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Parental Perceptions on Freedom of Mobility and Their Children's Participation in Groningen's Community

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Faculty of Spatial Sciences, University of Groningen
Muriel Schwarze (S4739515)

Supervised by Ö. Ataol
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ABSTRACT

Parents are responsible for their children and influence their development by setting rules based on individual judgements. Also, their experience with mobility affects school-aged children's movement between places and their possibilities to participate in the community. This paper aimed to analyze parents' perceptions of mobility and suggestions for enhancements in Groningen, the Netherlands. Twelve semi-structured interviews provided an in-depth understanding of the topic and added to the existing quantitative results of previous research. By analyzing the transportation network and road design, accessibility, and traffic safety, it stood out that parents were mostly concerned about specific road characteristics and other traffic participants. Since they mainly used active modes of transport, they proposed linked ideas such as a decreased distance to activities, separated bicycle paths, and restrictions on motorized vehicles. This might reduce children's dependence on their parents and their mobility restrictions, and increase their community participation. Planners and policymakers should consider these suggestions in their designs to create places that complement children's needs. Accordingly, this strengthens their development, their role as a citizen, and aligns with the UN Convention of the Right of the Child (1989).

Key Words: Mobility, Community Participation, Parental Perceptions, School-Aged Children

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1. INTRODUCTION

The UN Convention on the Right of the Child focuses on rights for children as human beings. Next to many important articles, it states that “[i]n all actions concerning children, [...] the best interests of the child shall be a primary consideration” (United Nations, 1989, p.4). Nonetheless, children are often overseen and disregarded within our society. This is not only true for the design of the built environment and urban settings but also for their opportunities to participate in and contribute to the community (Ataol et al., 2019).

Repeatedly, planners and policy makers do not consider children’s needs within their plans. Designs based on an adult perspective force children to visit places that do not meet their exigencies (Ataol et al., 2019). Unsafe and discouraging urban environments, such as road infrastructure or neighborhood layouts, combined with high traffic volume and speed increase children’s vulnerability (Amiour et al., 2022; Hanzl, 2023). This results in a limited use of and interaction with public spaces, as accessibility for children is not fully provided (Li et al., 2022). Thus, a better design of the urban environment is desired to increase their community engagement (Biggs & Carr, 2015).

Within a community, children can have many roles, such as family member, student, team member, neighbor, or any other role within a group of shared traits and a feeling of commitment (Lúcio & l’Anson, 2015). Children’s usage of the urban space and the social interactions within the community are the foundation of a healthy development and human capital (Goldfeld et al., 2021). Waygood and Friman (2015) stated that communities increase children’s social skills due to greater interaction which leads to improved well-being, safety, and a sense of belonging.

1.1. Research Problem

However, not only planners and policymakers influence children’s rights in the urban environment and thus their social participation, also parents and their perceptions of public places do (Amiour et al., 2022; Smith et al., 2019).

Parents have many responsibilities and play a central role in the development of children by setting rules. Especially, for children up to the age of twelve years, parents’ fear overshadows children’s opportunities for community participation and leads to further social restrictions (Ataol et al., 2019; Rezaei et al., 2022). The group of school-age children (6-11) is particularly interesting, as younger children (0-5) are usually supervised by caregivers, whereas older ones (12<) are mostly independent. School-aged children are neither entirely supervised, nor autonomous and therefore the focus of this research (Ataol et al., 2019).

Previous research has already investigated the relationship of parents’ opinions of the built environment and their children’s behavior responses. Notably, they focus on parental perceptions of children’s mobility in relation to the development of children’s (physical) health (Carver et al., 2008, Weir et al., 2006). However, the correlated findings are mainly based on quantitative data and conclude the need for safer travel possibilities (Smith et al., 2019). Furthermore, movement is necessary to participate in

and between social activities (Meurs & Haaijer, 2001). Combined with well-designed urban areas, children can move freely, which facilitates community interaction through the opportunity to meet and play, or attend cultural events (Hanzl, 2013; Riggio, 2002).

Policy plans of the municipality of Groningen, the Netherlands, strive for such “an inclusive public space” (Municipality of Groningen, 2021, p.8) with equal participation opportunities and improved well-being for all citizens (Liang et al., 2022). In addition, the city continuously revises these plans to maintain its status of the healthiest city in the Netherlands (Gemeente Groningen, n.d.). Therefore, Groningen can serve as a role model for other Dutch cities. Moreover, safe places for children are explicitly mentioned in the policy document (Municipality of Groningen, 2021). Yet, the increased number of traffic accidents in the city requires mobility improvements (Statistics Netherlands, 2023).

By exploring parents’ perceptions on the freedom of mobility and the impacts on their children’s community participation through semi-structured interviews, an advanced perspective will be provided. This research can help identify measurements to increase school-aged children’s community engagement, which ultimately benefits their health and aligns with the UN Convention on the Rights of the Child (United Nations, 1989).

To investigate parental viewpoints, the following research question with sub questions have been formulated:

Research Question:

How do parents’ perceptions of freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?

Sub-Questions:

How do parents perceive their children’s freedom of mobility?

How are children allowed to participate in the community?

How do parents perceive enhanced mobility to further enable participation in the community for their children?

Having introduced the research problem and questions, the theoretical framework (2) provides the relevant background information of the associated concepts. The correlated data collection and analysis are presented in the methodology (3) and followed by the findings (4). The latter discusses parents’ critiques and suggestions regarding the freedom of mobility and their effects on their children’s community participation. Ultimately, a summary of this research can be found in the conclusion (5).

2. THEORETICAL FRAMEWORK

The theoretical framework is based on literature and analyzes components that determine children's freedom of mobility. These concepts are evaluated through parental perceptions, which influence school-aged children's community participation.

Public places provide two main activities. Firstly, they facilitate movement and transportation. Secondly, they are the source of community formation resulting from interaction and social activities of all age groups (Biggs & Carr, 2015; Hanzl, 2013). Li et al. (2022) state that an optimal public place is accessible to everyone and enables diverse activities supporting the community. A community refers to groups of people who interact, share characteristics, and feel connected to each other within a geographic proximity (Cobigo et al., 2016). These connections are built with family members, friends, neighbors, and members of organizations, like sports clubs or schools (Lúcio & l'Anson, 2015; Walsh, 2020).

In addition, the community attachment is increased by the size of the area that children may access independently through free travel and play (Weir, 2023). The gain of experiences contributes to the formation of a child's identity and benefits the spatial, social, and cognitive development (Kaur & Singh, 2022; Smith et al., 2019; Walsh, 2020).

2.1. Freedom of Mobility

From a spatial perspective, mobility refers to the movement between geographically dispersed activities and the desire to participate in them. It is defined by the trip's purpose, the prevalence, and the chosen transport mode (Lukic et al., 2019; Meurs & Haaijer, 2001). Furthermore, in this research, the concept of mobility is analyzed through the three following concepts: transportation networks and road design, accessibility, and traffic safety.

2.1.1. Transportation Network and Road Design

Spatial characteristics determine the chosen mode of transport and its related network (Guillermo et al., 2022). This may consist of different road types or railways which serve as *links*, and crossings or stations representing *nodes* (Boyles et al., 2019). As the network evolves, the routes become shorter, resulting in improved connectivity (Lin et al., 2017). Additionally, a place's mobility options increase when a multimodal network is provided, as the combination of different modes enables cooperation (Guillermo et al., 2022).

Furthermore, Comendador et al. (2014) investigate that density affects transportation networks. They conclude that places with high density encourage active modes and the use of public transportation. Meanwhile, dense places with efficient networks promote social interaction (Christian et al., 2015).

However, the design of roads, as links, also affects the traveler's movement. Blumentrath and Tveit (2014) emphasize that aspects related to visibility, guidance,

and road alignment according to scale need to be addressed to create a positive experience for users.

Regarding children, transportation networks must focus on walking and cycling to promote children's health and independence (Dessing et al., 2016; Holmes, 1995; Smith et al., 2019; Weir et al., 2006). Additionally, they must match children's needs. Dessing et al. (2016) investigate that children often take the more pleasant route instead of the shortest one. These routes pass through well-connected residential areas with indicated crossings, separated cycling infrastructure, traffic lights and sidewalks, all of which increase visibility (Dessing et al., 2016; Smith et al., 2019).

After all, transportation networks and road designs serve as support for independent mobility and a positive experience for children.

2.1.2. Accessibility

Mobility is defined through accessibility, as travel decisions are dependent on available amenities and their attractiveness (Wolday, 2022). Having access to services and activities within the community supports social interaction and improves subjective well-being (Whitham, 2012).

The spatial dispersion of these activities affects their accessibility. Therefore, more concentrated facilities are favored (Eldér, 2022; Wolday, 2022). According to Meurs and Haaijer (2001), additional indicators are travel time, cost, and comfort. These are weighed against each other to select the most convenient transport mode. Nonetheless, not everyone has equal opportunities to access community services as physical, mental, and economic circumstances differ (Zegras, 2005).

Access to desired activities, such as school, hobbies, or outdoor play, strengthens children's sense of autonomy (Amerijckx & Humblet, 2015; Lúcio & l'Anson, 2015). However, children's participation possibilities vary because of household compositions, parental employment status, high fees, children's health profiles, or geographical distribution (Amerijckx & Humblet, 2015).

Free movement is affected by the level of accessibility available. Therefore, it is important to understand what accessibility is desired and how it is provided to explain individual mobility patterns.

2.1.3. Traffic Safety

Safe movement is assessed through objective and subjective traffic safety. Objective safety refers to the actual number of traffic accidents, injuries, or deaths (Sørensen & Mosslemi, 2009). Especially, active modes of transport increase the exposure of vulnerable road users in comparison to motorized vehicles (Amiour et al., 2022).

Subjective traffic safety is based on experiences and feelings, and therefore grounded in individual elements and attitudes (Sørensen & Mosslemi, 2009). Usually, these are dependent on a particular mode of transport and the associated traffic role (Bhagat-Conway et al., 2022). Knowledge of traffic rules, individual safety equipment, and one's

skills contribute to the perception and the use of the vehicle (Muñoz et al., 2013; Vissers et al., 2016). Consequently, high traffic speed and volume, intersections, and other road users are linked to negative effects on subjective traffic safety, whereas speed-reducing measurements, one-ways streets, or separated lanes have positive associations (Amiour et al., 2022; Sørensen & Mosslemi, 2009).

Unsafe road environments, including high traffic volumes and speeds, reduce children's traffic safety, their mobility, and ultimately their community participation (Amiour et al., 2022; Carver et al., 2008; Smith et al., 2019). Contrarily, the Dutch "*woonerf*" is exemplary for increased safety by incorporating traffic calming measures. Pedestrians, cyclists, and cars sharing the place, results in fewer injuries for children (Carver et al., 2008).

Overall, the interplay of neighborhood characteristics, road design, and road use determines objective and subjective traffic safety and the related freedom of mobility.

2.2. Parental Perception

Especially for children, community participation brings benefits. However, it's access can be difficult (Lúcio & l'Anson, 2015). Parents play a crucial role in this, because of their responsibility for their children (Rezaei et al., 2022). The way parents move in the neighborhood or feel about the community determines children's mobility and exploration of public places (Ataol et al., 2023; Hendriati & Okvitawanli, 2019; Kaur & Singh, 2022; Waggood & Friman, 2015).

According to Meurs and Haaijer (2001), personal characteristics influence mobility and presumably the perception of it. Household compositions, employment status, income, or car ownership may impact people's lifestyles. Likewise, parents have diverse opinions on the built environment and parenting style. Moreover, Lam (2001) and Rezaei et al. (2022) identify additional factors, representing the child's age and gender, the parent's gender, the living situation, or experience with accidents.

Parent's perceptions are shaped by the quality of infrastructure, as well as the distance to and attractiveness of activities (Bruner et al., 2023; Lin et al., 2017; Smith et al., 2019). Following Amiour et al. (2022), parents are mainly concerned with traffic safety and the use of active transportation, wherefore, they ask for traffic calming measures.

A deeper understanding of parents' perceptions and their motives helps to understand children's movement.

2.3. Conceptual Model

This research aims to understand school-aged children's possibilities to participate in the community based on their freedom of mobility and is analyzed from a parental perspective.

The literature review describes the relationship whereby mobility is examined empirically and defined through the above-mentioned concepts. Firstly, the community is more accessible when the transportation network and road design are well

developed. Additionally, their quality determines traffic safety, which affects a place's accessibility. Ultimately, children's freedom of mobility, based on their parents' perceptions, influences their community participation. These relationships are presented in the conceptual model (Figure 1).

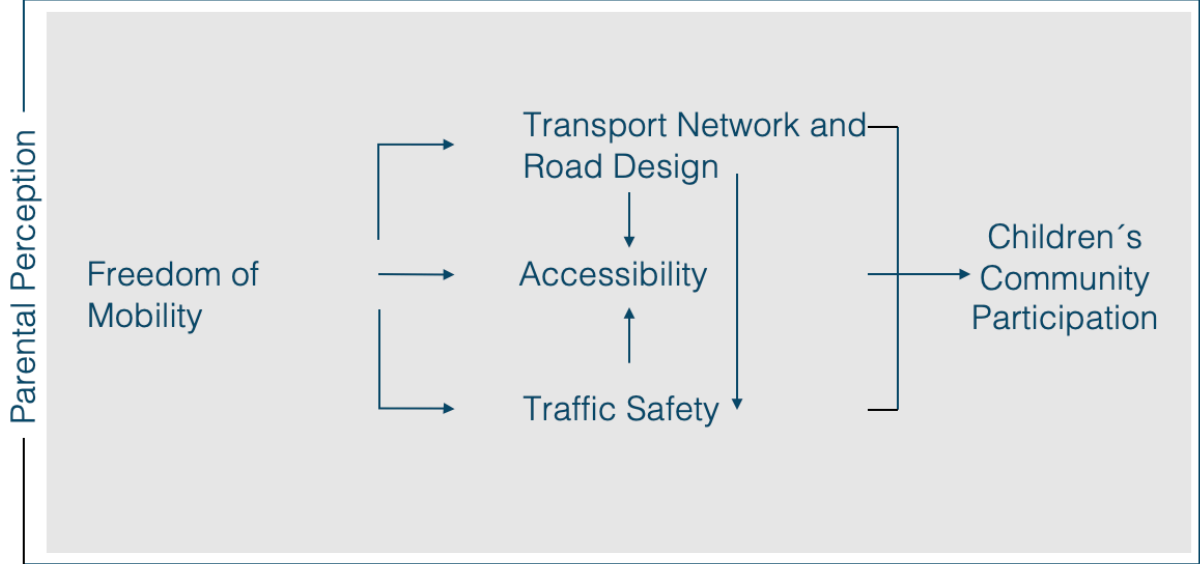


Figure 1 Conceptual Model (made by author)

2.4. Expectations

It is expected that the conceptual model, together with the theoretical framework, helps to analyze the research question in a structured way by evaluating each component individually and in relation to another.

3. METHODOLOGY

3.1 Research Design

The literature review provided a deeper understanding of school-aged children's freedom of mobility and their participation in the community. Nevertheless, previous research increasingly used quantitative methods. To fill the research gap, detailed insight was strengthened using a qualitative approach. Semi-structured interviews added to the quantitative results and gave parents the opportunity to provide their perception regarding their children's possibilities in the community. This deductive approach aimed to analyze, compare, and build upon the literature's findings. Besides answering the interview questions, the semi-structured design left room for further explorations of additional aspects, supporting an inductive follow-up. The collected responses as primary data and this qualitative exploratory research design directed the three sub-questions and, ultimately, the research question.

3.2 Participant Recruitment

Parents, participating in the research, provided the relevant perspective on the topic. Their recruitment was based on personal contact due to convenience. Participants were contacted through a document that included information about the research and contact details (Appendix 1). It was shared at the researcher's sports school and sent digitally to parents with whom the researcher had a personal relationship. Furthermore, parents themselves forwarded the form. However, a screening was necessary as the research focused on school-aged children (6-11years) in Groningen, which correspondingly reflected the only two participation requirements. After agreeing on the participation of this research, individual meetings were scheduled.

3.3 Participant Profile

Twelve interviews were conducted (Table 1), which were equally divided in six male and female participants. All parents were employed and owned a car themselves or shared it with the other parent. Also, all households included more than one child and were defined by a single parent or both parents living together with the children.

The children's ages differed between four and twelve years old. Information on children that fell outside of the predetermined age group was disregarded, which led to more information being based on female than male children.

#	Gender of Parent	Gender of Child/ren	Age of Child/ren	Car Ownership	Household Composition	Employment Status
11	Female	All Female	4, 6, 8, 10	Yes	Two-Parent Household	Employed
12	Female	Female, Female	7, 9	Yes	One-Parent Household	Employed
13	Male	Male, Male	5, 10	Yes	Two-Parent Household	Employed
14	Female	Male, Female	7, 9	Yes	One-Parent Household	Employed
15	Female	Male, Male	4, 7	Yes	Two-Parent Household	Employed
16	Male	Male, Female	7, 9	Yes	Two-Parent Household	Employed
17	Male	Male, Female	7, 9	Yes	Two-Parent Household	Employed
18	Male	Female, Male	10,12	Yes	Two-Parent Household	Employed
19	Female	Female, Male	10,12	Yes	Two-Parent Household	Employed
110	Male	Male, Female	5, 6	Yes	Two-Parent Household	Employed
111	Female	Male, Female	5, 6	Yes	Two-Parent Household	Employed
112	Male	Female, Male	6, 11	Yes	Two-Parent Household	Employed

Table 1 Participant Profiles (made by author)

3.4. Data Collection Procedure

The participants suggested the time and place for the interviews to ensure a preferred data collection process. After obtaining consent, the interviews were voice recorded in English. This was the favored method to collect and store the data, as it enabled complete use of information, with no data being lost in the process.

The three sub-questions formed sub-categories which allowed for a structured procedure. Next to parents' perceptions of mobility, community participation, and final suggestions for improvement, general characteristics of parent and child were evaluated due to the potential influence on their assessment.

The following section reviews the four sub-categories including a selection of interview questions. These were adapted from previous findings in literature. Additionally, all bundled interview questions and a detailed interview guide can be found in the appendix (Appendix 2, 3).

3.5. Formulation of Interview Questions

3.5.1. Generalities of Parent and Child

Data on general characteristics of the parent or child provided background information on the parent's perceptions of mobility. Personalities, values, and experiences frame the parenting style (Meurs & Haaijer, 2001; Rezaei et al., 2022). Furthermore, questions such as "Do you own a car?" or "What are your experiences with traffic accidents?", specified their habits. Also, the child's age and gender may affect parents' judgements (Rezaei et al., 2022).

3.5.2. Core Question One: Perception on Children's Mobility

The topic was introduced by asking about the basics of mobility. Questions focused on reasons for the child's trips, their frequency, and the transportation mode (Meurs & Haaijer, 2001). Additional literature review showed that children's mobility is impacted by several factors. For this reason, the first core question was subdivided to provide a clearer vision.

3.5.2.1. Transport Network and Road Design

The first concept focused on the available infrastructure and its usage. To analyze the connectivity of children, parents were asked: "How do you perceive the transport network and its quality?", (Lin et al., 2017). Also, it was interesting to know if "the chosen transportation network depends on the distance to the activity [...]?", as the cityscape may influence this (Comendador et al., 2014). Moreover, asking parents about the present road design provides information about their satisfaction (Blumentrath & Tveit, 2014).

3.5.2.2. Accessibility

Questions about activities and their location provided information about the desired accessibility to the community (Wolday, 2022). Parental opinions are usually based on an evaluation of options and shaped by individual factors. Therefore, parents were asked about physical, mental, or economic factors that may affect a child's accessibility (Zegras, 2005).

3.5.2.3. Traffic Safety

In-depth questions about knowledge of traffic rules, individual equipment, and vehicle operation skills assessed the child's attributes which influenced parental opinions of road safety (Amiour et al., 2022; Muñoz et al., 2013; Vissers et al., 2016). In addition, evaluated external components considered the transport mode, traffic speed and volume, and road preferences (Amiour et al., 2022; Sørensen & Mosslemi, 2009).

3.5.3. Core Question Two: Children's Community Participation

As public places facilitate movement and social interaction, it was important to gather information on how this was reflected in children's community participation (Hanzl, 2023). Questions such as "What types of activities does your child/do your children go to?" collected data on social engagement. Children's participation in the community depends on the activity itself and the mobility options (Rezaei et al., 2022). Thus, questions regarding travel patterns assessed children's use of public places.

3.5.4. Core Question Three: Enhanced Mobility

Finally, asking parents about suggestions for improved mobility may lead to enhanced community participation for children. Additionally collected data can assist policymakers and planners improve children's possibilities (Rezaei et al., 2022).

3.6. Data Analysis

The semi-structured interviews provided the necessary information to investigate the above-mentioned relationships. These lasted on average 24:46 min. and were conducted until a saturation point was reached and no new information was added (Table 2). Accordingly, the interviews were transcribed and analyzed after another (Appendix 4). ATLAS.ti helped by applying codes and subcodes that were based on the theoretical framework and matched the interview questions. This deductive start was followed by an inductive approach, which resulted in additional codes based on the interviews. The data coding scheme visualizes the coding analysis and assisted in evaluating the three sub-questions (Figure 2). All reported findings were compared to another. Thus, this mixed approach informs about trends that affect children's mobility and community participation from parental perspectives.

#	Date of the Interview	Place	Duration
I1	21.03.2024	Participant's Home	24:13 min
I2	24.03.2024	Forum Groningen	29:11 min
I3	27.03.2024	Forum Groningen	25:25 min
I4	04.04.2024	Online	30:56 min
I5	06.04.2024	Café Zondag	21:30 min
I6	07.04.2024	Participant's Home	26:43 min
I7	09.04.2024	Participant's Home	15:29 min
I8	11.04.2024	Participant's Home	30:56 min
I9	11.04.2024	Participant's Home	23:24 min
I10	11.04.2024	Participant's Home	17:41 min
I11	11.04.2024	Participant's Home	17:43 min
I12	17.04.2024	Participant's Work	30:17 min
Average			24:46 min

Table 2 Background Information on Interviews (made by author)

3.7. Limitations

Due to the scope of this research, it came with limitations. Firstly, the participant recruitment was based on a personal network, which may have resulted in a sample lacking in diverse socio-economic characteristics. However, this selection bias was reduced by the emerging snowball sampling. Secondly, data of children who fell outside of the defined age group was disregarded but could have influenced parent's perspectives. Thirdly, the interviews were conducted in English, which was none of the participants native language, still, they all were able to answer the questions or asked for clarifications. Lastly, focusing on freedom of mobility disregarded other factors that might influence children's participation in the community. Nevertheless, the semi-structured setting allowed for an elaboration of issues that are additionally relevant to parents. Knowing about these limitations helped reduce their effects on the data and its collection.

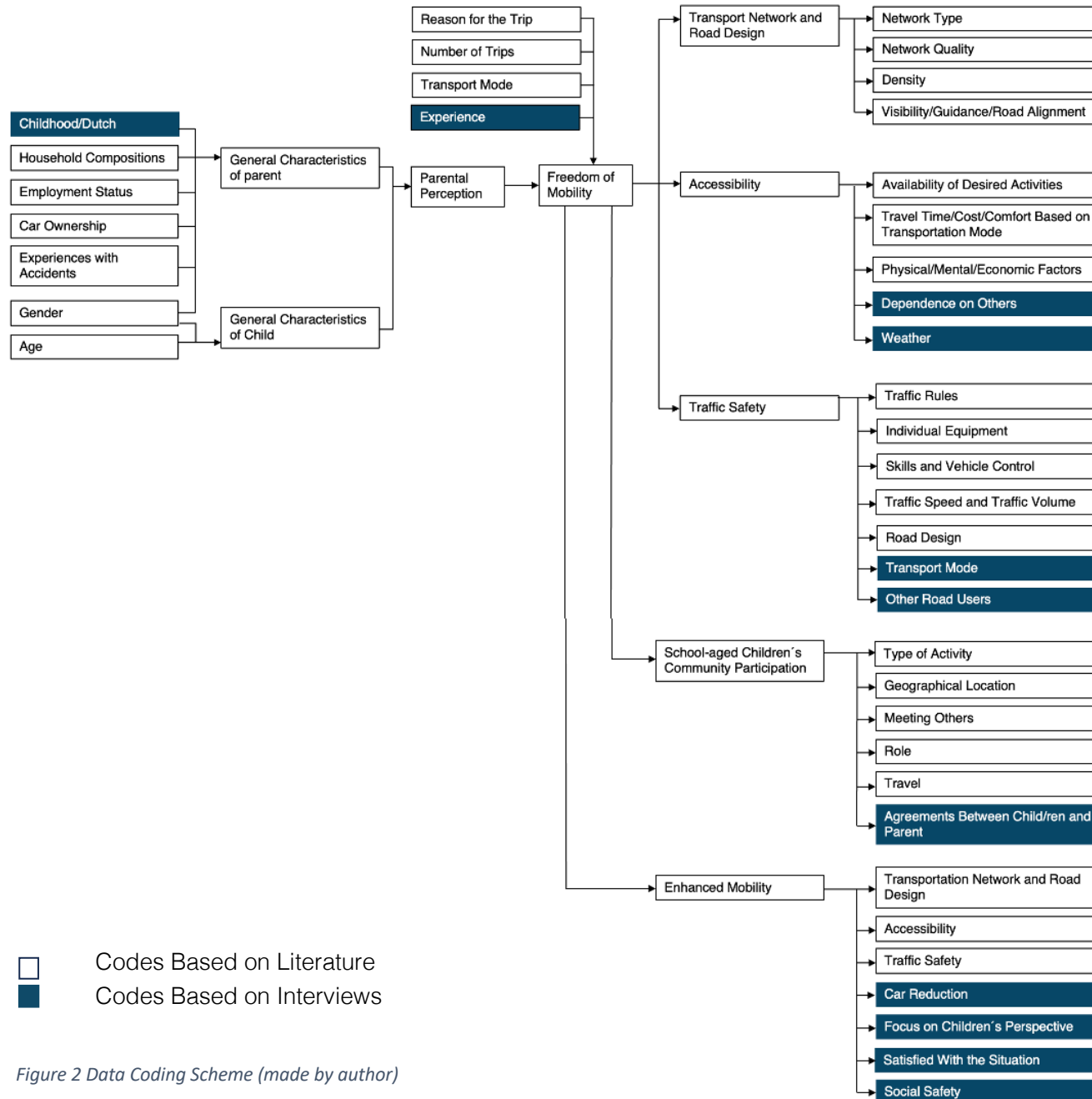


Figure 2 Data Coding Scheme (made by author)

3.8. Research Ethics

Before starting the voice recordings, an “Agreement to participate” (Appendix 5) by the Research Ethics Committee of the Faculty of Spatial Science (University of Groningen) was signed by the participants. Furthermore, they were informed of the voluntary purpose of this research, and the possibility to withdraw at any time. The participants and their answers were treated anonymously (stored and analyzed). Together, this allowed the use of summarized data or direct quoting. The collected data was saved until the end of the Bachelor project and deleted afterwards. Upon request of the University of Groningen, it might be shared anonymously to comply with the open data requirements.

Moreover, the researcher behaved in a professional, unbiased way to follow the ethical guidelines. Also, the researcher did not interrupt the participant during the interview, however, guided the participant in the direction of this research and, ultimately, selected relevant information for the analysis.

4. FINDINGS

The results are structured based on the three sub-questions and the corresponding sub-categories. Additionally, the data is simultaneously discussed and compared to findings of reviewed literature.

4.1. Generalities

Background information of the participants informed about the parenting style and the effects on children's freedom of mobility.

Although Lam (2001) claimed that men identify traffic as less hazardous than women, parent's gender did not influence children's freedom of mobility, as the data provided did not differ. Yet, traffic accidents may have affected their risk perception (Rezaei et al., 2022). However, only two parents reported experiences with traffic accidents (I4, I12), including one of them changing her mobility pattern by 20 years of no driving (I4). Moreover, within this sample, all parents were employed which could explain the absence of economic constraints but potentially caused a lower alertness of risk situations, as they spent less time observing their children in traffic (Lam, 2001).

Since most parents lived in a two-parent household, they often shared the car with the other parent. Alternatively, they owned one themselves. Assumingly, parents shared a positive attitude towards the car, especially when longer distances to activities needed to be covered. Car ownership results from geographical dispersion of activities and spatial features of the neighborhood (Meurs & Haaijer, 2001).

Looking at the characteristics of the children, no gender-based differences could be identified because parents set the same rules regarding children's freedom of mobility. Therefore, it is assumed that this represents the general Dutch parenting style. It contradicts the results of an Iranian study, which states that boys travel more freely and accordingly have a greater risk perception (Rezaei et al., 2022). The contextual and cultural differences between the two countries suggest a variation in parenting styles. Moreover, it stood out that when a child's age was close to the two adjacent age groups, the freedom of mobility resembled that group. Meaning that six-year-old children were more restricted, whereas eleven-year-old children experienced more travel possibilities which may follow risk perception skills that evolve with age (Lam, 2001).

"They are five and six years old. When they are a bit older, we can give them more space." (I10)

4.2. Freedom of Mobility

Children's reasons for traveling kept them mobile and included attending school or extra-curricular activities. However, they also visited their family, met up with friends or attended obligatory events, like doctor's appointments (I1-I12). The average prevalence of their trips could be summarized by following quote:

"School is daily, and sports is about two or three times a week." (I9)

For their trips, all children predominantly used active modes of transport, which strengthens their physical health (Dessing et al., 2016). They used the bicycle either by themselves or by being transported by their parents (I1-I12), or they walked (I1-I3,I6-I11). The car is also used by every parent, although to a lesser extent, which was indicated by the word “sometimes” (I1-I2,I7,I12) and results from contextual factors that promote active modes of transport (Dessing et al., 2016). In other contexts, such as Auckland (New Zealand) and New York City (USA), the opposite can be observed, meaning that children’s active movement is reduced (Lin et al., 2017; Weir et al., 2006). The reason behind this are longer distances to school or neighborhood crime but could also be due to a lack of cycling and walking routes compared to the Netherlands (Dessing et al. 2016; Lin et al., 2017; Weir et al., 2006). Additionally, some parents together with their children used public transportation within the city (I2,I4-I6,I10).

“Walking, bike, sitting on the back of the bike and car and sometimes, but not that often, we use the bus or train.” (I6)

4.2.1. Transportation Network and Road Design

In line with Holmes (1995), children used a variety of road types as they are dependent on a multimodal transportation network, which was rated as overall good by parents (I1-I12):

“I would say for cars, bicycle and walking, the Netherlands is above average.” (I8)

Accordingly, parents felt connected within Groningen, however, mentioned critiques regarding specific locations on their routes or other road users they encountered. These comments addressed safety, which was reduced at crossings, resulted from the busyness on the street, or was decreased by motorized vehicles including cars, electric bicycles, and scooters (I1-I3,I7,I9,I11,I12). Therefore, parents chose neighborhood areas over the main streets (I1-I3,I7-I9), which aligns with the quantitative data presented by Dessing et al., (2016):

“I don’t take the fastest way because that’s a busy way. There is a lot of bicycles there, but we do a bit of a round around and then it’s okay.” (I3)

Furthermore, because parents were familiar with the roads, they reported that they were acceptable concerning visibility, guidance, and road alignment (I2-I12). But, visibility was reduced at intersections (I1,I3,I5,I7). This may be explained by Blumentrath and Tveit (2014) who summarize that a clear design for an attractive road has not been identified because of surroundings that shape the context of the road type.

“Well, there are some difficult spots in the city. Like this crossroad is difficult and other crossroads sometimes. In general it is quite good visible, and I know what to do.” (I7)

Also, the distance to the activities determined the route choice and related mode. Parents preferred to walk or cycle to activities close by, while taking the bus or car when the distance increased. This threshold was usually defined by the number of kilometers or minutes between one’s location and the activity (I4-I11). It results from

high densities that promote active modes of transport and discourage car use (Comendador et al., 2014).

4.2.2. Accessibility

However, children were not allowed to go alone and, only in theory, had access to all desired activities (I1-I2, I4-I5, I8-I12). They were dependent on their parents, their time schedules, and the overall feasibility.

“Yes, they have all access, but I don’t have the time, that’s something else.” (I4)

“My son goes on Wednesdays and Fridays, so she [my daughter] could not go on Wednesdays and Fridays.” (I9)

Amerijckx and Humblet (2015) summarized these barriers as the result of services that overlap between the children or take place during working hours. Furthermore, longer distances did not affect children’s accessibility to activities but determined the optimal mode of transport for the trip. Next to the distance to activities, parents additionally considered weather conditions (I2-I6, I8-I12), and examined less travel time, cost, and comfort, as suggested by Meurs and Haaijer (2001).

“If the weather is bad, we take the car or if it is far away, we take the car, but otherwise I really like to take the bike.” (I5)

Moreover, many parents favored the bicycle because of environmental and health benefits (I2-I6, I12). This aligns with the utility-based measures of accessibility, which include individual values and preferences that strengthen cycling (Muñoz et al., 2013; Zegras, 2005). Also, the children cycled as they did not experience any (major) implications regarding their health, physicality, or mentality (I3-I12). Nonetheless, as one child had epilepsy, she suffered from more restrictions and involuntary limitations from her parents (I1) (Amerijckx & Humblet, 2015).

In addition, even though parents stated that the car was more expensive due to fuel costs, no economic limitations affected the children’s freedom of mobility and participation in the community (I3-I7, I9, I11-I12). Also, when traveling in the rural region, parents chose the car as it was more practical and attractive in comparison to public transportation and its limited supply of services (Meurs & Haaijer, 2001). In this regard, parents criticized travel time, costs, and the accessibility of the area (I3, I6, I8, I10, I12).

“If you go into the region, [...] it is better to go by car because you can determine for yourself when you go there and go back.” (I3)

4.2.3. Traffic Safety

According to the parents, traffic in the city center of Groningen was high (I1-I7, I9, I12). Instead, residential neighborhoods were mostly calm (I1, I3-I5, I8-I10), which may result from neighborhood designs based on the principle of the “woonerf” design (Carver et al., 2008). Moreover, speeding depended on the location and the time of the day but was generally regarded as a no major risk concern (I1-I5, I8-I11). Yet, parents reported

that scooters and electric bicycles increased the danger because of their unpredictable speed (I2,I4,I7,I12).

“The electrified bikes are really dangerous in the city, because they have almost the same velocity as motor bikes, but they are silent, so they are silent killers.” (I7)

Eventually, high traffic speed and volume resulted in decreased subjective and objective traffic safety (Amiour et al., 2022). So, parents preferred separated cycling paths (I1-I2,I4,I8-I11), calm areas (I3,I5, I7-I9,I11) or areas without cars (I2,I4,I7,I12).

“The ones without traffic. Without cars. If it’s a bicycle path I am always feeling comfortable about it.” (I10)

On the other hand, they also stated that participation in traffic would always involve risks, therefore parents and children must be aware of their surroundings (I2-I7,I9,I11). The provided support and securely equipped bicycles served as their assessment for safe cycling (I2,I7-I9,I12):

“I think for the distance they have to go; it is the best transport mode.” (I9)

In addition, most children knew how to cycle and had knowledge about the traffic rules in an age-appropriate way (I1-I12). The latter was taught by their parents while engaging in traffic, and at school (I1-I12). Thus, children no longer wore helmets. Although parents were aware of the reduced safety when being unprotected, the Dutch social norm outweighed this (I2-I7,I8-I12) (Vissers et al., 2016).

“We are so used to cycling and the traffic here that we think that we can do it without, but I think it is good to see that most parents [...] have helmets for their children.” (I5)

All factors mentioned by parents corresponded with Sørensen’s and Mosslemi’s (2009) lists of quantitative findings including measures that increase subjective traffic safety, such as design of road furniture, traffic control, training, or education, and enforcement.

4.3. Children’s Community Participation

Children’s activities represented a variety of heterogeneous situations and diverge between school (followed by day care), sports, music lessons, play dates (at indoor or outdoor playgrounds), cultural activities, going to the shops, or meeting family. The first four have been mentioned most frequently and can be regarded as the main activities and reasons for their trips (I1-I12). Furthermore, free play strengthens a child’s cognitive, physical, and social development, as well as it supports their well-being (Amerijckx & Humblet, 2015). These activities were scattered throughout the city, resulting in the ones close by being more accessible than those further away. Nevertheless, parents perceived most activities as accessible (I2-I12).

“They are well accessible, and they are also very nearby my house, like maybe ten minutes by bike, so that’s pretty good” (I4)

However, travel to these activities was only possible for children, when parents accompanied them (I1-I12). Once they would like to explore independently, they were restricted (I1-I6,I8-I12). Amerijckx and Humblet (2015) explain that this is the result of spatially dispersed activities and the availability of time. Moreover, Smith et al. (2019) highlight an additional reason, which is the lack of safe road traffic. Yet, children hold the power to negotiate between locations that are to be added to their personal radius (Ataol et al., 2023). These exceptions encompass individual arrangements between parent and child and included defined boundaries in which children were allowed to move freely (I1-I12).

“I think that the extent or the reach within they can freely move is determined by the bigger roads they have to cross.” (I2)

“The boundaries, I determine, by sight.” (I3)

At the activities, the children mostly met children of their age, who were either friends or other participants (I1-I12). Furthermore, they encountered parents, coordinators, teachers, or additional employees of the activity (I1,I5-I6,I8-I10,I12). These different levels of personal connections represented strong and weak ties and accordingly determined the level of improved well-being (Walsh, 2020).

As the activities were mainly centered around them, they pursued an active role by learning, playing, or sporting (I1-I12).

“They are participating in the activities, so they are joining the group and having their time to research or football. Yes, they are fully participating.” (I12)

On the other hand, their role became passive when they had a shy personality or when they joined their parents (I2,I6,I11). Children’s dependency on their parents resulted in limited contributions to the community due to their role as bystanders. Yet, enhancing their mobility through child-focused planning and design may increase their community participation and activate their role as a citizen (Biggs & Carr, 2015; Lúcio & l’Anson, 2015). Furthermore, children’s citizenship can be strengthened by including their input in spatial planning, which is currently neglected (Lúcio & l’Anson, 2015).

4.4. Enhanced Mobility

Foremost, all parents reported the desire for improved traffic safety measures. However, when discussing the transportation network and road design, or the accessibility, their opinions were divided. Firstly, some parents were overly satisfied concerning the transportation network and road design (I5-I6,I8-I11), and accessibility of activities (I4, I6-I7,I11-I12). Secondly, others proposed suggestions for enhanced mobility regarding the mentioned concepts (Table 3).

“Things being closer is always easier, on the other hand it’s also just the way it is, and I think it is also a good practice that some things are a little bit further so that you have to go there.” (I6)

Meanwhile, the implementation of traffic safety measures may increase the transportation network and road design, as well as the accessibility of activities. These

suggestions concentrated on enhanced road designs focusing on active modes. Ideas by parents included separated cycling paths (I1-I2,I5,I9,I11), increased visibility and coordination (at crossings) by for example traffic lights or lanterns (I2, I4, I6-I8,I10-I11), evenness of streets (I4-I5,I8), and speed reduction (I2-I4,I10-I12). The findings matched the quantitative results provided by Smith et al. (2019) indicating that reduced and slower traffic, as well as more and secure crossroads, designated cycling paths, and other factors increase road safety. Moreover, Bruner et al. (2023) summarize the current critiques as “insufficient built environment” (p.4) and report that children address the same barriers when participating in traffic.

“Outside the inner city, there you have to design around cycling. Inside the inner city, maybe you have to design for walking.” (I12)

Also, reducing or banning cars, scooters, and electric bicycles in the inner city would increase traffic safety of children (I2-I3,I7-I8,I12). This could be achieved by expanding public transportation and reducing its price (I3-I4,I8,I11). Consequently, accessibility to activities would be improved. In addition, some parents requested activities closer by or more activities for their children to participate in (I1, I5-I6,I9,I12).

Furthermore, parents also proposed to raise awareness and include the child’s perspective on the issue (I4-I5,I10-I11), as children could facilitate another relevant perspective on the topic. For example, Bruner et al. (2023) investigate that children value the use of active modes of transport on their way to school, because of their interaction with friends.

Mobility Concept	Current Critiques	Suggestions
Transportation Network and Road Design	Crossings	Improved Visibility and Connectivity at Crossings
	Other Users	Separate Cycling Paths
	Busyness	Improved Public Transportation
	Traffic Speed	Evenness of Roads
	Visibility	Designs Based on Active Modes of Transport
Accessibility	Time Schedule and Feasibility	Closer/More Activities
	Distance to the Activity	Expansion of Public Transportation
	Travel by Public Transportation	Price Reduction of Public Transportation
Traffic Safety	Traffic Volume	Road Designs
	Traffic Speed	Speed Limitation
	Scooters and Electric Bicycles	Car Reduction
	Shared Road Use	Ban of Scooters and Electric Bicycles
		Raising Awareness Implementation of Children's Perspective

Table 3 Summary of Parent’s Current Critiques and Suggestions (made by author)

5. CONCLUSION

This research contributes to the debates on the rights of the children by highlighting mobility enhancements regarding “the best interests of the child” (United Nations, 1989, p.4). As parents determine school-aged children’s use of public places, identifying their concerns and suggestions for improvements regarding mobility increases children’s community participation in Groningen. By analyzing the present transportation network and road design, accessibility, and traffic safety, an overview of the current critiques is provided.

Yet, it stands out that the children’s age influences their mobility and participation possibilities. Younger children in the predefined age group are more restricted in their travel options than older ones. Nonetheless, all children are mostly accompanied by their parents when traveling to activities. For this, parents together with their children usually use active modes of transport and hence encounter different road types. However, they report that sharing the road with motorized vehicles and reduced visibility decreases the network’s attractiveness and children’s autonomy. This does not affect their accessibility. But children’s dependency on their parents and their availability decides over the participation in activities. Therefore, children only have full access to desired activities in theory. These activities are designed for them and support their active participation and interaction with other children. Nonetheless, another reason for parents to not let their children travel independently is traffic safety which is particularly reduced by high traffic volumes. Children’s free movement is restricted to geographical boundaries, as parents are more concerned with external factors in the city than with their children’s skills or equipment.

Therefore, suggestions by parents for enhanced mobility can help planners and policymakers strengthen children’s community participation. These ideas predominantly focus on increased traffic safety through road designs based on active transportation modes. Separated cycling lanes, speed reductions or the ban of cars, scooters and electric bicycles, as well as improved visibility at crossings promotes children’s freedom of mobility and the access to the community. In addition, having more activities scattered throughout the city will enlarge the area, in which children may move freely. The “15-minute city” concept with an extensive focus on Groningen as a cycling city can help with the realization.

In conclusion, policy plans and designs for the urban environment should promote active mobility, such as walking and cycling, to support children’s social engagement which benefits their development and is meanwhile in line with the principles of a “Child Friendly City”.

However, not only mobility affects children’s participation in the community. Additional concepts are excluded from this study but may have their effects. Future research can continue to focus on equity and inclusion among children in the urban environment in relation to socio-economic, environmental, and cultural factors. Thus, diverse interests and services promoting a “Child Friendly City”, such as adequate living conditions, financial and physical safety, or health and hygiene, could be addressed (UNICEF, 2004). These additional insights can decrease barriers to community participation and increase the rights to the city of all children.

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APPENDIX

1. Document for Participant Recruitment



university of
 groningen

faculty of spatial sciences

Dear Parent!

I am Muriel and I am in my last year of my Bachelor Spatial Planning and Design at the University of Groningen.

Currently, I am looking for participants for my data collection who are willing to participate in an interview for my bachelor thesis.

My bachelor thesis is about “Designing cities with/for children” with a specific focus on “How do parents’ perceptions of freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. To answer this research question, I am looking for parents who live in the city of Groningen with children aged 6-11 years old. The interviews will take place in English and will last about 30.

I would be very happy to hear from you to help me with successfully completing my Bachelor thesis.

Let me know if you are interested,

Contact details removed for the publication of this thesis

Thank you in advance,

Muriel

2. Bundled Interview Questions:

Subgroup 1: General Characteristics:

Interview Question	Adopted, based on literature	Codes; Sub-Code
What is your name?		<i>Only asked in case the participants request to change information or withdraw</i>
What is your and your child(ren)'s gender?	Lam, 2001; Rezaei et al., 2022	General Characteristics of Parent, General Characteristics of Child; Gender
How old is your child/are your children?	Lam, 2001; Rezaei et al., 2022	General Characteristics of Child; Age
What is the composition of your household?	Lam, 2001; Meurs & Haaijer, 2001; Rezaei et al., 2022	General Characteristics of Parent; Household Composition
What is your employment status?	Lam, 2001; Meurs & Haaijer, 2001; Rezaei et al., 2022	General Characteristics of Parent; Employment Status
Do you own a car?	Meurs & Haaijer, 2001	General Characteristics of Parent; Car Ownership
What are your experiences with traffic accidents?	Lam, 2001	General Characteristics of Parent; Experiences with Accidents

Subgroup 2: Children's Freedom of Mobility:

Interview Question	Adopted, based on literature	Codes; Sub-Code
What are the reasons for your child's/children's trips?	Meurs & Haaijer, 2001	Freedom of Mobility; Reason for the Trip
How often does your child/do they travel (per week)?	Meurs & Haaijer, 2001	Freedom of Mobility; Number of Trips
What transport modes does your child/ do they use?	Meurs & Haaijer, 2001	Freedom of Mobility; Transport Mode
What transportation networks does your child/do your children use (walking, cycling, public transport, car)?	Guillermo et al., 2023; Meurs & Haaijer, 2001	Transport Network and Road Design; Network Type Availability

How do you perceive the transportation network and its quality?	Guillermo et al., 2023; Lin et al., 2017; Smith et al., 2019	Transport Network and Road Design; Network Quality
Does the chosen transportation network depend on the distance to the activity and overall city size?	Christian et al., 2014; Comendador et al., 2014	Transport Network and Road Design; Density
Do you think road designs are attractive according to visibility, guidance and road alignment (to scale)?	Blumentrath & Tveit, 2014; Dessing et al., 2016	Transport Network and Road Design; Visibility, Guidance, Road Alignment According to Scale
Does your child/Do your children have access to all desired activities?	Wolday, 2022	Accessibility; Availability of Desired Activities
How do you evaluate travel time, cost and comfort based on the mode of transport?	Zegras, 2005	Accessibility; Travel Time/Cost/Comfort Based on Transportation Mode
Do physical, mental, or economic factors of yourself/your child affect the child(ren)'s accessibility?	Amerijckx & Humblet, 2015; Zegras, 2005	Accessibility; Physical/Mental/Economic Factors
Does your child/Do your children have knowledge about traffic rules?	Muñoz et al., 2013; Vissers et al., 2016	Traffic Safety; Traffic Rules
How do you perceive your child(ren)'s equipment regarding safety?	Muñoz et al., 2013; Vissers et al., 2016	Traffic Safety; Individual Equipment
Does your child/Do your children know how to operate the chosen transport mode?	Muñoz et al., 2013;	Traffic Safety; Skills and Vehicle Control
Do you think the chosen transport mode is safe?	Bhagat-Conway et al., 2022; Sørensen & Mosslemi, 2009	Traffic Safety; Skills and Vehicle Control
How do you perceive traffic speed and traffic volume regarding your child(ren)?	Carver et al., 2008; Smith et al., 2019	Traffic Safety; Traffic Speed and Traffic Volumes
What roads do you perceive as safe regarding your child(ren)?	Carver et al., 2008; Dessing et al., 2016	Traffic Safety; Road Design

Subgroup 3: Children's Community Participation

Interview Question	Adopted, based on literature	Codes; Sub-Code
What types of activities does your child/do your children go to?	Amerijckx & Humblet, 2015	School-aged Children's Community Participation; Type of Activity
Where are the activities located and do you think that they are well accessible?	Amerijckx & Humblet, 2015	School-aged Children's Community Participation; Geographical Location
Who does/do your child(ren) encounter there?	Lúcio & l'Anson, 2015; Walsh, 2020	School-aged Children's Community Participation; Meeting Others
What is your child's/are your children role(s) at the activity?	Kaur & Singh, 2022; Lúcio & l'Anson, 2015; Smith et al., 2019; Walsh, 2020	School-aged Children's Community Participation; Role
How does your child/do your children get there?	Holmes, 1995; Smith et al., 2019	School-aged Children's Community Participation; Travel
How free/restricted is your child/are your children in their travel possibilities?	Kaur & Singh, 2022; Riggio, 2002; Smith et al., 2019; Walsh, 2020	School-aged Children's Community Participation; Travel

Subgroup 4: Enhanced Mobility:

Interview Question	Adopted, based on literature	Codes; Sub-Code
How would you improve the transportation networks?	Bruner et al., 2023; Lin et al., 2017; Smith et al., 2019	Enhanced Mobility; Transportation Network
What factors increase the quality of road designs?	Bruner et al., 2023; Smith et al., 2019	Enhanced Mobility; Road Design
How do you think accessibility can be improved?	Bruner et al., 2023; Lin et al., 2017; Smith et al., 2019	Enhanced Mobility; Accessibility
What factors need to be addressed to increase traffic safety?	Amiour et al., 2022; Rezaei et al., 2022	Enhanced Mobility; Traffic Safety
Do you have anything to add regarding children's freedom of mobility and their participation in the community?		Enhanced Mobility

3. Interview Guide (Questions and sentences spoken by researcher are marked in *italics*)

This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting.

For questions or withdraw please contact the researcher of this project: Muriel Schwarze, *Contact details removed for the publication of this thesis*

Do you like to participate in this research? (oral consent)

1. General Characteristics:

- Name: Hello, what is your name?
- Gender: What is your and your child(ren)’s gender?
- Age: How old is your child/are your children?
- Household composition: What is the composition of your household?
- Employment status: What is your employment status?
- Car ownership: Do you own a car?
- Traffic experiences: What are your experiences with traffic accidents?

2. Freedom of Mobility

Introduction sentence (Core question 1): The following questions of the interview are focusing on children’s freedom of mobility. To get a first impression of your child(ren)’s mobility pattern it is important to understand the reason for the trip, the frequency of trips and the used transport mode.

What are the reasons for your child’s trips?

How often does your child/ do they travel (per week)?

What transport modes does your child/ do they use?

Introduction sentence (Subcategory 1): Furthermore, the freedom of mobility is determined by three components. These components are the following and will be

analyzed separately from another. Starting with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility.

Transportation networks: What transportation networks does your child/do your children use (walking, cycling, public transport, car)?

How do you perceive the transportation network and its quality?

Density: Does the chosen transportation network depend on the distance to the activity and the overall city size?

Road design: Do you think road designs are attractive according to visibility, guidance and road alignment (to scale)?

Introduction sentence (Subcategory 2): The following questions will consider accessibility. People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility.

Activities: Does your child/Do your children have access to all desired activities?

Cost-efficiency: How do you evaluate travel time, cost and comfort based on the mode of transport?

Individual factors: Do physical, mental, or economic factors of yourself/your child affect the child(ren)'s accessibility?

Introduction sentence (Subcategory 3): The final component determining the freedom of mobility is traffic safety. Based on research parents are mainly concerned about safety in traffic when judging their children's freedom of mobility.

Rules: Does your child/Do your children have knowledge about traffic rules?

Equipment: How do you perceive your child(ren)'s equipment regarding safety?

Transport mode: Does your child/Do your children know how to operate the chosen transport mode?

Do you think the chosen transport mode is safe?

Traffic: How do you perceive traffic speed and traffic volume regarding your child(ren)?

Road design: What roads do you perceive as safe regarding your child(ren)?

Introduction sentence (Core question 2): The following questions address children's participation in the community. Community participation is a right determined by the United Nations but it is also crucial for the development of children.

Activities: What types of activities does your child/do your children go to?

Where are the activities located and do you think that they are well accessible?

Who does/do your child(ren) encounter there?

What is your child's/are your children's role(s) at the activity?

Travel: How does your child/do your children get there?

How free/restricted is your child/are your children in their travel possibilities?

Introduction sentence (Core question 3): Increasing children's freedom of mobility can eventually lead to enhanced community participation.

Transportation network: How would you improve the transportation networks?

Road designs: What factors increase the quality of road designs?

Accessibility: How do you think accessibility can be improved?

Traffic Safety: What factors need to be addressed to increase traffic safety?

Do you have anything to add regarding children's freedom of mobility and their participation in the community?

Explain the ethical rules again and thank for the participation in this interview.

4. Transcribed Interviews:

Interview 1

(MS: Muriel Schwarze; I1: Interviewe 1)

MS: *This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting but still anonymously.*

For questions or withdraw please contact me, the researcher of this project: Muriel Schwarze

Do you like to participate in this research?

I1: Yes.

MS: *Well, your name I have already and will only use it in case you wanna change something so that I can refer back. Then, what is your and your children’s gender?*

I1: My gender is female, and I have four children, only females.

MS: *Okay, and how old are your children?*

I1: 4,6,8,10.

MS: *What is the composition of your household?*

I1: Me and my husband and then the four children.

MS: *And what is your employment status?*

I1: I am a doctor in the hospital.

MS: *Nice, and do you own a car?*

I1: Yes.

MS: *What are your experiences with traffic accidents?*

I1: I have none.

MS: *This was about general characteristics and now it is about the freedom of mobility. So, the following questions of the interview are focusing on children’s freedom of mobility. To get a first impression of your child(ren)’s mobility pattern it is important to*

understand the reason for the trip, the frequency of trips and the used transport mode. What are the reasons for your children's trips?

I1: School, sports, and play dates, I think, music.

MS: *And how often do they travel per week?*

I1: One child, so, they go to school every day and then the oldest ones have two or three sport or music in the week. And the youngest a little bit less.

MS: *Okay, what transportation modes do they use?*

I1: Most of the time we go by bike and then sometimes we go by car.

MS: *And then, freedom of mobility is determined by three components. These components are the following and will be analyzed separately from another. Starting with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility. So, what transportation networks do you use?*

I1: And then you mean?

MS: *It's like, for example do you only go on cycling paths...*

I1: No, we have a regular road since we have to go to school by that. And then we have cycling paths or the sidewalk. That is the main, I think.

MS: *Perfect, how do you perceive the transportation network and its quality?*

I1: We live... between the house and our school there is a very busy street, so that is not perfect for the children. But for the rest...the quality is good but it is very busy. There is one crossing that is very ... how do you say that... it is difficult to see how everything is going so you have to look to the left since... but normally the cars would come from the right. It is very strange area that we have to pass.

MS: *Does... because you have already mentioned that you mostly go by bike but sometimes go by car... does the chosen transportation network depend on the distance to the activity and the overall city size?*

I1: Yeah, yeah. We only go by car if it's not in the city mainly, or that we don't have a bike or since we have too many children. Because if there are a lot of children playing here, then we don't fit on the bike. But normally, we always take the bike.

MS: *You have already talked about the one crossing where cannot really see well. Do you think road designs are attractive according to visibility, guidance, and road alignment?*

I1: Normally they are, I think, but here in the city center and especially that one crossing... it's not very child friendly.

MS: *And would you say the street width is according to the environment? As in ... in the city center the streets are not too wide, or would you say they should be smaller?*

I1: No, they should definitely not be smaller, but I think they are okay because it's only one way street also, so the cars can only go one way, bikes can go two ways. In total they are wide enough but they shouldn't get any smaller.

MS: *And is it also clear that you know as a cyclist that you are supposed to cycle here and as a car you are supposed to ...*

I1: No, no.

MS: *So that needs improvement?*

I1: It could... that you make it a different color or something, but it's not there. It is a busy street with everybody going to the schools is going by that street, so there is a lot of children, and a lot of bikes in the morning.

MS: *The following questions will consider accessibility. People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility. So the first question is, do your children have access to all desired activities?*

I1: What kind of activities do you mean then?

MS: *That is up to you... if it's sports, music, school, seeing friends, going to a shop... it can be anything.*

I1: Yeah, I think, mainly, but they are not allowed to go alone yet and they are depending on us of course. And I think they are not allowed to go alone yet, because I think it's difficult... too dangerous, not clear enough. I think, the roads are too busy for the children to already go alone and then walking is too far. So they are too young... our oldest is a little bit starting that she can go alone to things.

MS: *That also perfectly fits the next question because how do you evaluate travel time, cost and comfort based on the mode of transport? Because you said that walking is too slow...*

I1: Yeah, or it is too far to walk also for them to do it alone, I think, but if it would be closer to one another, they could walk alone. Z. is eight, she walks to the guitar lessons together with us now but can almost do that by herself even though she is eight. And F. would like to go, she is the oldest of ten, she would like to go alone to school but that road is really too busy for me to go alone, with the big crossings and she has epilepsy. So it is not perfect to let her go alone maybe.

MS: *As if you know my interview guide... because do physical, economic or mental factors of yourself or your children affect children's accessibility?*

I1: For F. it does, she is the oldest, that's one but then you are more careful I think when it's the oldest, but she also has epilepsy, so that is why I think it is a little bit more difficult to let her go alone.

MS: *The final component determining the freedom of mobility is traffic safety. Based on research parents are mainly concerned about safety in traffic when judging their children's freedom of mobility. Do your children have knowledge about traffic rules?*

I1: Yeah, I think so. They know they have to look right and left, and which car goes before the other.

MS: *So you have taught them, or have they learned it at school?*

I1: Both, we taught them, and we went together and explained everything on the routes that we are going but they also have it on school.

MS: *Perfect. And well, I am German, and I am used to helmets of course, so how do you perceive your children's equipment regarding safety?*

I1: We also have helmets. That started since F. has epilepsy, so she needed to wear a helmet in the traffic and then we decided that, because she thought it was very annoying that she had to wear one and the other children not. We were not really against helmets, so we thought we are gonna do it for all children, so they are all wearing helmets when they are going on the bike.

MS: *Do your children know how to operate the chosen transport mode? Now, it is obviously the bike...they are skilled?*

I1: Yes, only the youngest, but she is four and a little out your ... but she can bike, but we don't let her on the street. So, but for the rest they all know it.

MS: *Do you also think that the chosen transport mode, the bike, is safe?*

I1: Yeah...

MS: *No concern there?*

I1: No, you can also fall off the sidewalk... thinks can happen in traffic but also when you are at home. I think it is safe enough if we just keep in mind the big streets and you teach them well... so I think it is okay.

MS: *How do you perceive traffic speed and traffic volume regarding your children? You have already said that it is always very busy... is there also something you would like to add in terms of speed?*

I1: It is not really that they go too fast. Also, cars not. The only thing is that the stoplights sometimes don't leave room for bikes and then I think you don't see the bike when you go around the corner, but they don't really speed way too hard here, I think.

MS: *That is good. And also in general, what roads do you perceive as safe regarding your children? I assume not the big road?*

I1: Nee, not the big roads or the very busy ones or where it is not really clear that where should you bike or where should you drive with the car. The best is to keep it separate, but that is not always possible, that I also understand, but the easiest is just the bike routes.

MS: *Then, the following questions address children's participation in the community. Community participation is a right determined by the United Nations but it also crucial for the development of children. You have already mentioned the types of activities that your children go to, which were sports, music, school and playdates. Is there anything else?*

I1: Is there anything else... nee, ik denk het niet. No.

MS: *Where are these activities located and do you think that they are well accessible?*

I1: They go to the sports... we are going to move so one of the sports is a little bit further away but that is with the new house and the other one is close to here but it is over the water and there is a bridge that is... years ago the bridge broke down or a boat bumped against it and it was broken and it is still not fixed and I think that is about four years ago now. So that is very annoying, I think. I think that could be a little bit faster. And for the rest it is all in the city, but not very clear... not very close.

MS: *Who do your children encounter there? Is it other children of their age?*

I1: Other children of their age with the sports and parents of those children of course. And at the music they have a teacher, one has a male teacher, and one has a female teacher. And when they have play dates of course, the parents or the babysitter and the other children also.

MS: *And what are your children's roles at the activities?*

I1: They learn, do sports, or they play with friends. They don't really do anything else that they already work or so... or they already participate in something.

MS: *No, but of course you could only be listening or interacting with others.*

I1: Yeah, they are active, but not overactive. I think, it would be an equal thing.

MS: *Perfect. You have already mentioned it a little bit, but how do your children get to these activities?*

I1: Most of the times we bring them by bike. And then one goes by herself, she walks...

MS: *That's also the oldest?*

I1: No, that's after the oldest?

MS: *Oh, the second oldest...*

I1: Because her guitar lessons are at the end of the street, so that's very easy. We still bring and get them.

MS: *So how free or restricted are your children in their travel possibilities?*

I1: Not really free then. No, most of the times we go with them, but they don't really ask "I want to go alone", so I don't know whether they feel restricted but we do still bring them and pick them up. Sometimes they go with friends, but that's also not possible to go alone. For example with the football, they go, and then sometimes other parents drive and then they go together, but then it's too far to go on their own.

MS: *But when they go with their friends, they only go with friends, not with other adults?*

I1: Because they go by car, somebody needs to drive. So one of the parents of the other children drives.

MS: *Oh, I misunderstood... I thought they go by bike together, just the two friends...*

I1: No, they don't do that yet, but I don't know that's maybe a little bit late, but yeah... The oldest of course, we are a little bit careful with and the one after the oldest is eight, so maybe we are a little bit strict but on the other hand they don't ask about it yet that they want to go alone. So I'm not sure how they will experience it, but we still bring them and catch them everywhere.

MS: *I think that makes sense.*

I1: I don't know. Probably, you can tell me later on if it is late or are all the children still doing that... I don't know actually.

MS: *I think, and that is also actually what my research is about, it's looking at how can we make parent's happier, so children can move freely. But you have mentioned all the reasons already what makes you concerned, so then it makes sense that you rather supervise.*

I1: I think we would be a little bit more open, with for instance now the eight-year-old, she is really trying and going somewhere alone by bike or walking, and I think it is an influence that the street to the school is so busy that we do not do that. And then of course our oldest with the epilepsy, we are a little bit more careful but if it would be closer or there would be something there could walk by without cars, or they could bike without cars, then it maybe would be possible to go alone. But for now, all the activities are not so close, except for the guitar lessons that it is already possible to do that. They really have to go quite far through the city.

MS: *Therefore, also my last questions. Increasing children's freedom of mobility can eventually lead to enhanced community participation. So, how would you improve the transportation networks?*

I1: If I could choose?

MS: *Yeah, you can tell me whatever you would like.*

I1: I think, it would be nice to have the big roads into the city center, to have it more safe for the bikes next to the cars and especially the bus or ... I don't know the English word for vrachtwagen.

MS: *The trucks.*

I1: Yeah, the trucks, because they are all on the same road and therefore for a truck it is quite small and then there is also all those bikes next to it, so that is a little bit too ... it would be too busy for me. So that is what I would change then, to really make room for the children that go to the schools.

MS: *And would you also say there is more need for more cycling paths in general or more public transportation?*

I1: No... I think the cycling paths then yes, because they are not there, or they are on the street. At least make them separate then but we don't really use public transportation. And I would also not gonna ever use it in the city, then I would bike or walk. For short parts it is not really necessary for me.

MS: *And then you also talked about the one crossing where you cannot see properly, do you have any ideas how to solve that issue?*

I1: I don't really know but it is a terrible crossing. It is a big crossing on its own where there is no real room for cyclists and there is road next to it where busses only go and the busses come from the wrong side, so that is really unexpected for everybody and there is of course not always a bus, but it is big... when there are busses coming. So, I don't know but it is a really unnatural area. So, you don't see it. The road goes like this, so there is a mark, an arrow and it goes to the way where the bus needs to go but then there is also an arrow the other way around and there it says look to the left. It is completely confusing for a child, for me already as an adult, but also for a child, "where do I have to look and where is the bus coming from?" So it is a strange crossing. And if you don't see it a lot, the specific kind of crossings, then people are not used to it and then it always goes wrong once, I think, once in a lifetime.

MS: *I guess so too. And how do you think accessibility can be improved?*

I1: Accessibility is ...?

MS: *to activities.*

I1: To have the activities close to where the people live so that they don't have to travel too far. And also, I think, by making the way there as safe as possible, or at least to have the cycling paths apart from the rest.

MS: *That is for you how you would determine traffic safety or is there other factors?*

I1: Speed... I don't really think that there is a lot of speed in the city, so, I think for the places we go to its more that it is safe for them to bike.

MS: *My final question is, do you have anything to add regarding children's mobility and their participation in the community?*

I1: Nee, I am going to think about how they participate in the community, because I don't really know of any option where we could already let the children participate in the community.

MS: *An example could also be, I don't know if your children have friends in the neighborhood, but just letting them play here on the streets, or something.*

I1: Yeah, but they do that. We have a football field behind here and then they play with the friends from the neighborhood.

MS: *And then they also go there on their own?*

I1: Yes, they go on their own, so they walk, it is walkable. They cross the street by themselves. With the four-year-old, most of the times I tell one of the sisters to pay attention to her, but in the area here, they do everything by themselves. As soon as we need to cross big roads, then we go with them.

MS: *So, in this little neighborhood...*

I1: They are free to go.

MS: *Indeed, they are more free...*

I1: Yeah, definitely.

MS: *Perfect, then again, my ethical rules. In case there is anything, please contact me and then I will stop the recording now.*

Interview 2

(MS: *Muriel Schwarze*; I2 Interviewe 2)

MS: This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting.

For questions or withdraw please contact me, the researcher of this project: Muriel Schwarze

Do you like to participate in this research?

I2: Yes.

MS: Alright, your name I have already and is only for myself, so I can connect it in case you would like to withdraw or whatever. The first part is about general characteristics. What is your and your child’s/children’s gender?

I2: I have two girls; two females and I am female too. I identify as a female.

MS: Great, thank you. And how old are the two girls?

I2: Seven and nine.

MS: Perfect for my research. What is the composition of your household?

I2: I am a single mum, and my children live with me half of the time. The rest of the week or so, we have over two weeks a 50/50 division, they their father who also lives alone but has a girlfriend and is within one kilometer of my house. So the children commute between the two but not alone.

MS: Yes, there will be more questions about this later. And what is your employment status?

I2: I am employed full time.

MS: Do you own a car?

I2: I share a car with my ex-husband. Yes.

MS: And do you already have experiences with traffic accidents?

I2: Yes.

MS: And how did that affect you?

I2: I was 20, so it's 23 years ago and it was scary, but I never think about it. But I never had any traffic accidents in the neighborhood, or lost someone or was injured, or witnessed injury.

MS: *That sounds good. Then, the next part is about mobility itself. So, the following questions of the interview are focusing on children's freedom of mobility. To get a first impression of your child(ren)'s mobility pattern it is important to understand the reason for the trip, the frequency of trips and the used transport mode. What are the reasons for your children's trips?*

I2: They go to school; we walk to school. Okay, I will first focus on the reasons. They visit friends, they move to their father, to change homes so to say, and to visit grandparents and family, that is a reason for mobility. And playing outdoors and go to the shops.

MS: *And how often do they travel per week?*

I2: If that includes walking to school, then I would say 20 times per week.

MS: *Okay, and what are the transport modes they use?*

I2: So mostly walking or bike. When they go to their father, they use their bike so then they also take their bike to school on the days that we switch. Do you call this a step?

MS: *Yeah, these scooters?*

I2: Scooter, skateboard, skeelers, legs for walking and sometimes the car. Or they sit on my bike, I still have two seats and they like it if we go into the city, they prefer to be driven by me.

MS: *So more luxury?*

I2: Yeah, I say "Taxi" and then they hop on.

MS: *That's quite of a variety. So, furthermore, the freedom of mobility is determined by three components. These components are the following and will be analyzed separately from another. I will start with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility. So, what transportation networks do you use with your children?*

I2: The footpaths and indeed, I think that the extent or the reach within they can freely move is determined by the bigger roads they have to cross. So the smaller roads they may cross independently but the bigger ones... well my oldest may, my youngest may not. So that is what determines how far they can get, and can you repeat what the actual question was because I am answering something else?

MS: *What transportation networks do you use, so you already stated sidewalks...*

I2: Yeah, sidewalks, cycling paths, roads, sometimes we take the bus or the train when we go somewhere. I did not mention that before, so then I use the transportation network.

MS: *And how do you perceive the transportation networks and their quality?*

I2: In my neighborhood, the footpaths are okay and safe, but there is many cars and not so much outdoor safe space to play on the streets, so they have to be aware of traffic all the time, so I would say the quality of the network, or the roads is fine but we probably get to safety later.

MS: *Yeah.*

I2: Yeah, but the quality is fine.

MS: *So you do feel connected?*

I2: ... well connected.

MS: *Perfect.*

I2: The buzzword is checked.

MS: *Because you have already mentioned that you also sometimes go by public transport or by car. Does the chosen transportation network depend on the distance to the activity and the overall city size?*

I2: I choose to go by car if there is no easy opportunity to get to final destination in the end. My family lives in the west of the Netherlands and I find it useless to use my car on the long distances, but my parents live in an area where there is no public transportation. So then, they either have to pick me up... so depending on the amount of planning and time I have, I take the car. I prefer to take public transport. That's when I travel outside of Groningen. Can you repeat, so I can also ...

MS: *If the chosen transportation network depends on the distance of the activity and the overall city size.*

I2: I think indeed it depends on the weather as well. So if my children go to hockey, so sports, then I am usually the cycling taxi because I like to cycle, but if the weather is not nice or they are in a bad mood or it's cold, I choose the car. So it is more easy to get them there.

MS: *How would you differentiate when do you walk and when do you cycle?*

I2: Ahh okay... That depends, I guess, on the energy of the kids. When I am alone, I prefer to walk to the city center because I like to walk and parking your bike gets a bit more difficult in the city center or you have to park it somewhere and then you have to walk because I live only a kilometer from the city center, so then I walk. It's not only distance, but also the composition of my company and the what I need to bring.

Some things can be carried easily walking or cycling or sometimes I need the car if I need to pick up a table or something.

MS: *Do you think the road designs are attractive according to visibility, guidance and road alignment?*

I2: No. No, I think currently, also because of the reconstruction of the bigger roads, they are not very attractive. I think I know the roads and for cycling and walking everything is accessible... well not everything. There is some unsafe spots currently. But I am thinking of compact sentences... there is a lot I could ... Can you repeat again?

MS: *Do you think road designs are attractive according to visibility, guidance and road alignment?*

I2: No, I don't find them particularly attractive. I know them, so I know my way and I don't have to search for them, but I don't think they are in a way intuitive that you are guided. Not in my part of the city. I know with the route to Zernike for example, there it is clear, and everything is designed around it. That's not really the case in my neighborhood.

MS: *So you also think that the size or width of the street is not fitting to the scale of the houses or the neighborhood?*

I2: In the neighborhood, there is a lot of bikes on the pedestrian... the foot paths. For me now it's not such a problem, when the children were smaller, then I had the stroller then it was not so good. There is many cars parked on the street. So sometimes that's also dangerous, because in the streets, in my area there is no separate cycling paths, so it's a shared space. But not in the sense that it's communicated that the cars are guests.

MS: *It is not a fietsstraat?*

I2: Indeed, no. So the cars are the boss, and the cyclists have to adapt.

MS: *Perfect, then the following questions will consider accessibility. People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility. Do your children have access to all desired activities?*

I2: That would mean with me or without me?

MS: *Without you.*

I2: No.

MS: *But with you, they do?*

I2: Yes, meaning that I don't know if everything they wish or want to do is presented in Groningen or close enough. But in principle we can get everywhere if I am there, but if

I am not there the only thing, they can go to on themselves is the supermarket, but they have to cross quite a dangerous road and play yards for which they also have to cross several smaller roads. So in involve some danger. It's not that they can avoid a crossing, that's not possible.

MS: *How do you evaluate travel time, cost and comfort based on the mode of transport? You have already said, with rain for example, that does affect the mode of transport. Are there other things?*

I2: Yes, the energy and mood of my children and I think in the end, also the possibility of parking is a consideration but for bicycle and car.

MS: *Do physical, mental or economic factors of yourself or your children affect the accessibility of your children?*

I2: I would say no, although on a bigger scale I don't wanna fly if it's not necessary, so we don't go on holiday to exotic locations where they might want to go or we don't go skiing because I find that too burdensly for the environment, but other than that, no, I don't think so.

MS: *Great, then now we come the final component determining the freedom of mobility and that is traffic safety. Based on research, parents are mainly concerned of safety in traffic when judging their children's freedom of mobility. Do your children have knowledge about traffic rules?*

I2: Yes.

MS: *And how did they learn them?*

I2: Because, as soon as they could cycle, so when they were four, we were taking them on the bike trough the city. So they know about roads... so by experience I would say and encountering potential danger situations.

MS: *How do perceive your children's equipment regarding safety?*

I2: Like their ability to judge or to...

MS: *No, for example in Germany every child has a helmet or some reflection or the bike itself.*

I2: Ah, no. They have lights on their bike. They wear colorful clothing, but we don't use helmets. When they were little, I tried it and they were wearing a helmet but because it's not normal, the social norm easily makes it something they don't want.

MS: *Understandable. So now it is about the skills: do your children know how to operate the chosen transport mode?*

I2: Yes.

MS: *No, there is no issues there?*

I2: No, they can break, steer, whatever.

MS: *And do you think that the chosen transportation mode is safe?*

I2: No, I think every mode of transportation is a kind of calculated risk, so walking is safest and if they are going alone, I prefer them to walk but I do know that they have to learn with the risk of cycling so that's something I kind of ... when I was eight years old I already had to cycle three kilometers to school on a road without a cycling path. So I often remind me that I was well capable of doing that. Of course, I was less busy then... I trust my children that they can do it, but I just don't trust all the other traffic.

MS: *I understand. How do you perceive traffic speed and traffic volume regarding your children?*

I2: Very busy in my neighborhood and also people annoyed by not finding a parking place and also with all the new roads... people try to find a short cut and they speed a lot in the streets. The street I live in, I think 15 kilometers would be acceptable, but they often go 40 or something.

MS: *And it is a 30km/hrs street?*

I2: Area, yeah. So the large road is 30km but there is also quite some speeding there.

MS: *So what roads do you perceive as safe?*

I2: Dedicated cycling paths, where no roads are attached to it, so you have some in my area that I really like. I think once you cross the biggest road, then the area is divided in blocks and within a block I find it relatively safe. So I usually help them when we make appointments from a crossing from block to block. So then I help them for example, I really make a clear appointment to get off your bike to get the zebra pad and then look left and right and then you go. Left, right, left of course. Sorry, again I have to ask about the question.

MS: *What roads you perceive as safe? You have already said the dedicated cycling paths.*

I2: Dedicated walking paths for them.

MS: *The following questions address children's participation in the community. Community participation is a right determined by the United Nations but is also crucial for the development of children. What types of activities do your children go to?*

I2: They go to school, they go to day care after school and they go play with friends, they go to sports, they go to the playground. That's the things.

MS: *Where are these activities located and do you think that they are well accessible?*

I2: Yeah, school is 100m walking distance, so that is very close, and they can go alone, also my youngest but I don't do that, we go together, but she would be able. And my oldest finds it super ... yeah, she really likes it if she can go alone. That's kind of a privilege I allow her. Just again... I don't know if it is my mind today or that I get a bit distracted.

MS: *If you think, where activities are and if you think that they are well accessible.*

I2: Most are. So school is, where their father lives used to be very safely accessible but because of the construction work with the ring, it's not. So if that will return to a safer situation, then that's very well doable. Only sports is not in reach and then I have to accompany them, but for the playing ... their axial radius extends, so that's nice.

MS: *And you said that you would theoretically allow your youngest child to walk to school alone but you still don't do it. What is the reason for that?*

I2: Also, because I like to have the small conversations and usually at the schoolyard, she either wants me to bring her in the classroom or I am not allowed to go into school. And if I need to do something in school, I need to use a different entrance, so she really wants her independence sometimes. But I think, they are getting into the age where in a way they want you to be there but don't want you to be there. So whatever they like.

MS: *I understand. And who do your children encounter at the activities?*

I2: Other people living in the neighborhood, friends, other school children but also just trespassers when people are using the roads to get to their work or out of the neighborhood.

MS: *Okay, and what are your children's roles at the activities?*

I2: Participant's I would say. It is centered around them. Sometimes they accompany me when I have to do something, like go to supermarkets or ... they just join me.

MS: *Do you think they have more of an active role or passive role at the activities?*

I2: During the travelling?

MS: *No, at the activity itself.*

I2: Yeah, mostly.

MS: *You have already covered that a bit. So, how do your children get there? You mostly bring them...*

I2: Yeah, for sports I bring them. So, as soon as it is further than school... so I actually bring them everywhere but sometimes my oldest now wants to get to a friend alone and then I allow that, but I communicate with the receiving parent, like "she's leaving now" and we do it the other way around. She has some friends, they are allow to go from day care to home alone on the bike and I think she would really like it but I also

find that still a bit risky because the traffic is quite intense. So she is also quite distracted by everything that is social so that I would find a bit risky. Maybe I need to get there.

MS: *And you also mentioned in the beginning, the area defined is a little bit by the big roads, correct?*

I2: Yes, indeed.

MS: *Alright, then overall, how free or restricted are your children in their travel possibilities?*

I2: I consider that they are as free as they want to be, so I see that the axial radius expands a bit with their age and the size of the world that they can access or understand. So that's when they move freely alone. For the rest, I think me and my ex-husband support where they need to go. So, if they want to go somewhere we can get them there and we help them. So, I would say relatively free, and the only restriction is the road safety.

MS: *So now it is about increasing children's freedom of mobility which can eventually turn to enhanced community participation. So, how would you improve the transportation networks?*

I2: I actually would like it if there are less cars in the neighborhood. I see that ... I don't know, I would like a city without cars, given the amount of cars I don't see that happening soon. But more, maybe cyclist dedicated paths also along the roads. I think they could sacrifice a lot of parking space for safe roads, and they need to find a solution then, so that not everyone has a car or that it is discouraged to own a car. So that there is more space in the streets for safe movements.

MS: *I understand, and then also, what factors would you say increase the quality of road designs apart from having designated cycling paths? Is there something else?*

I2: I think the connections between the different blocks and areas of the neighborhood. Yeah, I would mostly say the connections between safe parts.

MS: *Do you have ideas?*

I2: To some aspects, another tunnel or a cyclists and pedestrian bridge. These kind of things will help. Traffic lights could also help at some parts.

MS: *How do you think accessibility can be improved?*

I2: Well, again for me the main determinant is safety. So, having more safe or cyclist and pedestrian dedicated space would also improve accessibility for them.

MS: *So you would say that the activities that are accessible are enough, or should they be closer?*

I2: I mean like, in summer there is one place where they can cycle or where they can swim, now they can both swim, so I foresee that especially my oldest will go swimming alone. And then I think that currently it is not safe enough for her to cycle there. It is close to her father's, so from her father's it would be safe, from me not. But if they wanna go to "papiermolen" for example that would be extremely unsafe, so she is not allowed to go there alone. Do you know where that is? So at the Herreweg, they have to cross many busy roads. I don't think everything is accessible to them that is of interest in the coming years.

MS: *But if the safety would be improved, then they are also accessible?*

I2: Yes, I would say so.

MS: *Is there any other factor that you would like to address in terms of increased traffic safety? Of course, less cars, designated cycling paths,...*

I2: Maybe also the speed restriction of these fast bikes within the city. I find them extremely dangerous, and you cannot really predict who is on a speed padelec or fast bike and who is not because they don't wear a helmet or have a ridiculous orange flag on their bikes, so you can see who are these cyclists. Currently, I think that's another factor. So, fast movement.

MS: *So, my final question: Do you have anything to add regarding children's freedom of mobility and their participation in the community?*

I2: No, I think it is important for their sense of autonomy that there is a safe enough environment so that they can explore the world and feel home, so that indeed, they feel part of the community, so they can visit elements within the community. I think we are in a well-defined enough area and indeed that could be increased if it would be safe.

MS: *Perfect, then you know about the ethical rules, please reach out to me if there is anything and then I will stop the recording now.*

Interview 3

(MS: Muriel Schwarze; I3 Interviewe 3)

MS: *This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting.*

For questions or withdraw please contact me, the researcher of this project: Muriel Schwarze

Do you like to participate in this research?

I3: Yes, I do.

MS: *Okay, then, your name I have. What is your and your child’s/children’s gender?*

I3: Male, both of my children and myself.

MS: *How old are your children?*

I3: The oldest is ten and the youngest is almost six.

MS: *What is the composition of your household?*

I3: Composition? We live with the four of us. So, the three of us, their mother, my girlfriend.

MS: *Alright, and what is your employment status?*

I3: Employment status... I am a manager in education.

MS: *Do you own a car?*

I3: Yes, I do.

MS: *What are your experiences with traffic accidents?*

I3: Traffic accidents in Groningen with kids?

MS: *In general.*

I3: Not so much. I am driving a car for almost 20 years now. Maybe once something happened which wasn’t a big thing.

MS: *So it has not influenced you?*

I3: No, not at all.

MS: *Perfect, that was the part about general characteristics and now we will move on to the actual freedom of mobility. So the following questions of the interview are focusing on children's freedom of mobility. To get a first impression of your children's mobility pattern, it is important to understand the reason for the trip, the frequency of trips and the used transport mode. What are the reasons for your children's trips?*

I3: Trips? That also means going to school and stuff?

MS: *Yeah.*

I3: Okay, what are the reasons for the trips? Well, half of the time they have to go to school or sport or something like that and half of the time we go to something fun. So that is then the purpose.

MS: *And how often do they then travel per week?*

I3: How often do they travel per week? Every day at least two times.

MS: *Okay and what transport modes do they use?*

I3: Mostly, bike also car, well they don't use the car but they are in the car with me. We use the bus a lot. We use public transport a lot. Walking, but it depends on where we go when and what kind of weather it is. Yeah, we use all kinds of transport.

MS: *That sounds indeed like a big variety. Furthermore, the freedom of mobility is determined by three components. These components are the following and will be analyzed separately from another. I will start with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility. So, what transportation networks do you use?*

I3: Transportation networks... well the road is also a network, so we use the roads and the sidewalks a lot. But we also use the bus network. Yeah, that's what we use and also by car, but not so much in the city, more to get out of the city. We don't use the car... well, sometimes in the city. Most of the times we use the sidewalks to walk somewhere. We use the roads to bike somewhere or we use the bus to get into the city center or something like that.

MS: *And how do you perceive the transport network and its quality?*

I3: Perceive... what do you think of it?

MS: *Yeah.*

I3: That's a good thing. The bus is perfect. Well, they close the city center now which is a good thing for the city center but not when you wanna get into the city center. It's used to be better, but I can imagine why the city council thought "we have to do it in a

different way". The roads... most of them are safe and most of them are okay and the sidewalks is the same but of course you have these busy roads or these bad maintained roads, but they are not so much. By far for most of the roads or sidewalks it is okay.

MS: *Perfect. Does the chosen transportation network depend on the distance to the activity and the overall city size?*

I3: Yes, they do.

MS: *So when you close by you walk and when it's further...*

I3: Yeah, it depends on the weather. The weather is the first thing, I guess, if the weather is okay, we do a lot of walking. Second option is by bike, but the youngest is not biking that good, so he still has to learn. He knows how to ride a bike but being part of the traffic is a whole different story. And when we go out of the city, we may use the car, but it depends on where we go because I like public transport a lot and I am also a free traveler of public transport because my job. And the kids are really... they don't pay that much in public transport. So on the bus they are for free and in the train it's only two euros and it doesn't matter where you go. If you go to Amsterdam or you go to the south of the country it's always two euros, 2 euros 50 to get there and get back. So that is a good thing. That's how we determine what transport we use.

MS: *Do you think road designs are attractive according to visibility, guidance and road alignment?*

I3: When you grew up in this country it's okay but when you are new it's probably heavy because everything is going not towards each other... but everything is mingled up with the bikes and the cars. You gotta ... from my childhood on, I learned how to ride a bike with cars and busses and stuff like that, but when you are not used to that as a child, and you come here I can imagine that it is a bit crowded and not that organized which it is but you think it's not.

MS: *So you would say that for your children there is no issue in terms of visibility, guidance? All clear?*

I3: Visibility always is an issue in traffic because they are small, but you gotta make sure you are visible. What were the other components?

MS: *Guidance, that you know where to go and where you are supposed to be on the road.*

I3: Oh yeah, you have to figure out which way to go because there are no sign, yeah you have a few but they are for the tourists. If you wanna go... no, if you have to go somewhere in the city, you have to figure out yourself which way to get there. There is no signs everywhere.

MS: *So that could have some improvements?*

I3: Yeah, well I think so but still ... you are part of the city, so you know which way to go, because when we cycle, I don't take the fastest way because that's a busy way. There is a lot of bicycles there, but we do a bit of a round around and then it's okay. It's no problem because it is more quiet.

MS: *Perfect. Then the following questions consider accessibility. Because People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility. Do your children have access to all desired activities?*

I3: Yeah, they do.

MS: *Okay and how do you evaluate travel time, cost and comfort based on the mode of transport?*

I3: It's based first on walking or bike and not because it is for free but because it is healthy to do. But when the weather is really bad, we go by car and otherwise we go by public transport. So, the weather is a big thing, the distance is a big thing and the accessibility also. If you go into the region, don't bother going by public transport because it goes each two hours. So it is better to go by car because you can determine for yourself when you go there and go back. But when you are in a different part of this country it's probably more easy... it's more accessible. In the north of Holland it is not that accessible by public transport, it is by car, but the distance can be quite long for Dutch principles to organize it by bike or walking.

MS: *Do physical, mental or economic factors of yourself or your children affect the children's accessibility?*

I3: Well, at the moment because my back is hurting, but normally no there is no economic boundaries. What were the other ones?

MS: *Physical or mental.*

I3: There is no barriers. You have to determine which way to go but there is no mental issues of not getting somewhere or not a safety issue. You determine where you wanna go, would you like to go into the city center, would you like to go to another city, would you like to go to a playground and then you determine which way of transport you use. If it's over three kilometers for instance, then you use the bike and if it's hard to get there you use the car and otherwise you do it by walking.

MS: *So, it is no individual factors that determine ...*

I3: No, no, the boys are healthy and don't need anything particular for them. So no, they just go alone.

MS: *Perfect, then the final component determining the freedom of mobility is traffic safety. Based on research, parents are mainly concerned of safety in traffic when judging their children's freedom of mobility. Do your children have knowledge about traffic rules?*

I3: A bit, a bit.

MS: *And how did they learn them?*

I3: From me and at school, but at school they go to a square and they tell them "Here is a bike" and they paint a few streets. No, it is okay, but you don't learn it. It is the same as the driving license, you learn how to drive a car when you got the license and then you start and that's the same in traffic. But it's hard in traffic, also because not everyone is experiencing it in the same way. It's a issue, that's the part of traffic and growing up which is the hardest to learn kids because everywhere it's different. And in the morning, it can be different from the afternoon and that's a difficult thing for me to teach the kids.

MS: *How to interact in traffic...*

I3: Exactly. You know how to learn a bike, it's okay. You walk, you can be part of the traffic but being part of the traffic, being part of the community, it's a hard thing. You gotta learn them all these rules, about when at a crossover, where to look, who goes first, who goes next. It's a hard thing, yeah.

MS: *How do you perceive you children's equipment regarding safety?*

I3: Regarding safety? I should be making them wearing a helmet. I do not because I wasn't growing up wearing a helmet on the bike. You just fell, you stood up and you went on. But nowadays when I look at the playdates of my kids, there is most of them wearing a helmet, so I should make sure them wearing a helmet, but I could do that better. And also, I try to teach them in traffic, better make sure that you are safe instead of taking a risk. Maybe you are right, but still don't risk anything, don't go into the street when you are coming from the right, but if someone doesn't see you, you get into an accident, you've got the trouble, but you are right because you came from the right. But I teach them to be quiet to be safe.

MS: *And do you children know how to operate the chosen transportation mode?*

I3: How to operate the transport mode? Yeah, they do. They know what we expect from them when we ride a bike. They know what we expect from them when they are in the car or when we go by the bus. Yeah, they do know.

MS: *Do you think that the chosen transport mode is safe?*

I3: No. I don't think so.

MS: *The bike is not safe, the others...*

I3: No, not particular safe, not by definition. It's always, especially this city, there are some other cities in the country, but especially this city, there is a lot of people biking here. It's not per definition safe for kids, they gotta make sure, they are safe, but the traffic is not safe.

MS: *And how do you perceive traffic speed and traffic volume regarding your children? You have already said it's very busy but how do you see the speed?*

I3: The speed is slow; the kids determine the speed. Not when I am in the car, but I am not a frustrated driver. I just drive a car and I know how to drive a car, so that's okay. And the bus, yeah, you got some bus drivers who think it's Formula 1 over here, but that's just a few. And if we walk or we go by bike they determine the speed.

MS: *And how do you think the surrounding traffic participants are? Are they too fast, are they ...*

I3: Sometimes they are. By far, most of the people... there is no problem. They see the kids and they anticipate on how the kids move within the traffic, but there is also a few who don't and that's the one you gotta make sure you are safe, you are on the good side.

MS: *What roads do regard as safe regarding the children?*

I3: What roads? Those are the quiet ones. I don't know how to say it, but you got these big roads, there you got asphalt. Those are, from my experience... also the people are driving or cycling fast on that kind of roads. Then when you go just on a normal brick road... so we always, not always... but most of the times we go by brick roads, by 30 zones and stuff. We don't choose the big roads to go somewhere.

MS: *The following questions address children's participation in the community. Community participation is a right determined by the United Nations but is also crucial for the development of children. What types of activities do your children go to?*

I3: Everything you mean?

MS: Yes.

I3: Every week the oldest goes to ... well swimming just finished so now he goes to theatre lessons. And the youngest goes to swimming lessons and goes to judo.

MS: *And where are these activities located and do you think they are well accessible?*

I3: All of them are located in the city at different places. Theatre is really accessible; swimming is not that accessible, and judo is okay accessible.

MS: *Alright. And who do your children encounter there?*

I3: Encounter?

MS: *Yeah, who do they meet there?*

I3: Friends who do the same lessons, well not friends, classmates. They also go to school, which is also an activity and is school accessible? No, not at all because it is in the city center. So, that's an addition to your last question. And who do they meet? Yeah, children from the same age, where they do a certain thing together. They swim

together or they play together, they have theatre lessons, or they go to school and see their classmates.

MS: *And what are your children's roles at the activity?*

I3: Participants in every activity.

MS: *Active or passive?*

I3: No, active.

MS: *Great. And how do your children get there?*

I3: We always bring them. We always bring them to school and pick them up from school and I do that most of the times and I do that by bike. And then to swimming and judo lessons and the other one theatre lessons, my girlfriend is doing that and she most of the times uses the car, because she is not a biker. For her it's hard with the traffic and stuff. She is not that comfortable on the bike, so she is not really Dutch, she should be able to.

MS: *Overall, how free or restricted are your children in their travel possibilities?*

I3: They are pretty restricted because we live in a neighborhood in the city. They have possibilities to go into the neighborhood to the street next to us or to the playground which is in the neighborhood. But that's it. It's a few hundred meters, I don't tell them go into the city and come back by yourself. No.

MS: *So its just a radius of a hundred meters or how do you define the boundaries?*

I3: The boundaries I determine by sight. Where I can see them. Not from the house because that is hard from inside the house to see them but when I go out, I have to see them within a few minutes. I don't have to walk the entire neighborhood to find my kids. They know where to go and where not to go. Or maybe sometimes they go somewhere but they tell me, so I know where they are.

MS: Perfect. Then the last part of my interview is what you would like to do to increase children's freedom of mobility which also leads to enhanced community participation. How would you like to improve the transportation networks?

I3: We should do more into in the city with public transport. We should get more rid of cars because cars are for me by far the aspect that makes it not safe for kids. Also for adults, but still that's your own decision. For kids it's most of the times the car, so I you wanna do something, then increase the public transport and maybe not only busses. Maybe they can do something else, maybe not a metro network or something like that but trams and stuff. They used to have a tram over here, so that should be a good thing to make it more accessible. It's getting better because you have now all these parking lots outside of the city for tourist to bring them in by busses. But still a lot of people who live in the city own a car or own two cars. We also have two cars. We don't need it but

we use it, because we need to go into the region, but they should do something about that. They should make sure we use public transport more.

MS: *And what factors increase the quality of road designs?*

I3: Space, so more open space, no parking lots, it's about visibility. It's about what you see in traffic. What I experience when I'm part of the traffic, it is okay as long as I can see what is happening. If it's getting harder to see what is coming from the right or the left side, then it's getting dangerous. Visibility is everything and the less cars in the street parked, the more visible it is.

MS: *And how do you think accessibility can be improved?*

I3: To expand the public transport network, because there are still a few parts of the city that are really hard to reach by public transport and if you expand the public transport then you increase the moments busses are driving and stuff, then a lot of people will probably use the public transport far more than they do now. And then we get rid... well not rid of the cars but at least half of them should be able to go.

MS: *And what factors need to be addressed to increase traffic safety?*

I3: In this city?

MS: Yes.

I3: Visibility, parking spaces and make it harder for people to drive into the city, so make it more expensive or make it more hard to get somewhere by car and make it more easy or financially better to do it by public transport. Something like that. That's what they should do.

MS: *My last question: Do you have anything to add regarding children's freedom of mobility and their participation in the community?*

I3: Children's freedom of participating in the community is not only about traffic. It's also about the people, which also has an influence on how far they can go from home, where they go and what kind of way they go. It's not only about traffic, but there is a few other components that also have influence in what I think my kids should do and shouldn't do.

MS: *Alright, and can you maybe name a few of the factors?*

I3: Social safety, which people are living where and how do they relate themselves to kids and stuff. So, that's why you are always as a parent making sure that you control where the kids are. But when we only speak about being part of the traffic, then I don't think there is much to add, because it is okay, but they should do something about the cars.

MS: *Perfect, then you know about the ethical rules, and I will stop the recording now.*

Interview 4

(MS: *Muriel Schwarze*; I4 Interviewe 4)

MS: *This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting.*

For questions or withdraw please contact me, the researcher of this project: Muriel Schwarze

Do you like to participate in this research?

I4: Yes.

MS: *Okay, well, I know your name. What is your gender and your children’s?*

I4: Two times female and one time male.

MS: *Okay and how old are your children?*

I4: Seven and nine.

MS: *What is the composition of your household?*

I4: Just me and the kids.

MS: *What is your employment status?*

I4: I am a process advisor at JEN, the youth expertise center from the north of Holland.

MS: *Do you own a car?*

I4: Yes, I finally do.

MS: *What are your experiences with traffic accidents?*

I4: Almost zero. I had one big accident but that wasn’t in the north of Holland.

MS: *And has it influenced you?*

I4: Yes, I haven driven a car for twenty years.

MS: *Okay. These questions were about the generalities. And now we will dive into the freedom of mobility. So the following questions of the interview are focusing on children’s freedom of mobility. To get a first impression of your children’s mobility*

pattern, it is important to understand the reason for the trip, the frequency of trips and the used transport mode. What are the reasons for your children's trips?

I4: To show them something, like cultural things or museums. Sometimes sports as well. Or to go on holiday.

MS: *How often do they travel per week?*

I4: With the car or by bike?

MS: *In general.*

I4: Every day. To school of course every day and I think one or two times per week by car.

MS: *And what transport modes do they use?*

I4: They have their own bikes, or they hop on my bike and the car of course.

MS: *Furthermore, the freedom of mobility is determined by three components. These components are the following and will be analyzed separately from another. I will start with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility. So, what transportation networks do you use?*

I4: The train and the bus.

MS: *But also what type of roads?*

I4: Oh. Bicycle roads mostly and car roads and if we go walking, we of course go in the forest or somewhere like that.

MS: *So almost everything?*

I4: Yes, almost everything.

MS: *And how do you perceive the transportation network and its quality?*

I4: It's okay. The quality is good. Only the price, I think, is too high for public transport, but for the rest I think everything is pretty okay.

MS: *So you feel connected?*

I4: Yes. I think so.

MS: *Does the chosen transportation network depend on the distance to the activity and the overall city size?*

I4: Can you repeat that one more time?

MS: *Does the chosen transportation network depend on the distance to the activity and the overall city size?*

I4: Yes.

MS: *So what does that mean? When it's closer what do you use and when it's further away?*

I4: Yes, when it's closer I use the bike and when it's further away I use the car and when it's into a big city then maybe I will take the train if it's to Amsterdam. I wouldn't like to drive there.

MS: *Do you think road designs are attractive according to visibility, guidance and road alignment?*

I4: Road alignment.

MS: *How do you perceive the roads? Is everything clear? Do you know where to go?*

I4: Yeah, normally. Except if it is somewhere else, like far away distance, but I usually know where to go.

MS: *And do you also think that everything is visible?*

I4: Yeah.

MS: *So no issues there?*

I4: No. I will come everywhere, if it is by bike, by car, or by boat or whatever. I will use everything.

MS: *And you also think that the roads are attractive? They fit the city and fit the size?*

I4: Well, not everywhere. Some parts of the north, they have small roads without lines in the middle and then I think it's very hard to drive there, or harder. But I lived in Turkey, I know roads there, so that's quite a difference. So I am really happy with the roads here.

MS: *Perfect, thank you. Then the following questions consider accessibility. Because People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility. Do your children have access to all desired activities?*

I4: They have access. Yes, they have all access, but I don't have the time, that's something else.

MS: *But that is then a factor that of course limits their access.*

I4: Yes.

MS: *But theoretically they have, but in practice they don't.*

I4: Yes.

MS: *And how do you evaluate travel time, cost and comfort based on the mode of transport?*

I4: Can you explain the question to me?

MS: *So, if you walk, it of course it takes longer than if you go by bike or public transport is more expensive than the bike or petrol for cars is more expensive than walking. So, how do you define what transport mode you use if you look at the time that it takes, the costs that it comes with and the comfort. For example weather can also influence.*

I4: That's a big thing. If it is raining now, then I would probably take the car more often. But I love nature, so I try not to use my car so much. And also the costs of benzene is of course very high. So I try not to use it too much and also, I think it's good for your health to use the bike more often. And public transport is not my favorite because I always think it smells. So wouldn't choose that so much, but if it's really necessary then I would use it.

MS: *And if you are in a hurry, which mode would you use?*

I4: Depends, if I'm in the city, then it's probably easier to go on the bike, because then I'm quicker on my way and also, I don't have to park somewhere. But when I have to go a little bit further with no costs for parking, then I would probably take the car.

MS: *Perfect. Do physical, mental or economic factors of yourself or your children, affect the children's accessibility?*

I4: Yes, of course, when the children are sick, then I would probably use the car more and otherwise I would just say jump on your own bike.

MS: *So there are no issues in terms of physical, or mental, or economic factors?*

I4: Well, of course if you don't have money, so then I probably won't have a car, so I wouldn't use it. And I didn't have a car for very long time because I didn't have much money. So of course everything depends on your lifestyle and your growth and everything like that.

MS: *For sure. But physically there is nothing except for if they are sick?*

I4: Yeah, if I would have a broken neck, or whatever, then I can't drive, you know. But if I have something, then I would probably take the car faster.

MS: *Then the final component determining the freedom of mobility is traffic safety. Based on research, parents are mainly concerned of safety in traffic when judging their children's freedom of mobility. Do your children have knowledge about traffic rules?*

I4: One has, the other one thinks she has. No, that should have been more an education of school thing, I really mean. Because I can teach them, but to the parents they won't always listen, so I think, it's really up to school, also to teach them more rules. Or at least make sure that they know the traffic rules.

MS: *And how does the one know, and the other one doesn't?*

I4: Because one is too wild and she thinks she can do everything, so she wants to go on the bike and then her head is gone and she doesn't think anymore. And the other one is too bravely, good boy and he wants to do everything right so he always lifts his hand when he needs turn and always stops for the red lights. He is like this good boy.

MS: *So it has to do with their personality?*

I4: Yes, absolutely.

MS: *And how do you perceive your children's equipment regarding safety?*

I4: Well, the boy has a helmet and the girl doesn't wanna wear it, so that is also a character thing, and she is now a little bit bigger and she doesn't wanna wear a helmet because then her hair gets destroyed. So that is really a thing.

MS: *So you would say that the boy is safer than the girl?*

I4: Yes, absolutely.

MS: *Do you think you could change your girl's opinion on the helmet?*

I4: Never, no, she is too strong. Maybe my boyfriend can do because she listens to him but she doesn't listen to me.

MS: *Do your children know how to operate the chosen transport mode?*

I4: Can you clarify that?

MS: *Do they know how to ride a bike? Do they know how to use public transport?*

I4: Of course the bike they know, but they don't know public transport. They also can't touch my car yet but they also don't know how that works.

MS: *For the bike there is no issues?*

I4: No, bike is perfect.

MS: *Perfect. Do you think that the chosen transport mode is safe?*

I4: No, not always. I sometimes wonder, because there are a lot of scooters and we live a little bit out of the centrum now and if really go into the center, then there is so many bikes and so many scooters and they all go so fast and people just don't watch. One has to go faster than the other, so I don't think it's really safe but you have to rely

on the fact that your children are getting bigger and that they probably have eyes for themselves to see if they can cross or not.

MS: *So you have already touched upon it: How do you perceive traffic speed and traffic volume regarding your children?*

I4: Well on the bike we can go as fast as we want and of course in the car in the car I will always use the limits. I never go faster than I have to. But for on the bike, I have an electric bike so I have to go a little bit less fast than for my children, otherwise they can't keep up with me.

MS: *And how do you perceive others in traffic in terms how busy it is or not busy?*

I4: It depends where you are. Near my house it's okay but if I come to the centrum... it is really funny how I always thought that where I used to live-Korrewegwijk- it is always very busy there, but I never had troubles to bike there. It's a very safe way to go to the centrum. And now I live on the other side, so I always go to Oosterport and the UMCG to go to my work and then you have to pass at Forum, and then it is getting a little bit weird over there in that area. It is not safe, too many little children on the bikes, most of the time generation twelve-year-old. They just go to a new school, and they just put the bikes everywhere, and even when they are on the bikes, they just don't watch.

MS: *So you would say that there it is very busy?*

I4: Yeah.

MS: *And do you think that people are speeding in the city center?*

I4: Yes, I think so. Well, maybe not in the centrum but a little bit around it, definitely.

MS: *So what roads do you perceive as safe for your children?*

I4: Mostly the main roads, the biggest roads. I always go from my house to Damsterdiep and then to the end and then to the centrum. I never go in between houses or the small roads. I always take the big roads because they are the easiest ones, even if it is a little bit further away.

MS: *And you think that the big roads are safer than the smaller roads?*

I4: Yes, because there is one way traffic, so the bikes just go that way and on the other side of the road the bikes go the other way. If you just take the small roads, then it's coming from everywhere, so I don't have the good sight to see what is going on.

MS: *Do on these big roads, bikes and cars share the street or is there a little in between area?*

I4: Yes, there is a red area for the bikes and a different area for the cars.

MS: *Perfect. The following questions address children's participation in the community. Community participation is a right determined by the United Nations but is also crucial for the development of children. What types of activities do your children go to?*

I4: They go to scouting, both of them, and one is going to swimming lessons and N. doesn't have sports at the moment. That's it.

MS: *And where are the activities located and do you think that they are well accessible?*

I4: Yeah, they are well accessible, and they are also very near by my house, like maybe ten minutes by bike, so that's pretty good.

MS: *And who do your children encounter there?*

I4: Their friends, well not friends actually, more sports colleagues, that's it.

MS: *And what are your children's roles at the activity?*

I4: One is still trying to get his diploma A and the other sport is building and being outside and creating wood things together, making campfires, things like that.

MS: *So they are very active or more passive?*

I4: More active.

MS: *That is good to hear. So how do your children get there?*

I4: One is by car because it is far away, and the other one is by bike. Swimming is by bike and scouting is by car.

MS: *And you always bring them?*

I4: I try to.

MS: *And otherwise they go alone or how does that work?*

I4: No, then they don't go at all. It's the kind of sport where you don't have to go every week and sometimes they also drive with somebody that lives nearby who also has a son in the same group. So they go together. Things like that.

MS: *So either they go with you, or not or with another parent?*

I4: Yes.

MS: *Okay, then how free or restricted are your children in their travel possibilities?*

I4: Well, as I said, if I have the time, then I can go everywhere with them, then I don't mind. Near by the house they can do everything by themselves, but they are still small, so I don't want them to get too far alone.

MS: *And how would you define the area where they may do what they want?*

I4: I think it also has to do with my accessibility, how far can I go walking or by bike. Maybe shouting distance is a good way to describe it. If I can just call them from outside, that would be nice. But they are getting bigger, so they won't listen anymore.

MS: *So now my last questions are about increasing children's freedom of mobility because this can eventually lead to enhanced community participation. By that I mean that: what would you want so that your children can travel alone or further. So how would you improve the transportation networks?*

I4: I think I would probably skip scooters. Scooters and fat bikes and things like that, just normal bikes and just electric bikes. And public transport, I think should be lots cheaper, lots, lots, lots cheaper than I think people will also go more by public transport, especially for nature and everything. And that's it.

MS: *And what factors increase the quality of road design?*

I4: I think, I saw one-time special kind of paint, lighting in the dark, that's a really good one. Also, for cars, just really make a line in the middle so you have separate roads-one for that way, one for that way. And I think more bike roads, more separate, like cars and bikes separate from each other. I think that will help a lot.

MS: *How do you think accessibility can be improved?*

I4: What do you mean?

MS: *Should there be more activities, where should the activities be located, how is it easier to get there?*

I4: I don't have really an answer for this one.

MS: *Okay. So you are actually happy with the situation?*

I4: Yeah, if something is located somewhere, I don't think they should really think how people get there, I think maybe it's different for work, when you have to park in the center. So when my colleagues and I have an appointment next week, then we go somewhere where we can all be together, without parking or where they all have to travel so much because they are from the three northern provinces-Groningen, Friesland, Drenthe. Then we meet in the middle of all these three and that is where we go by car.

MS: *And for your children you don't think that if something could be closer, they can go there easier?*

I4: Yeah, of course, but everything is very close to my house, so I don't have anything to complain about.

MS: *Perfect. Well, you have already talked about the scooters and the fat bikes, but are there other factors that need to be addressed to increase traffic safety?*

I4: Lightning, I think more from the group, not so much upstairs, but more like when it's dark and rainy, then you can't see the lights very good and that is also for bikes the same. I think that should be a big plus for the future to work on like that. And also the smoothness of the roads, that should be ... not so slippery, but that's maybe just in my head, I don't know.

MS: *Well, that's your opinion, so that is what matters or counts.*

I4: And I think more areas without cars. Like in the centrum more cars and things like this.

MS: *So overall car reduction as well?*

I4: Yes, absolutely, I just have my own car, but I am really not a big car fan.

MS: *Then we have also reached the final question which is: do you have anything to add regarding children's freedom of mobility and their participation in the community?*

I4: Maybe I think somebody should start a network for kids to travel or just have the children have more experience in travelling by public transport. There is nothing really to do for kids, make a special day so all the kids can travel, like one free day a year. And of course children are still free of paying, so teach them how to use everything. I think this should need a little more attention.

MS: *And you said something a network for children, what do you mean by that?*

I4: Maybe something on facebook or tiktok that shows kids how to be safe in traffic. Like a game or ... this is just coming up in my head, or that children can talk about safety when they don't feel safe or they do feel safe in some areas. Maybe there could be some more investigation about when children feel safe and when they don't feel safe. I think like a network group or a website, for example for my work we work with 99 grams, it is a website for young people who have problems with eating and they can talk to each other about anything and they really do and then you can get so much information out that can be useful for the future, I hope, for the kids.

MS: *So it's not only about what parent's think but also what the children want?*

I4: Yes, definitely.

MS: *Perfect, then please let me know if there is anything and I will stop the recording now.*

Interview 5

(MS: Muriel Schwarze; I5 Interviewe 5)

MS: *This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting.*

For questions or withdraw please contact me, the researcher of this project: Muriel Schwarze

Do you like to participate in this research?

I5: Yes.

MS: *Okay, I know your name. Then, what is your and your children’s gender?*

I5: I am female, and my children are two boys.

MS: *And how old are your children?*

I5: Seven and four.

MS: *Great, and what is the composition of your household?*

I5: My husband, me and two children.

MS: *What is your employment status?*

I5: I am a teacher in a primary school.

MS: *And do you own a car?*

I5: Yes.

MS: *What are your experiences with traffic accidents?*

I5: I don’t have any experiences with traffic accidents myself.

MS: *So, nothing has influenced you?*

I5: No.

MS: *Great. So, these questions were about general characteristics and now we will dive into the freedom of mobility itself. So the following questions of the interview are focusing on children’s freedom of mobility. To get a first impression of your children’s*

mobility pattern, it is important to understand the reason for the trip, the frequency of trips and the used transport mode. What are the reasons for your children's trips?

I5: From home to school and back and to sports or to friends.

MS: *And how often do they then travel per week?*

I5: Daily, but not by themselves. We use the bakfiets, my oldest son has his own bike, so he sometimes goes on his own bike. But to be honest, I prefer to have them both in the bakfiets, because then I'm in control and it's still a bit busy in Groningen with all the other traffic, cars, and bikes. I feel like, young children do not really know the rules in traffic and that's why I don't really like it when he is going on his own bike because he doesn't know the traffic rules.

MS: *So then, the oldest one sometimes uses his own bike but what other transport modes do they use?*

I5: The step quite a lot. That's it.

MS: *Okay. Furthermore, the freedom of mobility is determined by three components. These components are the following and will be analyzed separately from another. I will start with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility. So, what transportation networks do you use?*

I5: What do you mean?

MS: *Roads, public transport, cycling paths...*

I5: Yeah, the roads, the cycling paths and the sidewalks.

MS: *And how do you perceive the quality of the transportation network?*

I5: That is perfect. I feel like here in Groningen, it is very well organized.

MS: *Does the chosen transportation network depend on the distance to the activity and the overall city size?*

I5: What do you mean?

MS: *As in if it's close by you walk or far away you go by car or public transport.*

I5: Yes, that's it. So, if it is close then they take the step because they really like it and then we use the sidewalk mostly. But if it is a little bit further away then we take the bike, but I prefer to take my bakfiets. And if it's more than ten minutes then we will take the car.

MS: *And do you think that the roads designs are attractive according to visibility, guidance, and road alignment?*

I5: Yeah, I think so, but that's also because I am Dutch, and I am used to it. Even if I am on my bicycle I always know where and on which side to ... but if you are not used to it, then I can imagine that it might be unclear because there are not everywhere visible cycling paths, but for me it's clear and easy to use.

MS: *So, no issues there? You can see everything, know where to go?*

I5: Yes.

MS: *Then the following questions consider accessibility. Because People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility. Do your children have access to all desired activities?*

I5: Sorry, what do you mean?

MS: *As in, can they go wherever they want?*

I5: Yeah, I think so. If it is too far away, we can take the car, we have everything at home. I mean if you don't have a car you might not have access to everything, but we have the car, we have the bicycle, so they have access to everything.

MS: *Great, and how do you evaluate travel time, cost and comfort based on the mode of transport?*

I5: What do you mean?

MS: *If you go by car, it is of course a little bit more expensive because of the petrol prices, if you go by bike, it might be less comfortable because of the weather sometimes.*

I5: We don't have any issues. I don't experience any issues with that. We are in a luxury position that we have everything so we can just use what is most convenient at the time.

MS: *So, what factors would influence you to choose for the bike or...*

I5: Like you said, the weather and the distance. We even have two cars, so before we only had one car, but then my husband needed to take the kids to sports on Friday and I took the car to work, he was really annoyed because the weather was bad. So I was like, okay, I will just buy a cheap second car, and then we never have any issues again. He can always take the car; I can always take the car. But this is really a privilege, you know. If the weather is bad, we take the car or if it is far away, we take the car, but otherwise I really like to take the bike.

MS: *Apart from that, do physical, mental or economic factors of yourself or your children affect the children's accessibility?*

I5: What do you mean?

MS: *Is there something that restricts you because your children are not physically capable or you have some mental opinions, why you would rather go by bike or by car, like environmentally.*

I5: Yeah, well I think if you are able to, then you should take the bike because it is healthy, and it is also more often easier in the city to take the bike to get somewhere. But as I said before, if it is further outside of the city, then we sometimes take the car. But my first preference is the bike, also because it is better for the environment and your own health.

MS: *Great. Then the final component determining the freedom of mobility is traffic safety. Based on research, parents are mainly concerned of safety in traffic when judging their children's freedom of mobility. You have already started about it, but do your children have knowledge about traffic rules?*

I5: Well, the youngest one has no clue, he is four. But the oldest one, he has his own bike, and sometimes he takes it to school. We ride his bike to school, but I have to tell him every time what is happening: okay there is a car coming from the right, there is the "haaiantanden" you should stop, but he doesn't know, he is starting to learn now. I think it is a weird think that children learn to how to bike here on such a young age and they don't learn the rules. They learn the traffic rules much later, so that is a bit of a weird contradiction. Everybody learns how to cycle when they are four, but they only learn the rules when they are eight. But what do you do in between? That's what I think is dangerous. The young children in the traffic.

MS: *But then you teach them?*

I5: I try to teach them.

MS: *Fair, but then also how do you perceive your children's equipment regarding safety?*

I5: Well, that's also something I see more often ow, but typically Dutch is to put your kid on the bike without any protection. So my children don't have any protection. Even in the bakfiets I don't use the straps. Why not? I don't know but that is just because we are so used to cycling and the traffic here, that we think that we can do it without, but I think, it is good to see that most parents or a lot of parents have helmets for their children. That is a good development.

MS: *Okay, so might consider that as well?*

I5: Maybe.

MS: *Okay, well then, the youngest one of course not, but does the oldest one know how to cycle or how to use the chosen transport mode?*

I5: Yeah, he does, but I wouldn't let him alone on the bike crossing a road. I will always be there, so he knows how to use it, but he doesn't know all the rules from cars and motorbikes, so I would always be close to him, to help him.

MS: *So overall do you think the bike is safe?*

I5: I think the bike is safe if you are there to help them.

MS: *And them, looking at others in traffic, how do you perceive traffic speed and traffic volume here in the city regarding your children?*

I5: Well, I think it is pretty busy. The roads are busy with other traffic, but the Dutch people are so used to this traffic with cyclists and children going to school that everybody... I think that makes it safe because everybody is used to it, so everybody keeps an eye out for each other. And there is a lot of traffic lights that are guiding you. For example from our house to the school, there is a traffic light and that is also helping you to cross the busy roads. That makes it easier for all the traffic to participate on the same road.

MS: *And do you think that there is speeding here in the city?*

I5: Well, there is sometimes, but I don't think there is a lot of speeding because there is always a roundabout, or traffic lights or a crossing, or "haaintanden", so there is a lot where you have to stop, so there is not a really a chance to speed.

MS: *I understand. So what roads do you perceive as safe regarding your children?*

I5: I guess where there are no cars. So for example in the park, or roads that are a bit wider than usual or where there is a special cycling path where you do not have to share the road with the cars. That makes it easier.

MS: *Then the next part: The following questions address children's participation in the community. Community participation is a right determined by the United Nations but is also crucial for the development of children. What types of activities do your children go to?*

I5: They go to sports, they go to ... do you also mean indoor playgrounds?

MS: *Yeah, whatever.*

I5: Monkeytown, or JumpXL, you know the indoor children's facilities or swimming pool, the park here with the climbing area, small playgrounds, there is one over there. Or the kinderboederij, the animal thing...

MS: *The petting zoo.*

I5: Yeah, that's it, I guess.

MS: *And where are these activities located and do you think they are well accessible?*

I5: Skateparks is also another one, but I think that they are mostly in and around parks. And here we go a lot, in the Noorderplantsoen or the Stadspark. Stadspark is easy also to reach by car because there is a parking area. That makes it nice if you want to take the car. This one is only accessible by bike, but I don't think that there is a lot of

facilities for children. If you compare it to other cities, Groningen is missing out on some.

MS: *But do you think it is easy for you to get to all of them?*

I5: Yes, it is easy to get to them.

MS: *Who do your children encounter there, at the activities?*

I5: Other children's and their parents. That's it, I think.

MS: *What are your children's roles at the activities?*

I5: Play.

MS: *So it is an active role?*

I5: Yeah, they play, they use the facilities there.

MS: *And how do your children get there? You have already mentioned that you bring them.*

I5: Yeah, by bike or by car and I always stay there. I don't bring them and leave, I always go with them and play or wait, drink coffee.

MS: *So then overall, how free or restricted are your children in their travel possibilities?*

I5: Well, they need me to travel there, but when we are there, I don't know if that's also what you mean, but when we are there, they are quite free to do whatever they want or go wherever they want, as long as it is within the safe area.

MS: *So if you are with them, they can basically travel anywhere, but if you are not there, then they...*

I5: ... cannot go anywhere.

MS: *That's easy. Then about my last part, because we would like to increase children's freedom of mobility because that also eventually leads to advanced community participation. So now it is about your opinion, what you would like to improve, so that your children can maybe also one day go on their own. How would you improve the transportation networks?*

I5: I think more cycling paths or parking facilities, if there is a children playground or if there is something arranged for children, then parking facilities are really helpful. That's it I think.

MS: *Okay, then what factors increase the quality of road designs?*

I5: You mean like signs or the quality of the roads?

MS: *Exactly.*

I5: Well, I have to say that it is already pretty well organized here in the Netherlands and in Groningen, but of course you need to have good roads, like even roads.

MS: *You mean like flat, not bumpy?*

I5: Exactly. And signs to make clear where you should go. If you are with your bike or car, that you know which road is yours. Also, try to see it from the kid's perspective. If you are a child and you start to learn the traffic rules, what are the things that would help them? Because I think adults don't have any problems, but maybe we can look at it more from a child's perspective. What would be helpful? Maybe the signs should be lower or maybe specific road signs designed for children, so that they know "Oh this is ours, this is for us, we should go here". I am just making this up.

MS: *Perfect, if that is your opinion, then that's what I am looking for.*

I5: But other than that I think it is already pretty well organized in the Netherlands and in Groningen. I am quite happy with the design.

MS: *And how do you think accessibility can be improved?*

I5: Like I said, if there is something arranged for children then the parking facilities are really important.

MS: *And apart from that?*

I5: Not too far out of the city. I think parents like it, if you don't have a car, it's nice if you can go everywhere by bike. So if it is accessible by bike that would be nice and if not, then parking facilities for the car. That would be the most important, I think.

MS: *So also having the activities closer by I hear?*

I5: Yeah, and if it is further away, then having the parking facilities. And if it is further away then make sure that a cycling path is going there. That would be nice for the parents without a car.

MS: *Okay, then what factors need to be addressed to increase traffic safety?*

I5: I don't know. Maybe more training in schools, like safety training or start the traffic lessons maybe a bit earlier in school. Encourage parents to use helmets, because they didn't do it right, because I am not using it. Somewhere the promotion of wearing helmets can be improved, because when I look at myself, I don't think it is important enough. That could make it safer for children if everybody uses them. If something happens, they wear a helmet. And for the roads: to have the cycling roads and the cars separate. That is always safer than to have them all one road.

MS: *Then my last question is do you have anything to add children's freedom of mobility and their participation in the community?*

I5: No, I don't think so.

MS: *Then please let me know if there is anything and I will stop the recording now.*

Interview 6

(MS: *Muriel Schwarze*; I6 Interviewe 6)

MS: *This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting.*

For questions or withdraw please contact me, the researcher of this project: Muriel Schwarze

Do you like to participate in this research?

I6: Yes.

MS: *The next questions are about general characteristics. I do know your name so that is fine. What is your and your children’s gender?*

I6: My gender is male and my children’s are female and male.

MS: *And how old are your children?*

I6: The female is nine, the male is seven.

MS: *What is the composition of your household?*

I6: Two dads, two male parent figures and two children. And I have an au pair living and working three days.

MS: *What is your employment status?*

I6: For myself employed and my partner as well.

MS: *Do you own a car?*

I6: Yes.

MS: *What are your experiences with traffic accidents?*

I6: Oh, none, I think. We hit a deer once, five years ago on the highway returning to Groningen with a couple of friends but that’s it.

MS: *But that has not influenced you in any way?*

I6: No. I don’t have an extensive experience with car accidents.

MS: *Alright. The following questions of the interview are focusing on children's freedom of mobility. To get a first impression of your children's mobility pattern, it is important to understand the reason for the trip, the frequency of trips and the used transport mode. What are the reasons for your children's trips?*

I6: Going to school, going to extra-curricular activities and together just going on family outings or sometimes to just visit relatives.

MS: *And how often do they travel per week?*

I6: Depends a little, going to school as well?

MS: *That is included.*

I6: Travel movements per week would be going to school and sometimes they also walk from school to gym class. So let's say three a day for that and I think in general four per day and maybe in the weekend less. But even then, we quite often just go for a walk into the city. So I think maybe four a day. So four times seven, 28, 25? Between 25 and 30, something like that.

MS: *And what transport modes do they use?*

I6: Walking, if that is transport as well, I presume. Walking, bike, sitting on the back of the bike and car and sometimes, but not that often, we use the bus or train.

MS: *Also within the city?*

I6: Yes, last week, it was raining a lot, so we actually took the bus to Pathé, the cinema. But N. is now really learning how to bike now, so then because it was raining so hard, in the end we decided to take the bus. And yesterday my mother was here, and we went to a concert at Oosterpoort, so we were also debating that we could also just take the bus because it kinda drops you off there but then we decided to visit some places, some shops along the way, so we walked. So, we use sometimes within Groningen the bus.

MS: *Furthermore, the freedom of mobility is determined by three components. These components are the following and will be analyzed separately from another. I will start with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility. So, what transportation networks do you use?*

I6: Walking, bicycle, car and public transport.

MS: *So normal roads, bicycle paths, sidewalks?*

I6: Yes.

MS: *And how do you perceive the transportation network and its quality?*

I6: Good. Maybe also a bit because we are quite central. No, in general the quality and the connections, the quality of the roads is good and the choice of routes etc. is also okay. The only thing is that there is usually a lot of road work in Groningen. Sometimes you get the impression that Groningen is continuously being built or rebuilt. So for cars that can be a bit frustrating, but walking, or bike or even public transport is okay.

MS: *Perfect. Then does the chosen transportation network depend on the distance to the activity and the overall city size?*

I6: Yes, obviously I think.

MS: *So when it's close by you walk and further away you...?*

I6: Yeah, obviously when it is close by, we walk and if it's quite far away we will either ... but then it depends a bit. I know some time ago B. had a birthday party of some of their friends. So we were like, we can take the bus, also just because I like taking the bus, and I also like them to experience taking the bus. But then, I think, we had to change three times to get there or have a very long wait of forty minutes at one point. So I just decided we take the bike, even though in the end it didn't rain but that comes into a fact as well. But obviously when it becomes very long or complicated then you shift to another mode of transportation.

MS: *And do you think road designs are attractive according to visibility, guidance and road alignment?*

I6: What is road alignment?

MS: *That it fits the surrounding.*

I6: I think so. It is not something I think about very explicitly quite often, but I think in general in Groningen or in Europe in general, opposed to the States, I like how roads are part of the city scape.

MS: *And what about visibility and guidance? Do you think everything is clear?*

I6: Guidance are road signs etc..

MS: *Yes, that you know where to go.*

I6: The thing is, that I lived in Groningen that long, that I don't think I don't need a lot of guidance, but even looking which busses to take online is easy.

MS: *Perfect. Then the following questions consider accessibility. Because People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility. Do your children have access to all desired activities?*

I6: Yes, I think so.

MS: *And how do you evaluate travel time, cost and comfort based on the mode of transport?*

I6: Do you want me to say these things per mode of transport?

MS: *However, you can...*

I6: In general, I think, it's good. We don't use public transport within the city that often but, so for children it is free, which is nice, and I have for the train. But we wouldn't take the train quite often within the city, although we have done as well. So we have a subscription, where we one-time pay a certain amount and then it's just free, also the train. That is quite easy and the rest: costs are in way sometimes just the way they are and since we are in the fortunate position that we have two steady incomes, so I don't think we don't often think "oh we don't take the car because of costs of fuels". But obviously the costs are quite big now, high. For us that is not a big factor. For me environmental issues or sustainability would be something to take into account. I never take the car within Groningen city limits. I think never, then I would either take the bus or decide we are just going to go for a long bike ride. Also just because just to model or show them, that you don't have to take the car always.

MS: *Do physical, mental or economic factors of yourself or your children affect your children's accessibility?*

I6: That's maybe what I just said. No, because we are very fortunate, but obviously we take these things into account but it doesn't limit or hinder us. It is not a big factor to weigh.

MS: *And any issues with physical or mental factors?*

I6: No, he can't ride a bike yet, but that is not necessarily a physical thing.

MS: *Then the final component determining the freedom of mobility is traffic safety. Based on research, parents are mainly concerned of safety in traffic when judging their children's freedom of mobility. Do your children have knowledge about traffic rules?*

I6: Yes, in an age-appropriate way, I think.

MS: *So you have taught them or in school?*

I6: Yes, they have traffic lessons in school. We obviously when riding a bike explain how rules work, which signs on the road or which signs you can see. Just the general rules. For him, also because he is seven and also because he has a bit more difficulty in understanding language at this point still and also because at this point, he doesn't ride a bike himself yet, he is going to in one or two weeks I think. And then we will obviously have to explain to him, you have to stop here, because you see the triangles on the ground, or you have to give way. I think in general; they have for their age they have a good grasp of the rules.

MS: *How do you perceive your children's equipment regarding safety?*

I6: Nonexistent. She doesn't like using a helmet anymore. He is riding a bike now like I said. But I think like we would have to put on a fight if we would wanna make him wear a helmet. So last year, when we taught him how to ride a bike, he had a helmet one. The last time he doesn't, but he is really... riding is quite stable, it's just breaking now but obviously in the car they wear seat belts or he still has a children's booster seat. Both of them don't have a car seat anymore, but he has a booster seat still, she doesn't need a booster seat, but she obviously has the safety belt.

MS: *Well you have already talked about it a little bit, but do your children know how to operate the chosen mode of transportation?*

I6: Yes. One yes and one learning to.

MS: *And do you think that the chosen transport mode is safe?*

I6: Yes, although I think in Groningen some of the roads can be quite busy. So for being on the bike I am not always certain that people will take into account that there are children on bikes. In general everywhere people will do that because I think it's one of the worst nightmares to maybe hit or kill a child or anyone in traffic. But I know for example this road, the Ebbinge, people can drive like 60, 70km/h even though I think it is 30. But that is more at night when they are not driving. But even on a quiet Sunday, cars will just from the beginning to the end just accelerate, accelerate, accelerate and that's sometimes very scary. But the question was if it is safe?

MS: *Yes, if the chosen transport mode is safe.*

I6: So in general it is, but for the bikes we are kind of, and also walking and crossing the road we are quite aware of what they are doing.

MS: *You have already answered my other question which was: how you perceive traffic speed and traffic volume. Then what roads do you perceive as safe regarding your children?*

I6: I think in general all roads. Some of them I am a bit more worried about. Also the one I just mentioned but it is also like the main route to the city. We are not using this road because of it.

MS: *The following questions address children's participation in the community. Community participation is a right determined by the United Nations but is also crucial for the development of children. What types of activities do your children go to?*

I6: School is also an activity I presume.

MS: *Yes, a very fun one.*

I6: School and within school sometimes field trips to the library or walking to the gym class. Hobbies, so I think that is one category. Leisure activities or a combination of those. Or educational or social, like going to the library or going to a movie in Forum

or combining them too. Just walking around, shopping also like groceries obviously. And not within Groningen but visiting family and friends.

MS: *And where are the activities located and do you think that they are well accessible?*

I6: Yes, some of the activities are a bit further afield or Groningen-intensive purposes but I think, in general they are easy accessible, just the distance is far. The roads leading there are fine.

MS: *And who do your children encounter there?*

I6: Teachers, friends, teachers/leaders of activities, sometimes family or people working somewhere, people working in a store, people working in the library.

MS: *And what are your children's roles at the activities?*

I6: Quite often active, because it is an activity geared towards them because otherwise, they might also stay home. And sometimes more passive because they just need to get along when we do something that we need to get done, but if they can't stay at home they need to go along.

MS: *How do your children get there to the activities?*

I6: By the modes of transportation we described earlier?

MS: *But then with you together?*

I6: Yeah.

M: *Or alone?*

I6: B. now we sometimes say you have walk to S. alone and then we text the parent "We are coming now". So very small distances. Actually, S. and B. went to the park two weeks together and tool like a picknick with them. So is venturing out a bit more by herself but he isn't. Not yet.

MS: *And how would you determine the boundaries that B. is allowed to go by herself?*

I6: Mainly the geographical distance, a radius that I am with okay and also in my mind if there are big points I would be worried about, I would sit down with her first. But I think in the next period we will let her venture out more, but it also depends on the mode of transportation. Walking somewhere is fine, going on the bike by herself, I think would be fine, I think in general, a lot of parents, we as well, let children, let her of being nine years let her venture out on her own. Let's say you can go to Forum on your own that's too far. Although, I honestly think that she would be fine doing it. And it has also to do with the composition of the group she is travelling with because if she with a friend, I would be a bit more worried to send them on the bike, because I think they would be chatting so much that the concentration for the surroundings is lessened because of the social interaction.

MS: *Then overall, how free or restricted are your children's in their travel possibilities?*

I6: I think pretty free, I think the main boundaries are the ones that we give to them. In a way very free because they can go anywhere with us, in a way very bound because they can't go anywhere without us.

MS: *I see. Then it is of course about increasing children's freedom of mobility which then also eventually leads to enhanced community participation. So now it is about your opinion and how would you improve the transportation network?*

I6: No, I don't feel there is much to be improved. No, the first thing and probably the only thing that comes to mind is again this street and at the end of the street the traffic light where cars quite often... because you have cars that turn right have to wait for the bikes to go first, but they don't want to, so they either aggressively humming their engine or they are also just on the bicycle path. That's something that irritates me and that's also something that is a factor why I wouldn't want her to go there, because you never know if she is there and a bit slow and you have a driver who is going to yell, which they sometimes do- I don't think people will yell to children that quickly or just the unsafety. On the other hand I'm also unsure how to improve it besides maybe changing it for separate traffic lights for bicycles which you have in a lot of places but not there. That would be kind of like the only.

MS: *And are there any other factors that increase the quality of road designs?*

I6: No. I am thinking about all the other things we mentioned like guidance ad road alignment, but I think they are all quite optimal already in my point of view.

MS: *And how do you think accessibility can be improved?*

I6: How does accessibility diver from what we have just talked about?

MS: *For example: activities closer by or more activities?*

I6: Things being closer is always easier, on the other hand it's also just the way it is and I think it is also a good practice that some things are a little bit further so that you have to go there. I am actually happy that that is as well.

MS: *What factors need to be addressed to increase traffic safety?*

I6: I think, the thing I just mentioned, that is a good example.

MS: *The last question is if you have anything to add regarding your children's freedom of mobility and their participation in the community?*

I6: No, just the term participation in the community is this very grand way if saying it. So in the beginning I wasn't sure if they participate in the community that much, obviously they do because they are part of the community. That's the only thing I'm thinking: are there activities I would deem important in that way, but nothing comes to my mind.

MS: *Then you know about the ethical rules, and I stop this now.*

Interview 7

(MS: Muriel Schwarze; I7 Interviewe 7)

MS: *This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting.*

For questions or withdraw please contact me, the researcher of this project: Muriel Schwarze

Do you like to participate in this research?

I7: Yes.

MS: *Well, then we start with the general characteristics. I know your name. What is your and your children’s gender?*

I7: My gender is male. And my daughter is female, and my son is male.

MS: *And how old are your children?*

I7: Nine and seven.

MS: *And what is the composition of your household?*

I7: There are two fathers, one girl, daughter and one boy, son and a dog.

MS: *What is your employment status?*

I7: I am a pulmonologist.

MS: *Do you own a car?*

I7: Yes.

MS: *And what are your experiences with traffic?*

I7: In the city?

MS: *General in your life.*

I7: I really hate jams.

MS: *Did you have any specific traffic accidents?*

I7: No, never. Well is sometimes bumped with M.'s car into a little wall in Italy and also someone bumped into my car a little bit on a parking spot.

MS: *But that has not affected you?*

I7: No.

MS: *Well, then this was about the general characteristics. So the following questions of the interview are focusing on children's freedom of mobility. To get a first impression of your children's mobility pattern, it is important to understand the reason for the trip, the frequency of trips and the used transport mode. What are the reasons for your children's trips?*

I7: Going to school, going to judo, but our au pair is doing that, going to circus lesson, going to speech therapy and we travel for leisure by bike or by car to family meetings or play dates or whatever.

MS: *And how often do they travel per week then?*

I7: Every day to school and well our son is learning to bike and he is really progressing so yesterday he biked for four kilometers.

MS: *So also just for fun apart from going to school?*

I7: Trips, going to playgrounds.

MS: *You have already said that you use the bike but also use the car. Is there any other transport mode that you use?*

I7: Walking to the park with the dog, but also with the children to the park. I think sometimes they go by bus, but I never go with them, also always the other father is going.

MS: *Furthermore, the freedom of mobility is determined by three components. These components are the following and will be analyzed separately from another. I will start with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility. So, what transportation networks do you use?*

I7: The streets.

MS: *All kinds of, so bicycle paths, sidewalks, big roads, small roads.*

I7: Yes.

MS: *And how do you perceive the transportation network and it's quality?*

I7: I think for biking it is quite fine, but some roads are really busy especially in the morning and in the evening. So that is sometimes a little bit problematic if bikers and

cars use the same road and to other road users: especially the electrified bikes, I really hate them, because they are really fast, especially for meals, like getting meals to people. Well, they are really travelling fast. So that is annoying, but in general I like the streets in Groningen.

MS: *Good. Does the chosen transportation network depend on the distance to the activity and the overall city size?*

I7: Well, we can do a lot by bike, even going to judo, which is quite far. So I think in Groningen, the bike is usable everywhere.

MS: *And when would you choose the car?*

I7: When I am going outside of the city or if I am going to spots that are really south to the city or really north to the city, but that is sometimes.

MS: *Do you think road designs are attractive according to visibility, guidance, and road alignment?*

I7: In general yes.

MS: *So you know where to go, everything is clear?*

I7: Well there are some difficult spots in the city. Like this crossroad is difficult and other crossroads sometimes. In general it is quite good visible, and I know what to do.

MS: *And what makes these crossroads difficult?*

I7: A lot of traffic, they are driving really fast and then they go to the left and also straight ahead and the bikers also go. Well we see a lot of accidents happen in this area.

MS: *Then the following questions consider accessibility. Because People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility. Do your children have access to all desired activities?*

I7: Yes.

MS: *And how do you evaluate travel time, cost and comfort based on the transport mode?*

I7: Good.

MS: *So the bike is comfortable and quick and cheap, and the car is the same?*

I7: The car is more expensive than the bike because of gas oil prices.

MS: *But the comfort is the same?*

I7: In the city yes.

MS: *Do physical, mental or economic factors of yourself or your children affect the children's accessibility?*

I7: No.

MS: *Nothing?*

I7: No.

MS: *Alright. And Then the final component determining the freedom of mobility is traffic safety. Based on research, parents are mainly concerned of safety in traffic when judging their children's freedom of mobility. Do your children have knowledge about traffic rules?*

I7: The girl a little bit, the sun doesn't really have. Well he sees some dangers, but we still have to keep him close while biking.

MS: *And how does the girl know about the traffic rules?*

I7: She learned. We learned her how to be on the street, so I think she has basic knowledge about.

MS: *And how do you perceive your children's equipment regarding safety?*

I7: I think they have both good bikes which makes it safer. We have a helmet, but we don't use it, so that's a think we maybe should do. In general I think, it is quite safe. Travelling in the city.

MS: *You have already mentioned that the son is learning it, but do your children know how to operate the chosen transport mode?*

I7: B. knows how to operate. N. doesn't know really; well he is learning to start biking. He can bike and he also can break, which are the main points of biking.

MS: *Then, do you think the chosen transport mode is safe?*

I7: Yes.

MS: *And how do perceive traffic speed and traffic volume regarding your children?*

I7: Well, as I said, the electrified bikes are really dangerous in the city, because they have almost the same velocity as motor bikes, but they are silent, so they are silent killers, I think.

MS: *And what about cars, is there any speeding in the city?*

I7: Well you can drive 50km/h in the main road in the neighborhood and I hope they make it 30 because I think that is safer.

MS: *What roads do you perceive as safe regarding your children? Which ones do you use with them?*

I7: Especially, if it is not the main roads. So, at the main roads we keep them close.

MS: *And which ones do you use then mostly?*

I7: Well, we go on the main roads mostly like the Ebbingestreet which is a big road into the city, but I am really cautious at that point in that street. I am less cautious when I am using the Nieuwe Boteringestreet or the Nieuwe Kijk in het Jatstrat.

MS: *Because there are less cars?*

I7: Yes, less cars.

MS: *The following questions address children's participation in the community. Community participation is a right determined by the United Nations but is also crucial for the development of children. What types of activities do your children go to apart from judo, speech therapy, school?*

I7: Well, there is a rich play date sequence. So they go to play dates and also going to the shops by walk. We walk to the shops. And we go to playground. Yesterday, we also went to the playground which is further away. And sometimes to Monekytown or the swimming pool. To the swimming pool Kardinge I take the car because it's a little bit further away.

MS: *Well you said that the last ones are a little further away, but in general where are the activities located and do you think they are well accessible?*

I7: They are well accessible, and they are located in the neighborhood of our house. Play dates they are in the city center, or they are in a neighborhood of the city center.

MS: *And who do your children encounter there?*

I7: Their friends.

MS: *And anyone else?*

I7: No, I think their friends.

MS: *And what are your children's roles at the activities?*

I7: They play.

MS: *So it is more of an active instead of a passive role?*

I7: Yes, right.

MS: *How do your children get there?*

I7: I think by bike and in earlier times we went by bike with the son in the back seat and now he cycles himself.

MS: *But then you always accompany them, it's not that they go alone?*

I7: No, they are not going alone on the streets.

MS: *Not anywhere?*

I7: Not anywhere. They are not allowed to leave the hedge without one of us.

MS: *How free or restricted are your children in their travel possibilities?*

I7: They are restricted.

MS: *Well, we of course wanna reduce the restriction and increase the freedom of mobility. It is about your opinion and how would you improve the transportation networks?*

I7: I would forbid electrified bikes in the city center; I think they should be forbidden everywhere, or they have to get less velocity.

MS: *And what factors increase the quality of road designs?*

I7: I like visible marks on the streets and maybe lights. Like pointing lights, something like this.

MS: *And by the marks you mean to designate where cyclists have to go.*

I7: Yes, I really think that that makes a road safer.

MS: *And how do think accessibility can be improved?*

I7: I don't have any ideas about this.

MS: *So you think everything is accessible and close enough?*

I7: Yes, I don't encounter any problems.

MS: *Perfect, and next to the electric bikes, what factors need to be addressed to increase traffic safety?*

I7: I think maximum velocity in the city center of cars. I think the city council also wants a speed velocity maximum of 30km/h in the city center and I would really think that will make it safer.

MS: *Well then, my last question is if you have anything to add regarding your children's freedom of mobility and their participation in the community?*

I7: No, I think we have said it all.

MS: *Well then you know that if there is anything that you should contact me and I stop the recording now.*

Interview 8

(MS: Muriel Schwarze; I8 Interviewe 8)

MS: *This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting.*

For questions or withdraw please contact me, the researcher of this project: Muriel Schwarze

Do you like to participate in this research?

I8: Yes.

MS: *Great, the first questions are about general characteristics. I know your name but what is your and your children’s gender?*

I8: I am male, and my children are male and female.

MS: *And how old are your children?*

I8: My son, which is a male is 12 and my daughter, female, is 10.

MS: *What is the composition of your household?*

I8: Me, my wife and two kids.

MS: *What is your employment status?*

I8: I am employed at EY.

MS: *And do you own a car?*

I8: Yes.

MS: *And what are your experiences with traffic accidents?*

I8: I would say no real experiences only minor damages, but no big traffic accidents.

MS: *So, nothing has influenced you in any way?*

I8: No, no traffic accidents.

MS: *Alright, that was about general characteristics. Now we will dive into the freedom of mobility. The following questions of the interview are focusing on children’s freedom*

of mobility. To get a first impression of your children's mobility pattern, it is important to understand the reason for the trip, the frequency of trips and the used transport mode. What are the reasons for your children's trips?

I8: Well, they go to school, they go to sports and as a family we sometimes go somewhere, and the children also play with other kids. I think these are the main reasons to travel. And on holidays of course but that is like family trip.

MS: *And how often do they travel per week?*

I8: They go to school every day of course; they go to sports. My son goes three times to sports, two times training, one time a match. And my daughter goes to horse riding on Saturday and now incidentally she is also doing badminton, so that's sports. And holidays, I think big holiday once every year and then some smaller weekends a few times a year and then we have some other visitations to my sister in Apeldoorn. We are not big travelers, but we do some travels.

MS: *Okay, so they basically travel daily to school plus the hobbies.*

I8: Yes, but they don't travel by themselves to the sports, because the sports is at the other side of Groningen and horse riding is near Groningen, so usually my wife drives them.

MS: *And what transport modes do they use?*

I8: Themselves, they use their legs and the bicycle and if they travel with us then it is mostly by car.

MS: *Furthermore, the freedom of mobility is determined by three components. These components are the following and will be analyzed separately from another. I will start with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility. So, what transportation networks do you use?*

I8: Roads, for me, mostly I use the car or the bicycle or I walks, so yes roads and sometimes for my work I also use the train, but that is very incidental. And the children also use roads and for them, from a transportation perspective, it is very helpful that the part of the city that we live in, they only have to cross this street and then it's only pavement and there is not a lot of car traffic. So, from when they were young, they could just walk to school because the school is very close by, and they could just use the pavement and did not have the risk of an accident.

MS: *So there were only sidewalks and no cars at all?*

I8: Almost no cars, yeah. So a very low risk area from that perspective.

MS: *And how do you perceive the transportation network and it's quality?*

I8: I would say for cars, bicycle and walking, the Netherlands is above average also when you also compare it to Scotland, where you have a lot less highways. But also most of the surrounding countries, because the Netherlands is highly populated, you have a lot of big highways, you can move around quite fast. If you wanna go to Zwolle, which is 100km, it would take you 50min, if there is no traffic. I think in other surrounding countries it would take you longer to drive 100km. So in general it is good. Public transportation should need an update because it is too expensive, and you cannot get everywhere in the Netherlands in the same amount of time as you can with the car. I think there is room for improvement, looking at public transportation.

MS: *And how do you perceive the neighborhood roads and sidewalks?*

I8: Yes, it is very good, I think. The quality of the roads in the Netherlands, in general, is good. And also in the neighborhood it's very good.

MS: *Does the chosen transportation network depend on the distance to the activity and the overall city size?*

I8: Yeah, I would say definitely. And that is also why my wife brings them to sports because I think it's 8km. If they have to go by themselves, that would be much riskier, I would say.

MS: *That means, when it is close by you take the bike?*

I8: Yeah, or walking and otherwise by car.

MS: *Do you think road designs are attractive according to visibility, guidance, and road alignment?*

I8: I think overall, in the neighborhood and in the Netherlands, it's pretty clear, I think.

MS: *So you always know where to go, the roads fit the surroundings?*

I8: Yeah, I think so. And for knowing where to go, nowadays you don't use road signs as much as you did 20 years ago because everyone has their own google maps and stuff like that. But I think, roads in general are quite clear.

MS: *Perfect. Then the following questions consider accessibility. Because People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility. Do your children have access to all desired activities?*

I8: Not by themselves because sports is too far away. My son plays handball, and we only have one handball club in Groningen which is on the other side of the town so he cannot access it by himself or he has to bike 8km and he is too young to do that. But as they grow older, accessibility increases, because the risk is lower that they use it themselves. And for public transportation, I don't think they are allowed to use it by themselves or if you are below a certain age, you can use the public transportation for free with an adult. Maybe you are allowed by yourself, but you have to pay if you are

younger than a certain age. But in general my children wouldn't use the public transportation by themselves, I would say.

MS: *And they can do whatever they want? Because your son plays handball, the girl goes horse riding? There is nothing they cannot do?*

I8: No. They can, yeah.

MS: *Perfect, then you have already touched upon it a little bit, but how do you evaluate travel time, cost and comfort based on the chosen transport mode?*

I8: I think travel time in the Netherlands is very good if you use the car or the bike, but public transportation takes a while. It really depends on where you are going. A few weeks ago I had to go to Rotterdam near the central station and it was ideal to go by train as it took as much time as it took by car. But sometimes you have to go somewhere, and it takes you one and a half hours extra in addition to the car.

MS: *And in terms of comfort, do you think all of them, as in bike, walking, car, public transportation, they are all equally comfortable?*

I8: The car is more comfortable of course but looking at the roads. In the Netherlands, we have separate bike lanes which is very comfortable if you compare it to other countries.

MS: *And are there any costs that would make you choose for one but not the other one?*

I8: For me costs is not that big of a factor, but for other people I know it is. For me the comfort and practicality is most important.

MS: *Do physical, mental, or economic factors of yourself or your children affects the children's accessibility?*

I8: No, I don't think so. No. I'm thinking on how it could affect but we have a good income, so we don't have to think about costs for transportation. And also, for the kids, they have access to a bike, we can pay for a bike. So, I wouldn't say that it has an impact.

MS: *And what about physical and mental factors?*

I8: I don't see any physical or mental factors that could have a negative impact.

MS: *Perfect. Then the final component determining the freedom of mobility is traffic safety. Based on research, parents are mainly concerned of safety in traffic when judging their children's freedom of mobility. Do your children have knowledge about traffic rules?*

I8: Yes, it is part of the primary school, and they are also doing a test and my son is already moving on to the next stage and we did everything. And my daughter also

recently did a test on the rules, and she also does a practicality test which is still due and that prepares them a little bit on the rules and how to apply them.

MS: *And I assume that you have also taught them while cycling etc.?*

I8: Yeah, sure.

MS: *And how do you perceive your children's equipment regarding safety?*

I8: Well, they have some senses of course, like eyes, ears, but they don't always use it correctly, but they have a bike. The bikes are relatively new so no impairments there, like good lights and stuff. Walking around, they have good shoes. My daughter also has roller blades with a break on it, so I think they have all the means to apply themselves in the traffic.

MS: *Perfect, and do your children know how to operate the chosen transport mode?*

I8: Yes, they know how to bike. We have learned them and walk we also learned them how to walk and they don't drive a car of course. My daughter also learned how to roller blade herself and she can ride a horse, but she doesn't use it for transportation.

MS: *Maybe she should consider. And do you think the chosen transport mode is safe?*

I8: Because otherwise we wouldn't let them use it.

MS: *And how do you perceive traffic speed and traffic volume regarding your children here in the city?*

I8: Well in the neighborhood, where they travel, I think it is okay. We don't have a lot of cars that speed a lot, we have a bus coming on but that also drives safely. And the speed they use themselves, I think they have all means necessary to break in time. And for my son, we don't give him an electric bike because it is not necessary, and it would also bring a higher risk with regard to traffic.

MS: *And what do you think about the city center? Is it very busy or calm?*

I8: It is very busy and part of being a parent is also letting go. And I think a year ago or two years ago, we also let our son going there by himself. So now he can go there by himself in the city centre, usually with someone else, like someone from the same age, but has also been there by himself, like one or two times. In the beginning, we thought it is a bit risky, but as I said as a parent you have to let go and give them the confidence. We are confident that he can manage the risks himself.

MS: *What roads do you perceive as safe regarding your children?*

I8: The roads in the neighborhood are safe I think. The regular roads for the rest of the city, for my son, in essence are safe, but we wouldn't let him cycle all the way to handball practice. And for my daughter, she is a bit younger, so for her, what we consider safe is the neighbourhood and maybe the less busy road to Haren. I think she

has been to Haren with a friend, last week. It builds up, so every few years, as they grow older, we consider more roads to be safe. That is how it works.

MS: *For your son, the radius is way bigger than for your daughter?*

I8: Yeah. And also, the area, if you go to Haren that is less busy than when you go to the center.

MS: *The following questions address children's participation in the community. Community participation is a right determined by the United Nations but is also crucial for the development of children. Apart from the activities that you have mentioned already, what types of activities do your children go to?*

I8: They do all kind of stuff. But for example, my son also built some wooden shacks, it was an event last year and he has done it one or two times somewhere in Groningen. But they are very active with friends, but it is not arranged, but they play a lot with the friends in the neighborhood. My daughter even goes to neighbors and asks if she can walk the dog and she does that together with some friends. So every year we have the Queensmarket or the Kingsmarket and they sell stuff, that is what they do. They are very active. And my daughter is outside almost every day, and my son is also outside a lot.

MS: *And where are the activities located and do you think they are well accessible?*

I8: Yes, they are in the neighborhood, and they are well accessible.

MS: *And also handball, would you consider that as well accessible?*

I8: No, it is accessible if we drive them there.

MS: *And the horse riding?*

I8: Same, basically. That's near Haren, even further than Haren.

MS: *And who do your children encounter there at the activities?*

I8: They encounter friends in the same age. And for handball they have a trainer of course, they meet players from other teams and sometimes, for the club we do something for the entire club. At the horse riding, she also has a trainer and when they sell stuff at the Kingsmarket they also meet people from the neighborhood, but usually we are also there.

MS: *So from what it sounds, your children have very active roles. Or how would you describe their roles at the activity?*

I8: My son is very outspoken; he is very active I would say. And my daughter is a little bit less outspoken, but she very involved not timid or anything. So very active I would say.

MS: *Well you have actually said it already, but I will just ask it again: how do your children get to the activities?*

I8: They are brought.

MS: *And to school?*

I8: They go themselves. So my son goes to Haren by bike, and daughter goes to school walking. It is like a two-minute walk.

MS: *Overall, how free or restricted are your children in their travel possibilities?*

I8: They are not really restricted, I would say. I would say, if they feel that they have to travel our comfort zone and their comfort zone, they would ask us for permission. So for example my daughter wanted to go to Haren to get an ice cream with a friend, she would ask "are you okay". If she is going with a friend here in the neighborhood, she would say "I am going by", she wouldn't ask for permission. And the same would be with my son. In the beginning, when he wanted to go to the center, he would ask for permission. I think he still would now, but that will evolve and give it a few years and he will just go. And then let's say he wants to go to France, then he will ask for permission. That's how it works.

MS: *But for the horse riding or handball, they could not go there if your wife is not available?*

I8: My son in theory, he could but it feels too far. And for my daughter it is definitely too far to go there by herself. But she can drive with the parents of a friend of course and that happens also. And also for my son, sometimes he has to play handball outside of the city. We could bring him, or he drives with a friend. That is also possible.

MS: *Now it's about how you would like to improve the city. Because this can eventually lead to enhanced community participation. How would you improve the transportation networks?*

I8: I am not a transportation expert. But there has been sounds of having a metro in the city, but I think Groningen is way too small to have a metro. I think from a transportation perspective it is quite okay and maybe even more focus on public transportation. Groningen is really a good example of how to manage the inner-city transportation. In the seventieth we had the "Verkeerscirculatieplan", you have probably heard about it. It is all about making sure that cars are not in the city center, but maybe, but I am not a planner, maybe you can state that the city center is expanding and rethink this plan. And maybe have more busses that stop more often. Usually, I never use the bus up to three years ago. I have started using the bus and it's quite okay, because you can get easily into the center, you are more mobile, I think when you have a bike, because you need to think about where to put the bike. If you can make sure that busses drive more frequently and that it takes even less time to get there, that would maybe help get people out of the car. Because in the city, I think, it should not be necessary to use a car. If you compare it to other cities outside the Netherlands, I think the Netherlands uses a lot the bike and it's quite good already.

MS: *That is for sure. What factors increase the quality of road designs?*

I8: In general the material the road is built. Asphalt or stones, it's age because it deteriorates if it's old. The general you can feel and if it's smooth, no wholes that's also important.

MS: *Alright, and how do you think accessibility can be improved?*

I8: Well if you look at the public transportation, I think the bus stops, the amount of travel time between the bus stops, if you have to walk there is quite okay. I don't have to walk big amount of miles to get to a bus stop. There is one just there. And from a car perspective, for us it is ideal, we can park our car here and we can go everywhere except the city center, but that is fine. And the bike is also very good. I don't know how to improve, but I think they are working on a big improvement in the city, like the ring road. There was a lot of traffic always because the roads had a lot of stops and now, they are making it that you can just drive on. I think they are working on improving it. And I am very curious how it is gonna look.

MS: *And do think it would be an improvement if the activities that your children go to are closer by?*

I8: Yeah, but that would mean that we need more people playing handball or the club moving. And the horse riding: a place where you can ride horses needs space, so you cannot put that here in the neighborhood.

MS: *Fair. And factors need to be addressed to increase traffic safety?*

I8: I don't really see factors here in the neighborhood but keep an eye out for crossroads that are too complex. I don't see any of them here in the neighborhood, but sometimes you have crossroads where you cannot see everything correctly. And also, but that is not in the city and a personal opinion, but roads where you can travel 100km/h where you cannot overtake. That is very risky because you always got people who drive 80km/h and people will still try to overtake but that is not possible. I think that is risky.

MS: *And in the city center is there anything that you would change in terms of traffic safety?*

I8: Maybe try to limit the amount of cars even more than they do now. But I think it's pretty safe. There are some crossroads that are pretty complex but usually as you drive a car you probably wanna avoid the city center.

MS: *And for your children, are these crossroads also difficult or complicated?*

I8: Yes, but in general, in Groningen knows that there are a lot of bikes, so everyone is very alert on people on bikes, so that helps I would say. If you would ride a bike in the USA, then it's completely different. We have once used a bike in New York City and people thought we were crazy. They said, "Are you crazy". But here in the Netherlands, everyone cycles and when you drive a car then you know how to be alert,

you are constantly on the lookout for people on the bike, because they are also in advantage when you cause an accident.

MS: *So therefore you think, your children are also safe?*

I8: Yes, and otherwise I wouldn't let them go there.

MS: *And if you would go with them then you also think it is safe?*

I8: Then also, yes.

MS: *Do you have anything to add children's freedom of mobility and their participation in the community?*

I8: No, I don't think so, They are quite free I would say.

MS: *Perfect, then please let me know if there is anything and I will stop the recording now.*

Interview 9

(MS: *Muriel Schwarze*; I9 Interviewe 9)

MS: *This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting.*

For questions or withdraw please contact me, the researcher of this project: Muriel Schwarze

Do you like to participate in this research?

I9: Yes.

MS: *Great. Your name I also know. So, what is your and your children’s gender?*

I9: I am female, and I have a son and a daughter.

MS: *And how old are your children?*

I9: My son is twelve and my daughter is ten, almost eleven.

MS: *And what is the composition of your household?*

I9: I live here with my husband and my children.

MS: *What is your employment status?*

I9: I am my own boss; I am a translator and work from home.

MS: *Do you own a car?*

I9: As a family we own a car, yes.

MS: *And what are your experiences with traffic accidents?*

I9: None.

MS: *So, nothing has influenced you in any way?*

I9: No.

MS: *Then let’s hope it stays like that. So the following questions of the interview are focusing on children’s freedom of mobility. To get a first impression of your children’s*

mobility pattern, it is important to understand the reason for the trip, the frequency of trips and the used transport mode. What are the reasons for your children's trips?

I9: They go to school every day, they have sports, sometimes they have parties with their friends, or go to the cinema or swimming. Activities like that.

MS: *And how often do they travel per week?*

I9: School is daily, and sports is about two or three times a week.

MS: *And what transport modes do they use?*

I9: When they go by themselves, my daughter goes to school walking and my son goes by bike and I bring them to their sports, or they go with their friends.

MS: *And when you bring them to their sports?*

I9: We go by car. Well, my daughter plays badminton now and we go by bike.

MS: *Furthermore, the freedom of mobility is determined by three components. These components are the following and will be analyzed separately from another. I will start with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility. So, what transportation networks do you use?*

I9: Roads, I suppose, and pavements. I think that's it.

MS: *And how do you perceive the transportation network and it's quality?*

I9: It's fine for what we use it. Here in the neighborhood, my children can go where they wanna go and we go to the city center sometimes and that is easily to reach.

MS: *So you feel well connected?*

I9: Yes.

MS: *Does the chosen transportation network depend on the distance to the activity and the overall city size?*

I9: Yes, when they go close by, they can go by themselves by bike or walking and if it is too far for them biking then one of us has to go and bring them?

MS: *And that is then either by bike or by car?*

I9: Yes.

MS: *And do you think road designs are attractive according to visibility, guidance and road alignment?*

I9: Enough, I think, yes. The routes they have to take are easily to follow. And I think they are working on some changes that will improve it even more I think, so yeah.

MS: *And do you think they are visible within the roads or have proper visibility on the roads?*

I9: The signs?

MS: *Yes, or if there are corners and crossings approaching.*

I9: Okay, well my son goes to school pretty close by and usually takes the same route and I think there is one point where he has to take a corner and the visibility is perhaps a bit difficult, but he is young and he just goes through it, hoping that no one is coming. But there is one point on his route to school where I think that you have to pay well attention there. Mostly the visibility is fine.

MS: *And do you also think that the roads fit the neighborhood style?*

I9: Yes.

MS: *Then the following questions consider accessibility. Because People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility. Do your children have access to all desired activities?*

I9: They do because if it is too far away, we take them by car, so it's not much the distance or accessibility that determines that, but if we have the time to take them at a certain time in the week. My daughter goes to horseback riding on Saturday, and she wanted to do another sports as well. But my sun goes on Wednesdays and Fridays, so she could not go on Wednesdays and Fridays. It depends on the moment in the week but not the distance.

MS: *So now there are no issues, and they have access to everything?*

I9: No, they can do everything.

MS: *And how do you evaluate travel time, cost and comfort based on the mode of transport?*

I9: I always prefer to go by bike, but it is a bit weather dependent also. With my daughter we can go to badminton by bike easily, but when it is raining really hard or is very windy, we may decide to go by car and the distance... for my son we sometimes have to go by bike when my husband is away with the car, so we go by bike to his handball in the other side of the town. But normally when he goes to training, we prefer to go by car because it is later at night and then we can be home earlier when we go by car.

MS: *Do physical, mental or economic factors of yourself or your children, affect the children's accessibility?*

I9: No, they are healthy so they can go where they wanna go and financially there is no limit. For what they wanna do now, it is all reachable.

MS: *Then the final component determining the freedom of mobility is traffic safety. Based on research, parents are mainly concerned of safety in traffic when judging their children's freedom of mobility. Do your children have knowledge about traffic rules?*

I9: Yes, they learn it at school and have traffic lessons on paper and they also have to do this practical exam in the neighborhood. So they know the rules, but it is not always that my son applies them. He should know them.

MS: *And what about your daughter?*

I9: She knows them absolutely, but she doesn't go by bike alone. Well just around the neighborhood, she once went a bit further. She knows the rules and she can apply.

MS: *And how do you perceive your children's equipment regarding safety?*

I9: The bikes they have you mean?

MS: *Or helmets or lights?*

I9: Well they have good bikes, so we check the tires, the lights when they need them. They don't wear helmets anymore, I just saw an item in the news that they should out it in the law that it's mandatory, because no friends wear them. My daughter also roller blades or skeelers, but she doesn't wear protective gear anymore because she thinks, she is good enough. And she is, she is very agile. So they don't wear that but the equipment they use, the bikes are good.

MS: *Do your children know how to operate the chosen transport mode?*

I9: Yes. Their bikes. My son sometimes uses the bus with friends, so he knows where to get in and where to get off. So he knows that too.

MS: *Great. Do you think that the chosen transport mode is safe?*

I9: Yes, I think so. I think for the distance they have to go; it is the best transport mode.

MS: *How do you perceive traffic speed and traffic volume regarding your children?*

I9: My daughter does not really leave the neighborhood, so here it is good, there are no busy roads where she plays. And my sun just started on high school this, so he has to go a little bit further, but we are lucky that he has to go towards Haren, where it is a lot more quiet than towards the city center. These parts where they have to go daily are fine, it is not too busy and sometimes he goes with friends to the city center and that is a lot more traffic of course. And I sometimes think when I go there by myself "oh my, when he has to go here by himself, how is he gonna do it" but when I was young I did it too. So I just gonna have to let him go and he can do that.

MS: *And what is your perception on traffic speed here in the neighborhood or in terms of streets they use?*

I9: Well there is a limitation here for 30km/h. It is usually respected and he also were is just bike paths where are no cars I think they respect the speed limits.

MS: *And what roads do you perceive as safe regarding your children?*

I9: I prefer roads with separate bike paths which we don't have here in the neighborhood but they are when my son has to go to school, but the roads here are not very busy so they are safe enough for kids to go by themselves.

MS: *Perfect. The following questions address children's participation in the community. Community participation is a right determined by the United Nations but is also crucial for the development of children. You have already mentioned a lot but are there any other activities that you come up with now?*

I9: My son goes with friends to the city center sometimes. It is not weekly things that they go to apart from sports and sometimes with school they go somewhere. With school they have to go somewhere else for the gym class, or they go to the cinema together or they have been to the city center to the McDonald's or KFC, or I don't know. Or they go play somewhere, football or whatever. Those are some extra activities, but they don't have regular once a week, but just when they decide to go somewhere.

MS: *And for your daughter? Because she obviously doesn't go to the city center?*

I9: No, she doesn't go there alone, she goes to horseback riding every week and once a month she stays there an entire day, so we take her and pick her up later. And her activities are just a bit more here in the neighborhood. Once a month there is swimming where you can go for 50 cents just a few blocks away, so she goes there with a friend. Or they go to playgrounds in the neighborhood stuff like that.

MS: *And where are the activities located and do you think that they are well accessible?*

I9: The activities for my daughter are located in the neighborhood. For my son it's a bit more further away and they are accessible by bike and even bus sometimes.

MS: *And who do your children encounter there?*

I9: Friends, trainers, other people working in the cafeteria or in the cinema.

MS: *And what are your children's roles at the activity?*

I9: They play a lot of course. My son at sports is very active of course, my daughter when she goes for an entire day to the horses, she helps cleaning stables and stuff like that. Yes, they are active.

MS: *Great, then how free or restricted are your children in their travel possibilities?*

I9: To go by themselves, the restrictions we have for them is the distance. We don't like them to go too far away to parts they have not been before by themselves and the restrictions they have when we take them is our schedule, I suppose.

MS: *And for your daughter for example, because your son may go way further of course, how big is this radius?*

I9: It is getting bigger. I was away for a few days, but I have heard from my husband and my daughter that she's been to Haren with a friend on her bike. That is the furthest she has been without us. So the radius is getting bigger.

MS: *Now it is about your opinion and what you would like to improve in the city and the neighborhood, because increasing children's freedom of mobility because this can eventually lead to enhanced community participation. So how would you improve the transportation networks?*

I9: That's a difficult one. I don't really see how I should improve it or how it could be improved. My daughter, the things she wants to do, she is able to do by herself. And the things that are new for her, they don't have to change, because it is new for her anyways. And for my son, well the fact that she goes by himself sometimes to the city center, maybe the busses could perhaps change in the city center. As a mum, I think all the busses and all the bikes, that is too much traffic, perhaps they could have separate bike lanes and separate bus lanes that it's not just one road and you have the bus there and the bikes very close. But I don't know that is reachable, but that is just because I want him safe of course, but I did the same, so this is gonna be fine. I don't know how to improve it. They are doing a lot of improvements for the roads for the cars, and I think the community is quite good in making changes where they need to be.

MS: *That is also good to hear sometimes. Are there any factors that increase the quality of road designs? You have already touched upon the separated cycling paths and bus lanes.*

I9: I suppose this one point that is a bit difficult on the route for my son to school. That is perhaps, there is this one crossroad, there is one road for cars and bikes that crosses a bike path and that is not very clear to see. I don't know how but it would be nice if they would change something there to increase the visibility, but I don't know how to change that. There are people who have more knowledge than me.

MS: *And how do you think accessibility can be improved?*

I9: To get more activities closer by, I suppose. We have now the chance that there is this new, not really new, but newer, at the Euroborg where the football stadium is as well and the cinema. There are a lot of activities coming there, two sport areas, my daughter goes to badminton there now. That is closer by for us now and we can easily go by bike and in a few years, she can easily go there by herself. I suppose, my son has to go a bit further still, but when he is a bit older, he can also go by himself. He can, but I don't know if he wants to because it will take much longer to go there. I

suppose to improve accessibility to get more things organized around the house, but I don't know if that is possible because you need so much more than roads.

MS: *But now your daughter is not allowed to go alone to badminton because it is too far?*

I9: I think she could, and the lights are longer at night, so she can also come back by light, but she just has a few lessons to try it out and if she decides to stay on and continue. When she is confident enough, she can go by herself, but I don't know if. I want her to tell me "I want to go by myself". She knows the route and I think I would let her go.

MS: *What factors need to be addressed to increase traffic safety?*

I9: I don't know. Can you give an example?

MS: *I of course don't wanna steer you in direction, but other people talked about less cars or separated cycling paths.*

I9: As I mentioned, for the city center the separate cycling paths would be best or I don't think there is a lot of traffic here. There is a bus coming by, but you need to keep the bus because that is your easy way to the city center. And I do believe that in the city center they block cars more and more. So that is a good thing, but here one-way streets perhaps at certain spots. They have a lot of speed limitations already here nearby. I think that is good.

MS: *Do you have anything to add children's freedom of mobility and their participation in the community?*

I9: No, I think you have addressed quite a lot.

MS: *Perfect, then please let me know if there is anything and I will stop the recording now.*

Interview 10

(MS: *Muriel Schwarze*; I10 Interviewe 10)

MS: *This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting.*

For questions or withdraw please contact me, the researcher of this project: Muriel Schwarze

Do you like to participate in this research?

I10: Yes.

MS: *I know your name already. So what is your and your children’s gender?*

I10: I have two children, a boy and a girl. The boy is five years old, and the girl is six years old.

MS: *And what is your gender?*

I10: My gender is male.

MS: *Okay, well then you have also answered the question about the age. What is the composition of your household?*

I10: Me, my wife and the two kids.

MS: *And what is your employment status?*

I10: I have a permanent contract as a chemical engineer and designer.

MS: *And do you own a car?*

I10: Yes.

MS: *And what are your experiences with traffic accidents?*

I10: Just some minor accidents.

MS: *So nothing that has influenced you in any way?*

I10: No.

MS: *Alright. That was about the general characteristics. And now we will dive into the freedom of mobility. So the following questions of the interview are focusing on children's freedom of mobility. To get a first impression of your children's mobility pattern, it is important to understand the reason for the trip, the frequency of trips and the used transport mode. What are the reasons for your children's trips?*

I10: Usually by car maybe only leisure. To school they can just walk because it is nearby, or they can cycle. But by car is usually for leisure, not more than that.

MS: *And are there any other reasons that your children travel?*

I10: By car?

MS: *No, in general, does not need to be by car.*

I10: Only for leisure, or for sports, for hockey, where my daughter goes now. But basically that. Travelling maybe for holiday but not more than that.

MS: *And how often do they travel per week then?*

I10: Maybe twice a week, and to school every day but they can walk or cycle.

MS: *You have touched upon it, but I will just ask again, so they go by bike, they walk and with you together they use the car, or are there any other transport modes that they use?*

I10: No, walking, cycling to school and with the car just with me or my wife, or in the bakfiets sometimes, but only that.

MS: *Furthermore, the freedom of mobility is determined by three components. These components are the following and will be analyzed separately from another. I will start with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility. So, what transportation networks do you use?*

I10: Transportation networks?

MS: *That are different types of streets or public transportation.*

I10: Oh, I forgot to mention, sometimes we go to the city center by bus, also. We use the bus and sometimes we use the train but not that often.

MS: *And in terms of roads you use cycling paths, sidewalks, normal roads for cars only?*

I10: Sidewalks to walk, the streets to cycle or to drive or the bicycle path also to cycle. The normal things.

MS: *And how do you perceive the transportation network and its quality?*

I10: In the Netherlands, I think is pretty good. Of course this street here doesn't have a bicycle path but people usually respect the driving speed, and we can cycle on the right side and that is fine.

MS: *Great, and does the chosen transportation network depend on the distance to the activity and the overall city size?*

I10: Yeah, if we have to go to the other side of the city, we usually take the car. If it is closer by, we go by bicycle. Also depends on the weather.

MS: *Do you think road designs are attractive according to visibility, guidance and road alignment?*

I10: Yeah, I think so. Most of them yes.

MS: *So you mostly know where to go and everything is clear, everything is well visible?*

I10: Yeah, I am not from the Netherlands, I am from Portugal and when I got here, started driving in the Netherlands, I had to adapt a bit. Sometimes you have two streets that are parallel to each other and the one on the right is the one where you turn right and the other one is just keep going straight, so I had to learn those kinds of things. But yeah, after learning those differences it is okay.

MS: *And do you also think that the roads fit the surroundings and the city?*

I10: Yes, sure.

MS: *Then the following questions consider accessibility. Because People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility. Do your children have access to all desired activities?*

I10: I think so, if we take them, then we have access to that, but most of the activities they like to do is go to the speeltuinen and they can just walk from here. So that is not a problem.

MS: *So how do you evaluate travel time, cost and comfort based on the mode of transport?*

I10: I think the trains are a bit expensive in the Netherlands. The bus is okay, of course it is still a bit expensive, but it is not as expensive as the train. And the bicycle is not expensive at all. The fuel is a bit expensive nowadays, but it is what it is.

MS: *And what about the other two, time and comfort?*

I10: Time during travelling for the public transport, I think, is okay. Usually, there is not much traffic for the public transportation. They always have priority compared to normal cars. So I think that is okay.

MS: *And would you also say that the bike is as comfortable as the car?*

I10: Yeah, I think so. I cycle every day to work but if the weather is not okay, then I feel a bit bad on cycling to work and that is not so comfortable.

MS: *Okay. Do physical, mental or economic factors of yourself or your children, affect the children's accessibility? Is there anything financially restricting or physically restricting which you have, or your children have, which is why your children cannot get everywhere?*

I10: We are healthy, and we can walk everywhere, we also can cycle, so that is fine.

MS: *Then the final component determining the freedom of mobility is traffic safety. Based on research, parents are mainly concerned of safety in traffic when judging their children's freedom of mobility. Do your children have knowledge about traffic rules?*

I10: Some. Now that they start cycling on the street, we start to tell "cycle always on the right, pay attention to the cars that come from the right, or the bicycles". So we are trying to start teaching them those things, but they are still very small. They are five and six, so that takes some time. They know they have to cycle on the right. Sometimes they forget and then they are a bit to the left.

MS: *And how do you perceive your children's equipment regarding safety?*

I10: When they were a bit smaller, they always had to wear a helmet. Now not so much, but they should.

MS: *What makes them not wearing a helmet anymore?*

I10: They are more confident on cycling. They can cycle better and can just break when they need. Of course when there is an accident the helmets should safe them, but I don't see anyone else wearing them, so.

MS: *Do your children know how to operate the chosen transport mode?*

I10: They know how to cycle.

MS: *How do you perceive traffic speed and traffic volume regarding your children?*

I10: Here in the street for example we can only drive 30km/h, sometimes I see some people going a bit quicker. And when my kids are cycling on the street and I see those cars, then I of course feel a bit afraid that there could be an accident. But the speed can be something dangerous for them.

MS: *But there is not a lot of speeding here in the street or this neighborhood?*

I10: Usually, in the neighborhood not that much. It is a big street but not that many cars passing here. Maybe now more because of all the works at the ring but otherwise not that much. And there are not many people speeding here in the street, so that is good.

MS: *And it is also not very busy?*

I10: No.

MS: *And what roads do you perceive as safe for your children?*

I10: The ones without traffic. Without cars. If it's a bicycle path I am always feeling comfortable about it. If it has cars, then they need to know that they have to go on the right.

MS: *But if there is a street for cars and a separate cycling path, that is also okay for you?*

I10: Yeah, if the cars respect the bicycle path on the side, yeah.

MS: *The following questions address children's participation in the community. Community participation is a right determined by the United Nations but is also crucial for the development of children. What types of activities do your children go to?*

I10: Besides school, my son is starting with swimming lesson also. My daughter has already finished her swimming lessons. Now she is starting with hockey and probably other activities in the future. But basically that.

MS: *And where are the activities located and do you think that they are well accessible?*

I10: The swimming pool is in the hotel at the Paterwoldsemeer and is not the best to get there. We need to cross some busy roads, even on the bicycle. But it is still accessible. But it could be better to get there.

MS: *And what about hockey?*

I10: To hockey I never went with her, my wife can tell you. It is a bit further.

MS: *And who do your children encounter there?*

I10: In the swimming class, my daughter didn't have anyone that she knew there. Only the teacher, but by going there and the kids by being there started to get to knowing each other. And at hockey, I think she goes there because her colleagues from school also go. And she has other friends from school there.

MS: *And what are your children's roles at the activity? Are they active, passive?*

I10: Well, it is sports, so they need to be active.

MS: *But they also want to participate? They are not shy?*

I10: No, it's a class so they have to participate.

MS: *So how do your children get there?*

I10: Usually, we take them.

MS: *Never alone?*

I10: No, that is still a bit too far away.

MS: *Okay, then how free or restricted are your children in their travel possibilities?*

I10: They are free to go to the speeltuinen here in the back. Sometimes to the school. Those they can do by themselves. They are still very young. They are five and six years old. When they are a bit older, we can give them more space. Besides that they are not allowed to cross streets by themselves. They know.

MS: *So the radius is rather small around the house?*

I10: Yeah. Only the back of the house, because the main street is in the front.

MS: *And in the back are less cars?*

I10: Yes.

MS: *Then it is about increasing children's freedom of mobility because this can eventually lead to enhanced community participation, and your ideas and opinions. So how would you improve the transportation networks?*

I10: I think for now it is fine. I don't think a way to improve them. No, I cannot think about any other way, because we already have good bicycle paths in the Netherlands and to improve them more, then we have to stop with normal streets for the cars.

MS: *And what factors increase the quality of road design?*

I10: That is a tricky one. For the perspective of the car driver?

MS: *From the perspective that your children have it easier.*

I10: Okay. Maybe a few more roundabouts, that will slow down a bit the cars, more zebra, more crosses for them. I think that will help a little bit. Or maybe some bumps.

MS: *Speed bumps to slow down?*

I10: Yeah.

MS: *How do you think accessibility can be improved? Could there be more activities? Should the activities be closer by?*

I10: Yeah, that is difficult to arrange, because these are the places where the activities are already there. They are not going to build new ones, of football fields, because they already exist. Only the way to get there can be improved.

MS: *By slowing down the traffic for example?*

I10: Yeah.

MS: *What factors need to be addressed to increase traffic safety?*

I10: Maybe also the drivers need to know that they go a bit slower sometimes. I don't know more.

MS: *So it is mainly about the traffic speed from your perspective? And the cycling paths?*

I10: Yeah. Because I think the cars drive on the right side as they should and maybe the biggest problem is maybe the speed or maybe looking to the phone while they are driving. That has to be more in the mentality of the driver.

MS: *Not in the design?*

I10: No.

MS: *My last question is: Do you have anything to add children's freedom of mobility and their participation in the community?*

I10: No.

MS: *Then you know about the ethical rules and if there is anything please contact me and I will stop the recording now.*

Interview 11

(MS: *Muriel Schwarze*; I11 Interviewe 11)

MS: *This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting.*

For questions or withdraw please contact me, the researcher of this project: Muriel Schwarze

Do you like to participate in this research?

I11: Yes.

MS: *I also know your name your already. What is your and your children’s gender?*

I11: I am a female and I have a son and a daughter.

MS: *And how old are your children?*

I11: Six and five.

MS: *And what is the composition of your household?*

I11: I have a husband and two children.

MS: *And what is your employment status?*

I11: I have a contract in the hospital. I am a mid-wife.

MS: *And do you own a car?*

I11: Yes.

MS: *And what are your experiences with traffic accidents?*

I11: I was a hit by a car.

MS: *And how has that influenced you?*

I11: Not much. No.

MS: *That is at least good to hear. Well, then the following questions of the interview are focusing on children’s freedom of mobility. To get a first impression of your children’s mobility pattern, it is important to understand the reason for the trip, the*

frequency of trips and the used transport mode. What are the reasons for your children's trips?

I11: School, sports, leisure, doctor appointments.

MS: *How often do they travel per week?*

I11: I can almost say, almost daily by bicycle and twice a week by car somewhere.

MS: *You have already touched upon it. So they use the bike, the car and what other transport modes do they use?*

I11: Sometimes the bus, sometimes the train. Or airplane, but not in the city of course.

MS: *I assume the also walk?*

I11: Yes.

MS: *Furthermore, the freedom of mobility is determined by three components. These components are the following and will be analyzed separately from another. I will start with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility. So, what transportation networks do you use?*

I11: The bus and the train.

MS: *And transportation networks also mean the different types of roads for example.*

I11: Yeah, bicycle roads and the normal roads and sidewalks.

MS: *And how do you perceive the transportation network and its quality?*

I11: I think in the Netherlands, we cannot complain. It is well maintained. Sometimes maybe it can be safer. There are some parts for children to be safer.

MS: *But overall you feel well connected?*

I11: Yeah.

MS: *Does the chosen transportation network depend on the distance to the activity and the overall city size?*

I11: Yeah, the further you go, I think, the easier you take the car. If it is closer by you walk or take the bicycle. And if it is more handy to go by bus because you don't wanna park your car, you take the bus.

MS: *Do you think road designs are attractive according to visibility, guidance and road alignment?*

I11: Sorry, can you translate?

MS: *Yeah, so visibility means everything is well visible. That everyone can see your children and you can see everything in a good way and others can see you. And guidance means that you know where to go. And road alignment means that the road fits the structure, the neighborhood, the surroundings and it is not a big road and a small neighborhood.*

I11: Well, this is quite a wide street, but normally I think that is good. I think, in the Netherlands are a lot of traffic signs, so that can maybe be overwhelming for kids to see, because lately my daughter also asked, "can you teach me all the signs". I said, "well there are quite a lot". So for kids that is a lot, I guess. And overall I guess, you can see the road well. There are not any mountains here or other things where you cannot see the roads.

MS: *But also, if you are on the road and then there is a crossing, it is not dangerous in a way?*

I11: Crossings, I think, are dangerous anyway. There you always have to keep a good eye on them, because there are so many things happening from so many sides. So they are always in danger. So yeah, maybe the roundabouts are more safe, where the cyclists have priority.

MS: *Then the following questions consider accessibility. Because People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility. Do your children have access to all desired activities?*

I11: Well, desired activities? Here in the surrounding yes, and I think, any anything they can wish for they can go. If they want something, we can bring them there.

MS: *And how do you evaluate travel time, cost and comfort based on the mode of transport?*

I11: I think the bus is normal in price. We sometimes take small trips by bus and that is doable. For instance when you park the car in the city it is probably more expensive than taking the bus. So I think that is good. Train is very expensive, so I wouldn't choose that quick. Car, fuel, is nowadays expensive also, so that is also a good reason to go by bicycle.

MS: *And would you also say it is comfortable to go by bike, car and bus?*

I11: Yeah, I don't have any reasons for comfort. They are all comfortable.

MS: *Do physical, mental or economic factors of yourself or your children, affect the children's accessibility?*

I11: No.

MS: *There are no issues? They are healthy, no economic limits?*

I11: No.

MS: *Then the final component determining the freedom of mobility is traffic safety. Based on research, parents are mainly concerned of safety in traffic when judging their children's freedom of mobility. Do your children have knowledge about traffic rules? Well you have already started about it because your daughter wants to know all the traffic signs.*

I11: I am teaching them now. They don't really know. They know that they have to go to the right side of the road, but that is the only thing. The one who has priority they don't understand yet.

MS: *So you teach them while cycling or walking?*

I11: Yeah.

MS: *Are there also any lessons at school?*

I11: I guess so, but I am not sure.

MS: *And how do you perceive your children's equipment regarding safety?*

I11: They have helmets, but they don't wear that anymore.

MS: *And apart from that? Do you think they are safe? What they wear? What their bike can do?*

I11: Are they safe? If they listen, they are safe.

MS: *Do your children know how to operate the chosen transport mode?*

I11: Yeah.

MS: *No issues?*

I11: No.

MS: *Do you think that the chosen transport mode is safe?*

I11: I think it can always be safer. If you have more separated roads from the bicycle paths and the normal roads. I think that is safer than the cycle path on the road.

MS: *Well you still let your children go by bike. So you assume some safety I assume?*

I11: Yeah, and it is also a learning process.

MS: *How do you perceive traffic speed and traffic volume regarding your children here in the neighborhood or in the city?*

I11: There are always people who think they need to drive faster. So I don't let them go alone here because it's not even that I don't trust them. Maybe also a part, but also not they can understand that other people drive so fast. I think it is not safe to let them go alone.

MS: *And what about the traffic volume? Is it busy or calm?*

I11: I say it's busy.

MS: *So what roads do you perceive as safe for your children? Where can they go, and you have no worries?*

I11: In the back because there are no cars. There are only sidewalks. There are also some living areas. It's an ending street, so there is not really traffic.

MS: *The following questions address children's participation in the community. Community participation is a right determined by the United Nations but is also crucial for the development of children. What types of activities do your children go to that you have not mentioned yet?*

I11: I don't think so.

MS: *And where are the activities located and do you think that they are well accessible?*

I11: They go to school walking, that they can do basically by themselves because there is no traffic there. Sports we have to take them normally by bicycle and there are some busy parts where we really have to watch out for them.

MS: *And to school do they always go alone?*

I11: No, they never walk alone but they walk by themselves because we will always check there.

MS: *So theoretically they could but you still go with them?*

I11: Yeah.

MS: *Why is that? Do you just feel better about it?*

I11: No, because they are too young. They think they can do it by themselves, and they can also but we always have to check if they arrive there.

MS: *And who do your children encounter there?*

I11: They are always in the beginning a bit shy and later they participate.

MS: *With other children? And who else do they see there and meet?*

I11: Normally, people from school or if it's a family thing then family.

MS: *So you have already said how you get there. Overall, how free or restricted are your children in their travel possibilities?*

I11: Pretty restricted because of their age. They only go around the house and maybe one block away behind the house but not in front of the house because there is the big road.

MS: *But when they go the block behind the house they can also go alone?*

I11: Yeah, if it is the playground then they can go there.

MS: *But they are kinda free if you go with them, then they can go basically anywhere?*

I11: Yeah.

MS: *Now it is about your opinion and how we can increase children's freedom of mobility which eventually leads to enhanced community participation. So how would you improve the transportation networks?*

I11: Make it for free, the bus. Train, I don't know, but at least the bus. Maybe more often.

MS: *And other roads? Are you okay with it or would you say the connectivity needs to be improved at some parts?*

I11: No, not the connection, but what I already said, to separate the bicycle lane and road.

MS: *And are there any other factors that could increase the quality of road designs?*

I11: No, maybe more roundabouts, bumps, and you also have some colorful signs so that you know it is a children's area, so that you slow down. Maybe also more roads with speed limits.

MS: *How do you think accessibility can be improved?*

I11: I don't know.

MS: *You are okay with where the activities are and how to get there?*

I11: Yeah, I think we live here in the city, and you have a lot of choice and sometimes you need to travel for that, but that is not a problem.

MS: *And what factors need to be addressed to increase traffic safety?*

I11: What I already said.

MS: *Nothing else?*

I11: No.

MS: *Great, do you have anything to add regarding children's freedom of mobility and their participation in the community?*

I11: I don't think so.

MS: *Well this is the end of the interview. If there is anything, please contact me and I will stop the recording now.*

Interview 12

(MS: Muriel Schwarze; I12 Interviewee 12)

MS: *This interview is collecting qualitative data on “How do parents’ perceptions on freedom of mobility influence the participation of their school-aged children in the community, in Groningen, the Netherlands?”. This research is part of the Bachelor Project at the Faculty of Spatial Sciences; University of Groningen. Your answers will be used anonymously in the research paper and will be compared to answers of other participants to draw conclusions. Conclusions include a summary of your answers or direct quoting.*

For questions or withdraw please contact me, the researcher of this project: Muriel Schwarze

Do you like to participate in this research?

I12: Yes.

MS: *Perfect. I know your name which is only needed in case there is anything. What is your and your children’s gender?*

I12: It’s a boy and a girl. The boy 11 years old, the girl 6 years old, almost 7.

MS: *And your gender?*

I12: Male.

MS: *Well, then you have also answered the question about age. And what is the composition of your household?*

I12: Two parents, husband, wife and two children.

MS: *And what is your employment status?*

I12: Full-time employed here at the Gemeente Groningen.

MS: *And do you own a car?*

I12: Yes.

MS: *And what are your experiences with traffic accidents?*

I12: We have never had a big accident, only just small accidents, but there happened a deadly car accident in front of me. I was involved in that.

MS: *And has it influenced you?*

I12: Yes, very much.

MS: *May I ask how it has?*

I12: Yes, a little trauma, I guess. It's now 10 years ago, so it's just further away but it was very impressive for me. A little girl, 18 years old dead on the street.

MS: *But you still use the car, bike?*

I12: Yeah.

MS: *Well, then that was it about the general characteristics. Then the following questions of the interview are focusing on children's freedom of mobility. To get a first impression of your children's mobility pattern, it is important to understand the reason for the trip, the frequency of trips and the used transport mode. What are the reasons for your children's trips?*

I12: School, sports and playing with friends.

MS: *How often do they travel per week?*

I12: Each day. Every day, Saturday also, Sunday also.

MS: *What transport mode do they use?*

I12: Bicycle and car. So we bring them to the sports, the football, that's by car. School they are going by bike and going to friends is always by bike.

MS: *Furthermore, the freedom of mobility is determined by three components. These components are the following and will be analyzed separately from another. I will start with the perceived transport network and road design. Research suggests that the available transport networks and road designs influence the freedom of mobility. So, what transportation networks do you use?*

I12: The networks? And then you mean the city map?

MS: *What types of roads and maybe also the train?*

I12: We are using the inner city because we are living in the inner city and the school is in the inner city, so it is one kilometer. It is a car street but not a busy street. The inner-city network, I guess.

MS: *I also assume, that you sometimes use the sidewalks when you walk somewhere?*

I12: Yeah, the sidewalks of course when we are walking. And the park, vehicles are not allowed to go to the Noorderplantsoen. It's one of our routes and the streets from here to the Noorderplantsoen, the car streets.

MS: *And how do you perceive the transportation network and its quality?*

I12: Almost good. It's busy, a lot of students are cycling there and with my little girls from six, it's sometimes a bit busy, but it's also a good lesson for her to cycle with all the other people in Groningen, so that is okay. Normally it is okay.

MS: *So you feel connected in the city center?*

I12: Yeah. There is one part on the route that is very busy, that is the Diepenring, but around the inner city there is a ring road and that is a very busy route. A lot of cars, lorries. You have to pay attention there, but normally it is good. And you can reach the inner city in a good way.

MS: *Does the chosen transportation network depend on the distance to the activity and the overall city size?*

I12: Yeah, because when we go to football, then mostly we use the car to bring them and sometimes by bike. That is a bigger distance so then we go by car.

MS: *Do you think road designs are attractive according to visibility, guidance and road alignment?*

I12: I think it is because, in Groningen there is a lot of attention for road designs. But that doesn't mean that it is everywhere in a good shape, but normally you can bike safely because the road is designed safely. I think it is good, but not in every street it is good enough, but they are working on it.

MS: *So you always know where to go and everything is clear?*

I12: From my opinion yes. I guess when you ask this to my wife, she has to look forward in a greater view to see where she has to go. Maybe we are different, I don't know.

MS: *Then the following questions consider accessibility. Because People desire to move between activities. However, the accessibility of these activities affects the freedom of mobility. Do your children have access to all desired activities?*

I12: Yeah. They have because we can bring them.

MS: *And how do you evaluate travel time, cost and comfort based on the mode of transport?*

I12: That is a difficult one. Normally we go by bike, that doesn't cost a lot, that is okay, and we prefer that. And of course when you are going by car, the fuel is getting more expensive every time. So that is an issue, but since the distances are relatively short, we don't make other choices. We go by car if we want to go, the price is no issue at this moment.

MS: *What about the comfort?*

I12: Asking my wife, she says we are going by car when it is raining for example. I have the green environmental issue, so I normally say “No, we are going by bike.”, but sometimes I say “we are going by car” as well. That is more comfortable of course.

MS: *When do you say “We are going by car”?*

I12: When it is raining.

MS: Or far away?

I12: *Yes, I have to be honest when it is a little further away, we go by car. It is easier to go by car then.*

MS: *Do physical, mental or economic factors of yourself or your children, affect the children’s accessibility? Economic factors you have already touched upon.*

I12: Yes, the economic one. We are not so much going by bus, because it is more expensive. Physical conditions, of course when you are not so well, then you go by car.

MS: *But in general they are healthy and there are no issues?*

I12: No, indeed there are no issues. And sometimes we are going by car but not because of these reasons.

MS: *Then the final component determining the freedom of mobility is traffic safety. Based on research, parents are mainly concerned of safety in traffic when judging their children’s freedom of mobility. Do your children have knowledge about traffic rules? Well you have already started about it because your daughter wants to know all the traffic signs.*

I12: Yeah. The six-year-old girl is learning of course, but the eleven-years-old boy knows the rules.

MS: *And how did they learn them?*

I12: By practice and at school. They have programs at school.

MS: *And how do you perceive your children’s equipment regarding safety?*

I12: Equipment?

MS: *A helmet or light on the bike?*

I12: Yes, my daughter wears a helmet when she is cycling. My son not and that’s from when he was nine. The helmet didn’t fit, so we decided to stop with it. But my daughter has a helmet. Also lights on the bike and good bikes, that is important for us.

MS: *And when do you think your daughter will not wear it anymore?*

I12: Maybe next year, no, I think, she is now in groep 3, I guess when she is in groep 5, 6, so two or three years maybe.

MS: *Because then you are less worried about accidents?*

I12: No, because in the Netherlands it is normal to not wear a helmet. I think in Germany that is another kind of story.

MS: *Yeah, that is different. I had to wear a helmet until I was 12 and I didn't like it.*

I12: I understand, but when you are the only kid with a helmet, it is also not nice, so it's a balance in that way.

MS: *Do your children know how to operate the chosen transport mode?*

I12: Yeah.

MS: *Do you think that the chosen transport mode is safe?*

I12: Yeah.

MS: *How do you perceive traffic speed and traffic volume regarding your children here in the neighborhood or in the city?*

I12: They may not have high speeds on the bikes. We say that you have to bike next to us on normal speed. That is an issue I think, there are a lot of electric bikes, they are going faster. The scooters and that sort of bikes. And the different velocities, I guess, are a problem for my children to see what is going on in traffic. Sometimes it is dangerous.

MS: *And traffic volume is also relatively high? Because you said it is busy.*

I12: Yeah, in the inner city, Noorderplantsoen, yes, they are high.

MS: *And what roads do you perceive as safe for your children?*

I12: You can say the roads that are forbidden for cars. The cycling paths are also sometimes a high risk for accidents. I cannot say that. I don't really know what is the safest route to bike.

MS: *Why do you think that the cycling roads are also a big risk?*

I12: Maybe they are a little better than the car streets, but because there is a lot of traffic on the cycling paths. Different traffic, it is not safer than a car street, I guess.

MS: *The following questions address children's participation in the community. Community participation is a right determined by the United Nations but is also crucial for the development of children. What types of activities do your children go to?*

I12: What do you mean by activities?

MS: *Everything, like what do they do in their free time or also outside of their free time?*

I12: School, sport, football, going to the park, to the playground, to see friends. They are going with us to the shopping mall sometimes. And that is not sports but a cultural education “De jonge onderzoekers”, that is very interesting. So that is an activity on a Friday. That’s it.

MS: *And where are the activities located and do you think that they are well accessible?*

I12: The sport is on the Stadspark sports field. That is far away, you can go by bike, that is a long distance, but the accessibility is okay and all the other activities are around the inner city. The accessibility is okay.

MS: *And who do your children encounter there?*

I12: What do you mean?

MS: *Who do they meet? Who else participates in the activities and who do they see there?*

I12: A lot of other children from sometimes school, from everywhere, I don’t know.

MS: *Are there also other people that they meet there apart from the children?*

I12: They go the activity, and they meet other children but only at that moment.

MS: *I was also thinking about trainers or people who guide the activities?*

I12: Of course they are there, there are trainers and teachers.

MS: *But mostly just other children of that age?*

I12: Yes.

MS: *What are your children’s roles at the activities? Are they participating? Active? How are they participating?*

I12: Yes, they are participating in the activities, so they are joining the group and having their time to research or football. Yes, they are fully participating.

MS: *And how do your children get to all the activities?*

I12: Mostly by bike.

MS: *But you always bring them, and you never go alone?*

I12: Yes. Even the eleven-year-old boy. We are at the point where he is going alone. Next year he goes to high school, so he has to go alone to school, but now we are bringing him because it is safer, we say.

MS: *How free or restricted are your children in their travel possibilities?*

I12: We are doing a lot for them. So when they want, we help them, but it must be possible. So we have to make time and I don't think they are restricted, but maybe they say they are. When he wants to play with a friend, that is in the city but a few hundred meters. Then he can go alone, so we don't bring him. So that's no restriction, but he cannot go to football on his own, then he has to wait for us.

MS: *How would determine the area where they are allowed to go alone?*

I12: That depends on the streets he has to cross and the distance of course. I think 1km, 1000 meters from our house.

MS: *Also the daughter?*

I12: No, she is bounded and restricted. And she is six, so she doesn't feel like we are restricting her. She can't go by her own.

MS: *It is of course interesting to see what you would like to change. Because increasing children's mobility can eventually lead to enhanced community participation. So how would you improve the transportation networks?*

I12: That is a difficult one, because in my work I think about that question. From my perspective, I think the hardest one is the scooters. The vehicles that are on the cycling path, but they are faster. The fast bikes, the scooters. Because in the last years we have the rentable scooters "Check". Maybe you have to forbid that, I think. Because a lot of students are hiring them, and they can also bike I think. That is also a question to you.

MS: *I always cycle or walk.*

I12: Maybe that is one of the greatest issues here Groningen. And furthermore, the streets are relatively safe, I guess. You can say that you have to forbid all the streets in the inner city to enter with cars, but I think that won't help to avoid accidents.

MS: *And what factors would increase the quality of road designs?*

I12: A good shape, a good design. For example the Grote Markt, the new design of it. There are no cycling paths, no streets designed. You have to go by your own through the square and then you don't know where to go. So there happened a lot of accidents after the last weeks. So I think that is not a good solution.

MS: *So not the shared space that they sometimes promote?*

I12: No, not on that scale, maybe on a smaller scale. This is a very large square and I think that is too large for a shared space. What you have, in my neighborhood, they are making a fietsstraat, a cycling street.

MS: *Where the cars are guests?*

I12: Yes. I think, that is a good solution. That is a smaller scale and because of the red paint it is also clear that it is for cycling. It is all about the design of the streets and the scale of the space.

MS: *So you would say, designing around cyclists is a solution?*

I12: Yeah. Especially outside the inner city, there you have to design around cycling. Inside the inner city, maybe you have to design for walking. Less cycling, more walking, maybe a solution.

MS: *How do you think accessibility can be improved?*

I12: A good one is the cycling parking garages, where you can park your bike inside, so the risk for theft is less.

MS: *And do you think that the activities that are there and where they are located that is alright?*

I12: Yeah. For me that is okay, that doesn't need another design.

MS: *And what factors need to be addressed to increase traffic safety? Something that you have not said yet.*

I12: Yeah. I said a lot about the scooters and the volume for cycling. Speed limits for cars. Maybe it will work, when you have to cross a street in the inner city, you have to watch carefully for cars and when they are speeding that is not a good thing of course. But I don't know how to reach that in the inner city. The bumps, but I also drive the car and that is not nice.

MS: *But are there any plans to just have 30km/hrs?*

I12: Yeah, there are plans. You know Amsterdam, they have the whole inner city as a 30km/hrs zone. And we look for it for Groningen. From my view of cycling in the city it works, but I am also a car driver and then I think "no, maybe not.". So no, I don't know exactly.

MS: *Great, do you have anything to add regarding children's freedom of mobility and their participation in the community?*

I12: Also difficult for me, because my children are participating, I guess. For some people it's difficult to enter because of the costs from activities, football, jonge onderzoekers, so I think that it's more important to lower the costs, so the accessibility is greater. That has nothing to do with road design, I guess.

MS: *No, but that is also valuable.*

I12: Maybe that, make the activities itself lower accessible for lower income. And maybe a lot of activities are concentrated around the inner city and for me it's good because I am living in the inner city, but you see the neighborhoods outside the inner

city, Selwerd, Paddepoel, maybe it's good to have there also enough activity possibilities.

MS: *So that they are spread out a little bit or more activities even?*

I12: Yeah.

MS: *Alright, that was then my last question and if there is anything later on again, please contact me. I will stop the recording now.*

5. Template “Agreement to participate”



university of
 groningen

faculty of spatial sciences

research ethics
 committee

Agreement to participate - Research Ethics Committee (REC)

in a research project:

Title: *Perceived Cycling Safety Among International and Dutch Students in Groningen*

Subtitle: *The Influence of Cycling Infrastructure, Knowledge of Rules and Cycling Behaviour*

The research aims to identify the factors influencing the perceived cycling safety for Dutch and international students in Groningen. This research aims to describe the perceived safety of cycling infrastructure, knowledge of the rules, and cycling behaviour of cyclists among the two groups. By having better insight into safety, further implications can be drawn on how safety can be improved.

- I have read, and I understand the information sheet of this present research project.
- I have had the opportunity to discuss this study. I am satisfied with the answers I have been given.
- I understand that taking part in this study is voluntary and that I have the right to withdraw from the study until the moment that the study has been published and to decline to answer any individual questions in the study.
- I understand that my participation in this study is confidential. Without my prior consent, no material which could identify me will be used in any reports generated from this study.
- I understand that this data may also be used in articles, book chapters, published and unpublished work and presentations.
- I understand that all information I provide will be kept confidentially either in a locked facility or as a password-protected encrypted file on a password protected computer.

Please circle YES or NO to each of the following:

I consent to my interview being audio-recorded YES / NO

I wish to remain anonymous for this research YES / NO

If YES

My first name can be used for this research YES / NO

OR

A pseudonym of my own choosing can be used in this research YES / NO

“I agree to participate in this individual interview and acknowledge receipt of a copy of this consent form and the research project information sheet.”

Signature of participant: _____ Date: _____

“I agree to abide by the conditions set out in the information sheet and I ensure no harm will be done to any participant during this research.”

Signature of researcher: _____ Date: _____

Please fill in the following information. It will only be used in case you want to be sent a copy of the interview notes so that you have the opportunity to make corrections.

Address:

Email: