers are a lot more conscious of cyclists. Also of with all the law enforcement for cyclists. You have the advantage as a cyclist, kind of power when an accident happened between a car and a cyclist. So you feel a lot safer because of that as well. Cars definitely take more care of bicyclists than in Vienna but Vienna also has a different city structure kind of. It's bigger, so it's always hard to compare that. But with all the kinds of the hard and soft measures. I would say that Groningen obviously is safer."

Cycling in Groningen can feel chaotic according to the interviewee especially in the first week after arriving.

"It can be chaotic. It's kind of at the beginning maybe a bit overwhelming, but you trust quite quickly, but I think also other international students had to adjust to cycling here for longer than I did and some internationals still have problems with that. Especially people from countries where bicycling is that common. In my course, I think three people out of 24 don't even know how to cycle at all. I think I speak with more confidence here than other international students do."

The interviewee does think that scooters are too dangerous on the cycling lane and should be on the road.

"I hate Scooters, I hate them, really, I don't understand the reason why they are on the bicycle track. I have never read into it, but I don't know. I don't get it. This is the only question I really answered in an extreme way, but I don't like them and they should be on the street. it just...I mean I have never had, a dangerous situation with them. Like almost accident or something like that but they just beep and go with 30 or 35 kilometers next to you. I don't get why you have two plates [blue for slow scooters yellow for faster scooters] but all of them are pimped and drive faster. The electric ones are even worst, they just creep up on you and then beep, they are awful. Let's put them on the road and it will be safer for cyclists and more convenient, and the cars will adjust to them."

The interviewee has not encountered a lot of E-bikes in Groningen but does not feel unsafe when they are on the cycling path.

He also changes his route because of safety concerns but this is not always possible

"Yeah sometimes of course I want to avoid certain intersections or roads mainly mean streets where I go to the like the parallel street or so. Big crossings that are dangerous are often hard to kind of get around because the reason they're dangerous is kind of the number of people at these crossings. they're important crossings where everybody has to cross and there's not really an alternative. So that's why they are still dangerous. I think otherwise nobody would go there, so I don't avoid them."

The interviewee does think that buses can be intimidating for cyclists especially when a bus drives close behind. Buses can also get really close to cyclists. In most places in the city buses

and cyclists are separated so there is almost no interaction between them. Only in Vinkhuizen, where there are no separated cycling lanes only cycling lanes painted on the road, and on The Grote Markt are buses a real problem. In Vinkhuizen it is not that bad since the roads are really wide, but it still feels that the buses get really close to the cyclists. The city center is, however, a place where buses can be dangerous because there is not much space for buses. Some corners where the bus has limited views so the interviewee is happy that buses will be gone at the Grote Markt in the future.

The interviewee does not think that streets which are shared between cyclists and pedestrians are unsafe however, cyclists should pay attention to the pedestrians.

“It can be a bit busy at those shared streets, but I think these are one of the safest places, I think, because most you really look out for each other like especially for as a bicyclist, you're at the advantage. Sometimes actually the worst part is being a normal pedestrian walking around. I think there the bicyclist should take more care of the people or not drive too fast, especially on scooters. So in general, like shared streets, that's completely fine. Shared space that's the point and that should be like that, but maybe put more restrictions on the speed cyclists are going. Although, this might be hard to regulate. But in general, I'm totally fine with shared streets but, maybe bicycles should take care of it more.”

Interview 12

Date: 18-11-2021

Nationality: German

Study year: 3rd

Faculty: Faculty of spatial sciences

The interviewee grew up in Hamburg, Germany, and did also learn how to cycle in over there. He cycled in Hamburg for both recreational and commuting purposes.

Hamburg does have a similar system as the Dutch OV-bike so the last mile transport is covered. New streets also get a different kind of cycling lane, the older cycling lanes are on the sidewalks while the new ones are on the streets. The interviewee thinks that this can be a bit confusing sometimes when you have to change from the sidewalk to the street but usually is clear where you have to cycle.

The interviewee does feel safe cycling in Hamburg because of the cycling infrastructure, there is not much interaction with car traffic. Cars also give enough space when this is needed, big trucks can be a problem sometimes. He does think that car drivers in Groningen are more relaxed in traffic.

“I feel like the Dutch car drivers are a little more relaxed in traffic. If a German car driver goes to their job, they don't want to interfere with cyclists, but they have to because of the infrastructure. So it's that's then generating some stress for them and they kind of like don't know how to handle it that cyclists ride next to them. So it's becoming a bit of a stressful situation, but not necessarily unsafe, I would say.”

The interviewee does think that the infrastructure in Groningen makes Groningen a safer place to cycle in than Hamburg

The interviewee did see an accident happening in Groningen

“like the only accident I've ever seen was actually when I followed the girl from like the Ebbingekwarier on the wrong lane on like on the way to the Noorderplantsoen. Got on the wrong side of the road, that's something that happens quite frequently in Hamburg but not the case here. But if you do, then it gets dangerous because the whole system doesn't accommodate that. So then yeah, she got knocked out by the car because they couldn't see her and that was quite scary because I was right behind her doing the same wrong thing. I haven't seen any accidents other than that one, but it also then feels very unsafe if you cycle on the wrong side of the road. So that's, a big thing, but usually, here I feel a lot safer actually.”

The interviewee did have a traffic accident himself but there were a couple of people that bumped into the interviewee, he thinks that this is because those people had to get used to the Dutch style of brakes where you turn your pedals backward to brake. The interviewee had to get used to those brakes as well. The interviewee did have a lot of near misses also with cars.

The interviewee did think that his cycling ability was good enough to participate in traffic in Groningen. Most traffic rules were also clear however the shark teeth were new to the interviewee. He does however think they are really useful and he thinks this would be nice to have in Germany as well because it makes it easier to see who has priority. The interviewee did not end up on the highway.

The interviewee does describe that cycling in Groningen can be chaotic. He also had to get used to the SGI's, especially turning left was difficult

“Groningen sometimes reminds me, a little bit of Asia, especially at the simultaneous green intersections. Sometimes when it's, really crowded and everyone goes everywhere it's like an unwritten rule of like cows, but also organized cows that are just. People know the way and whoever is fastest gets their way, and then they take care of each other. Everyone kind of moves the way they want to and then it usually works out. You know it's. Yeah, interesting to see. Sometimes, especially like very crowded. I had to get used to those crossing a little bit. When it is busy then it's interesting like how do you turn left? You just continue turning and then take care of others, they're right in your way, but you just have to be brave to like do it. Eventually, you'll make it anyway. You just wait for everyone but. Then yeah, it's a little bit of courage, you need to have the moment and then just go.”

Groningen can also feel chaotic at other points than at SGI's according to the interviewee

“Sometimes for example, at the A-brug It can get really crowded in front of the bridge. Then obviously you have less of the space to accommodate all those cyclists, and it's like, yeah, a bit crowded there. So as soon as it gets busy, then it can be chaotic, but not necessarily bad. You can feel more endangered as a pedestrian sometimes than on the bicycle. You still find your way on a bike, as a pedestrian you might feel out of place there.”

The interviewee does think that scooters and E-bikes can be unsafe because of the speed difference between them

“So then I feel kind of safe, but I also I don't know like recently I also thought about E-bikes and stuff like that They're faster and there's a big advantage to them. But I think it does make it more unsafe if you over the average speed of the cyclist 'cause it's like you're not used to it. Once people would be used to it and like everyone would have a scooter or E-bike then the speeds are similar, but for now it's really like there's suddenly the faster vehicles, so they can do overtaking and that's really nice because there's usually like enough space for overtaking. There's always enough space for three people on the cycling lane so that's something that's really well thought out, but you can like still

with a very crowded so if the paths would be a little bit wider this could prevent accidents.”

The interviewee does not change his route because of safety concerns since he thinks there is not really anything to avoid in Groningen. He also wants to add that the cultural aspect of cycling in Groningen also makes it safer

“Yeah, I would say you can maybe add a cultural aspect to that. So it's really like you grow up with the bicycle. Everyone here does, and so people really are used to it from such an early age that you really don't have any problems. It's like your second nature kind of thing. You just do it, and you are used to it so much that there are hardly any accidents or anything happening. It's easy as well, like. It's not as bumpy or anything. There's no problem associated with so, and people use. In Hamburg, that's a bit different. If people start working and stuff they rather go for a car and then there's always that discrepancy between cyclists and drivers.”

The interviewee also thinks that it would be useful if extra information is provided for international students. Especially non-European students might benefit from this he thinks.

Interview 13

Date: 11-11-2021

Nationality: Romanian

Study year: 1st

Faculty: Faculty of science and engineering

The interviewee did grow up in Romania and did learn how to cycle there. Cycling is mostly a recreational activity or children use it to cycle to school.

“It's mostly sports or recreational, and some kids/teenagers that are trying to get to school. In my case, it was quite hard to get to school. I either had to cycle on a pedestrian sidewalk, which was relatively narrow, and whenever there was anyone else I just had to get off and walk around them or something like that, or I'll have to cycle on the road. And again, then everyone would just honk at me or just swear at me. They just wanted me out of their way. I was slowing them down, I was an obstacle, just get out of the way. It didn't particularly want me to be on the road. I didn't have a specific bike path and the other option was going through a forest, which didn't work whenever it was raining.”

The interviewee did think that cycling in Groningen is a lot safer than in Romania.

“Just the simple presence of the bike path already makes it 100 times safer but also the cars react differently towards cyclists. I am more confident and if I think I have to go across the road on my bike, I feel more confident. okay, the car will stop.”

The interviewee does not think he knows the traffic rule that well, it is at a passible level but can still improve.

“I still don't know the rule, or I'm not sure if I know all of them. I didn't exactly find anywhere to read them, or no one pointed me towards them. I have a rough idea of how to go to uni and back. I think I know what I'm meant to do for almost all the intersections. So it's a passible level, but this is I'm still unsure”

The interviewee does not think that cycling in Groningen is chaotic.

“Most of the times I don't think cycling in Groningen is chaotic, or at least most of the times at which I cycle, but it's relatively clear and you've got plenty of space. It's only really chaotic close to the university, right when a lecture ends, or one is about to begin and all people are trying to get there, or there's an exam and there's like 100 bikes trying to get to the exam hall and there's a mess. I have a picture on my phone of there being bike traffic jams across the road. So at those times, it's a bit chaotic, but because it tends to be next to the university and most of the paths, there are relatively safe, but there's not much overlap with traffic. That's fine, you can just slow down. And you'll be fine.”

The interviewee still has to get used to the intersections in Groningen, also to the SGI's.

“It's the ones where there's a sign with 4 green arrows that says something?. Yeah, I think I have two of them on my way to uni. I just always crossed one Direction. Stop there, turned around, and then wait for it before the other way to be clear. If it's empty and there are no cars, I will go there early, but whenever there's a car I just it's in my habit now to take it slow and make sure that there is no chance I'm getting hit by that car. I am always surprised when the car stops and was like you go. I am like what? no, you, you're the big one. But maybe this is not an SGI I'm not sure. There's one intersection where cars are going up and cutting across the bike path. I tend to just let all of them pass but sometimes they stop and tell me to pass and those times I'm just not ready for that. I'm usually just waiting it out.”

The interviewee did not have any accidents in Groningen but he did have some almost accidents. This was before he knew any of the rules. After a near-miss with a car, he started to look into the rule because he never wanted to get so close to a car again. He did not end up at the highway. He also thinks it is good if the university provides new students with information about cycling in Groningen.

“t would be very nice if the university provided extra information, just hey look, here's a quick bicycling guide. Just read over this and understand the rules, and then you're good.”

The interviewee did also had to get used to the different types of bicycles he used in Groningen and that this also impacted his cycling skill level. He still thinks that he struggled more with the rules than with this cycling skill level.

“I was also getting used to a different type of bike. in Romania there are no city bikes everything has brakes on the handles. Everything is meant to be light and is meant to be a sports bike, it's out for hobbies. I wasn't used to the different weights of the bike and the different way the pedals worked because you break by turning the pedals back here, sometimes it's a bit harder to get going with the Dutch style of bicycle. But I struggled more on the knowledge side of cycling than on the practical skill side, I think.”

The interviewee does not mind scooters on the bicycle lane since they are loud, he did also not encounter a lot of electric scooters. He does keep in mind that a scooter can overtake him by cycling as far right as possible.

“I mean I've gotten used to scooters so at this point I just always stay on the right side of the bike lane so they can always pass me on the left side and I don't have to deal with it. I also always check whenever I have to go and pass someone so I see them behind me anyway, so I don't tend to get spooked by them. The only times I feel like they can be a problem is when they somehow creep up on me, like I could be a little distracted, and all of a sudden one of them passes. But you're going slower, you need to cycle on the right

side of the cycling path and you will mostly be fine with them. Yeah, there is just the occasional jump scare.”

The interviewee does not change his cycling route because of safety concerns, he feels that most intersections are safe enough. He does try to avoid traffic lights because he does not like to wait for them.

He also thinks that cycling might be safer in Groningen because there are a lot fewer cars than in Romania.

Interview 14

Date: 30-11-2021

Grew up in Switzerland

Study year: 1st

Faculty: Faculty of spatial sciences

Translated from dutch

The interviewee was raised in Switzerland and also learned how to cycle over there. He did not cycle a lot in Switzerland due to the mountains and steep climbs. But small commutes were on the bicycle. He also cycled a little bit for recreational purposes but used the bike more for commuting.

Most people in Switzerland use the cycle for recreational purposes. There were also no cycling lanes in the area where the interviewee lived so cyclists had to cycle on the road or the sidewalk.

Cars in Switzerland are not so keen on cyclists because usually people cycle in big groups (for spots for example) so it is hard to overtake these groups.

He does think that cycling in Groningen is safer than in Switzerland mainly because of the infrastructure.

“There are more cycling paths in Groningen than in the whole country of Switzerland I think, there are also more cyclists in Groningen so cars are more aware of cyclists than in Switzerland”

The interviewee does however feel that swish car drivers behave safer toward cyclists than dutch car drivers do.

“I feel safer wich swish car driver because dutch car driver overtakes very close to me, Mabey it feels closer because I’m not used to it yet”

The interviewee did feel that his cycling skill level was good enough to cycle in Groningen and he did feel that he knew enough about the traffic rules. Although he did admit that he does not know all the rules by heart. He also thinks that it would be useful if extra information was provided about the traffic rule for international students.

The interviewee did not have any traffic accidents and he also does not think that cycling in Groningen is chaotic. Pedestrians do pay enough attention to cyclists and the other cyclists are also no problem for the interviewee. He does mention that he had to get used to the SGI's but after a couple of days this was also not a problem anymore. He also had to get used to scooters on the cycling paths because in Switzerland they are only allowed on the roads. But also after getting used to the scooter this was no parable anymore.

Safety also does not have an impact on the route the interviewee takes because he feels that there are no unsafe spots in the city of Groningen. He does however feel slightly unsafe if a bus is driving closely behind him but otherwise he is fine with buses.

Interview 15

Date: 18-11-2021

Nationality: Spanish

Study year: 2nd

Faculty: Hanze school of Business, Marketing & Finance

The interviewee is from Spain and did learn how to cycle in Spain. He cycles in Spain mainly for recreational purposes. The cycling culture in Spain is different due to the infrastructure.

“Well, obviously in Spain the bicycle is used for both commuting and recreational purposes, but mostly it's very weird to see people cycling to work or something or to go to the supermarket or something like they do here in The Netherlands because in Spain it is really difficult to find the bike paths. Here is everything connected. You go out of the city, and even if you're in the middle of nowhere, you have a cycling path bike and in Spain only in the big cities such as Barcelona, Madrid, Valencia and still it is chaos like the cars don't treat you the same and everything like here. I mean you have bike paths and stuff in Spain because all the people use them in Spain but they use it more for electric scooters (steps) here they use more the electric motorbikes but in Spain, The electric scooters (steps) go in the same path of the bikes and the motorbikes that are not very fast. The cycling lanes are however way crazier than here.”

The interviewee did think that cycling in Groningen is safer but can feel a bit chaotic in the beginning.

“Yes, cycling in Groningen is safer than in Spain. I mean it's a bit more chaotic due to all the cyclists especially if you are new you can find it chaotic because there are bikes everywhere and you have to get used to sharing the road with all the other bikes surrounding you. At least I had to get used to it, But it's not that hard like I've always been used to using the bike, I feel I've used the bike a lot and I don't know. It's just like everything practice. But I think the infrastructure is a lot better. Like the layout of the paths and everything. You have here, It's way better than Spain it's pretty straightforward.”

The interviewee does not feel unsafe because of other cyclists on the road. He does mention that if people do not pay attention to the road this could lead to potential accidents. A lack of knowledge of the rules or a lack of cycling skills can also lead to accidents according to the interviewee.

The interviewee did not know all the traffic rules before coming to the Netherlands but does feel like he knows them now. He does think that working at Thuisbezorgt did help him to get to know all the rules. The interviewee did experience some traffic accidents on the bicycle and also ended up on the highway several times.

“I had a lot of accidents but it is normal. I remember that first year I had a lot of accidents because I was still struggling a bit getting used to the bike and everything. After all, the bike is different over here. And also it might be slippery because it's raining or you know when there are leaves on the road. Sometimes I'm looking at the phone or something I know it's not allowed, Or not paying attention and I sleep or something, but yeah, nothing serious.”

The interviewee did feel more confident now on a bicycle than he did when he first arrived in the Netherlands. He also thinks that the green on all-direction intersection can be annoying on an e-bike.

“Yeah, when there are a lot of people at those intersections it can be annoying, there are some intersections in Groningen, I don't remember exactly the names of the streets, but I know where it is and there are some like close to the station. Those bridges usually are full of people and cars and if you are not one of the first at the traffic light is a bit annoying because you always have to let everyone pass, and then it is already red before you have crossed. What I usually do now is because I'm with the E-bike, uh, I go to the front line so I'm one of the first and I avoid this problem. I mean for me I think it's a nice idea [The SGI's]. It's just depending on where you cross and the direction and everything, some people go earlier than others because they're closer to the end of the intersection.”

The interviewee does also think that car drivers in Groningen behave a lot safer towards cyclists than the car drivers in Spain do.

“Car drivers in Spain behave, really badly towards cyclists compared to here. Like in general it's not like here. It kinda amazes me even when my friends from Spain come here. The first time they came, they were with the bike and they were like oh I notice the bikes have always been a priority, you know. The cars, even stop when they go fast, or slow down. It doesn't even matter if it's a motorbike or a car, they always stop here and let the bike pass. In Spain, for example, is like the drivers get annoyed they start using the claxon on and insulting you. They hate the people that use a bicycle in Spain. Especially the ones that go with their bikes or motorbikes in the middle of the road. Cyclists are usually quite bad at handling the vehicle. So drivers know and that's why they hate them.”

The interviewee did think that busses can be annoying in Groningen especially the long buses. They are not dangerous but they behave a little bit less nice towards cyclists as cars do. He also doesn't mind pedestrians.

“I mean, usually the intercity where pedestrians and cyclists share the road is not very crowded and still it's a place that people know that bikes are coming by, so they're conscious. Some international students or other people that are not used to this, sometimes stay like in the middle of the road, but people that live here know at all times

that a bike or a motorbike can pass next to them, so they moved and there's no problem. So I think It's fine.”

Safety does not have an impact on the route the interviewee chooses. Scooters are annoying according to the interviewee.

“I think Scooters are very annoying because usually people that drive them, pass fast compared to what people are usually going when they are cycling. People usually go with the bike at 15/20 km/h more or less but the scooter sometimes overtakes next to you at 50 or 60 km/h and it gets close. I had accidents with people on scooters because they're all the time going fast. And they don't want to stop. So once a guy came, and instead of passing through the left, he passed through the right. Of course, I was like: what are you doing? He cut me off and I fell. It's always the same, They pass super fast. I had a lot of close calls with scooters as well. The electrical scooters are even worse because you can't hear them.