TRAFIKVERKET

Children’s Independent Mobility in Sweden

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Foreword

In the 1990s a UK study that attracted much attention showed that children's independent mobility had decreased drastically between the 1970s and the 1990s. Similar studies had also been carried out in Sweden.

In 2010 we were contacted by the Policy Studies Institute in London and invited to take part, along with ten other countries, in an international study aimed at replicating earlier studies into children's independent mobility. The goal of the project is to explore how children's independent mobility varies internationally and to identify the factors affecting this and the implications it has for children's development.

The research is likely to generate findings which could inform policy and practice relating to changes in children's autonomy and their wider consequences. It is also likely to pose some challenging questions for policy-makers and society as whole as to how we can create better environments for children's physical and social development, their health prospects and the quality of their lives.

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Summary

The *aim* of this project is to explore children's independent mobility, that is, the degree to which children of different ages have the freedom to make trips to school, friends, shops and other destinations unaccompanied by adults and the implications this may have for children's development.

The schools were chosen on account of their different characters, social as well as physical, and this is reflected in the nature of the children's independent mobility. *Maria* School is situated in a typical inner-city area and *Sjöstad* School in a new-build area of urban character lying immediately adjacent to the inner-city itself. *Sjööng* School consists mostly of detached dwellings with light through-traffic and is surrounded by larger roads. *Bredäng* is an area from the 1960-70s with multi-storey dwellings and traffic separation, inhabited mainly by immigrants. Rural *Fjärdhundra* in the municipality of Enköping, 90 kilometres from Stockholm, is a small community, but the school has a large catchment area encompassing various villages and small towns. These five schools are not meant to be representative of the country as a whole, but the schools are located in areas that may be regarded as typical.

One class from Years 2-9 in each school (8-15 years of age) was included in the study. Of the 941 questionnaires distributed to pupils, 797 were completed, i.e. a response-rate of 85 per cent. The questionnaire was completed by 482 parents, a response-rate of 52 per cent. The data collection for this questionnaire study was the responsibility of a consultancy group (Nordiska undersökningsgruppen/the Scandinavian Inquiry Group, 2011). Interviews with teachers and head teachers in the five schools were also carried out.

The *introductory section* presents the background to the study. Issues of accessibility and independent mobility are discussed along with safe and developmental outdoor environments for children. A description is also given of Swedish national policy and statistics together with information about children's independent mobility from nationwide studies.

A summary of the *findings* shows that:

- Licences of independent mobility increase with age
- More than half the children walk to school, a few cycle
- More children were driven to school ”today” than stated by parents when naming the usual mode of transport
- Half the children who were driven to school “today” walk home, one in five takes the (school) bus
- More than half the children wish to walk or cycle to school – most among primary school children
- Around a third of the children who are driven to school are happy with the arrangement – 30 per cent would rather cycle, 20 per cent would rather walk
- A third of primary school children, but few secondary school children, are accompanied to school by an adult
- Two-thirds of the children get to school within 15 minutes
- A third of boys and a quarter of girls spend more than three hours a day in front of the computer or TV – parents underestimate these figures
- Almost all children feel safe when outdoors in their own neighbourhood without an adult. Few children are worried about traffic, more about strangers

- Parents are worried about traffic – the main reason they collect their children from school
- Attitudes towards good play environments for children reflect each area's unique character
- Both parents and children in traffic-separated and multi-ethnic Bredäng are more worried about the danger from adults than from traffic
- The younger children in inner-city Maria have more limited licences of independent mobility, owing to traffic dangers
- Among primary school children in traffic-separated Bredäng 80 per cent went to school unaccompanied by an adult ”today” and in inner-city Maria around 50 per cent

In the final section (*Discussion and conclusion)* the results from the questionnaire studies of children and parents are discussed. Current studies are related to earlier studies from Sweden. Finally the results are placed in the context of theoretical concepts within developmental and environmental psychology.

This report has been compiled by Professor Emeritus Pia Björklid of Stockholm University and Mats Gummesson, Licentiate of Engineering, Swedish Transport Administration.

Introduction

This introductory section presents the background to the study. Issues of accessibility and independent mobility are discussed along with safe and developmental outdoor environments for children. A description is also given of Swedish national policy and statistics together with information about children's independent mobility from nationwide studies.

Background and aims

Children's independent mobility has been the subject of considerable attention during recent decades in Sweden. Already during the 1960s research showed that children's play habits and independent mobility were affected by traffic in the local environment (see Sandels and Wohlin, 1960). This led to investigations and standards for the planning of residential areas in which the need for traffic separation and play areas was emphasized. These standards are no longer applicable.

Research during the 1990s showed that children's independent mobility varies according to the design of the residential environments (Björklid 1997). This research contributed to the Swedish Road Administration's decision in 2000 to initiate nationwide studies of parents' understanding of road safety along school routes. These studies have been repeated every three years. The questionnaires are sent to around 2800 parents of children aged 6-15. The questions deal primarily with the children's school routes. The Swedish Road Administration (now the Swedish Transport Administration) has also funded research into children's independent mobility and accessibility.

The *aim* of this project is to explore children’s independent mobility, that is, the degree to which children of different ages have the freedom to make trips to school, friends, shops and other destinations unaccompanied by adults and the implications this may have for children’s development. The list of partner countries is: Australia, Brazil, Denmark, England, Finland, France, Germany, Israel, Italy, Japan, Norway, Portugal, South Africa, Sri Lanka, Sweden and Tanzania. The same questionnaire as that used in England (Hillman, Adams and Whitelegg, 1990) was distributed to children and their parents. The studies make it possible to investigate differences in children's mobility in different countries and the reasons such differences exist.

Accessibility and mobility

The most important aspect of accessibility is the ease with which particular activities can be reached. In order to increase independent mobility for children, therefore, access as pedestrians, cyclists and also users of public transport is required.

Independent mobility refers to the freedom children have to spend time in their outdoor environment without needing to be escorted by an adult. If there are traffic hazards in the environment and parents are worried that their child may be injured in traffic or may be subject to other dangers, then mobility will be reduced, which can have negative effects on the child's development, welfare and health. According to the World Health Organization's action plan for children's environment and health, children's safety and mobility will become an increasingly important focus for promoting children's health. Several European countries are carrying out development work designed to improve safety on school routes and reduce the need for car travel to school and leisure activities.

Accessibility and mobility are often understood to be synonymous. However, the environment may be accessible and regarded as safe and yet children are still escorted to different places and activities because of other factors – lack of time, another child is going to day care, other children are driven to school, bad weather and so on. The expression “back-seat generation” is one that appears in both Swedish and international debates. But the opposite can also be true: the traffic environment is dangerous and regarded as unsafe but children still walk or cycle on their own to school, friends and other activities. Parents are forced to accept certain traffic risks in the children's local environment. The children live dangerously and the parents are anxious. This creates a conflict which parents in areas with mixed traffic are required to live with and which forms a part of their everyday experience (Björklid, 2002).

Safe and developmental environments for children

Children's road safety problems have been recognized in Sweden for a long time. As far back as the 1960s Sandels carried out groundbreaking studies of young children in traffic. Her book was published in Sweden in 1968 and translated into English as *Children in Traffic.* She concludes her book with the following words: ”It is not possible to fully adapt small children to the traffic environment of the seventies. Therefore the 1970’s traffic environment must be adapted to the children. The responsibility lies with our authorities” (Sandels, S. 1975, p. 153).

The reason for this conclusion was that during this time both researchers and authorities strongly emphasized the effect of training on children's road safety. Sandels showed that children are not developmentally mature enough to cope with all traffic situations before the age of around 12 (cf. WHO, 2008). On the basis of both developmental theory and empirical studies Sandels drew up the following set of developmental restrictions.

Children's visual abilities are not properly developed until teenage years. Moreover it takes a long time to learn to interpret what the eyes are actually seeing. For example, estimating the speed of cars requires experience and training. Children up to the age of nine have difficulty adjusting their gaze from near to far. They have a narrower field of vision than adults and are worse at detecting movement out of the corner of the eye. Children are also not as good as adults at identifying where a sound is coming from. It can easily happen that small children look at one car and run in front of another that is signalling.

Younger children are not capable of dividing their attention – they focus on one thing at a time. For example, when they cycle they have to concentrate on pedalling and cannot at the same time concentrate on the traffic. Cycling is more a play opportunity than a mode of transport. One of the greatest problems faced by children in traffic is that they are trapped within an egocentric mindset. They are unable to take the point of view of the motorist and take account of that. Both children and adults may ”choose” not to take the other's point of view, in other words not to understand another person's thinking and experience. The difference is that children do not possess the ability to do this. For example, the term ”rushing-out accident” reflects an adult’s view of things. From the child's perspective it is the car that rushes out at them when they are on their way to somewhere else. Neither adult nor child is expecting an encounter with the other.

Nor can one expect consistency in children's traffic behaviour. One and the same child may one day display safe traffic behaviour but the next day be a poor road user. Small children are easily distracted by their feelings of for example happiness, anger or sudden interest in

something and can easily give way to these impulses. It can therefore happen that they run across the road to a friend. Whereas adult road users can be objectively focused, it is impossible for children to overcome their play orientation. They carry their play with them even in traffic.

Children are trusting of adult authority. They expect adults to follow the appropriate rules. When rules have been learned, one expects them to be followed. But traffic does not operate this way. Children also place the blame on themselves. When children were interviewed they stated time and again that ”you only have yourself to blame” when they were exposed to an accident risk ”I didn't notice” (Björklid, 1994). In police reports of traffic accidents it is also apparent that children seldom place the blame for the accident on the adult – while the opposite may often be the case.

Finally, children are small in size. They are unable to see over the tops of cars in order to assess the situation. Nor can they be seen so well by other road users.

Children are exposed to dangers even when they have behaved perfectly correctly. Even when parents have shown children how to behave in traffic, this is not sufficient to ensure the child's safety and security. In an interview study (op.cit.) more than half the children reported being involved in an accident or near accident.

> I nearly cycled in to a car that drove into the yard, though they're not supposed to drive there... I suppose I was five or six years old — I didn't see the car — it came from the side. (Boy aged 14)

The conclusion is that the environment must be adapted to suit children and safe developmental environments need to be created for children. This was the demand of the Swedish Child Safety Commission (SOU 2003:127) on the basis of the UN Convention on the Rights of the Child (UNCRC). But even during the 1970s this view was put forward in different Swedish investigations. The foremost requirement for children's road safety is to create an environment where children can move about freely without the risks to which unprotected road users are exposed in a mixed-traffic environment. This also became the departure point for the guidelines to the Swedish National Curriculum. Using traffic as its theme, the Swedish Road Administration carried out development work in schools, where pupils studied their own local environment. The aim was to stimulate children's curiosity and desire to learn about society and traffic so that they were able, willing and confident enough to take part in work for the improvement of their local environment. Today the school's road safety work is combined with education for sustainable development. On the basis of the UNCRC, different local authorities together with the Swedish Transport Administration are carrying out child-impact analysis in which a proportion of the work consists of children's and young people's own statements and experiences of their local traffic environment.

Children’s independent mobility in Sweden

In the mid-1980s Spolander (1985) carried out a representative national survey aimed at studying, among other things, the extent of children's independent mobility in travelling to school and other activities. Almost all (97 per cent) of 7-9-year-olds were allowed to walk to school unaccompanied by an adult, according to their parents. Twenty years later this figure had dropped to two-thirds and in 2009 and 2012 to less than half (Swedish Road Administration, 2009; Swedish Transport Administration, 2012a).

However, the figure varies according to the nature of the school route and where the children live. In one traffic-separated suburb 95 per cent of children between the ages of 7 and 9 were allowed to walk to school unaccompanied by an adult, while around 80 per cent were allowed to do so in a residential area consisting mainly of single-family houses. In an inner-city area this figure was only around 50 per cent (Björklid, 1997). A similar result was found when the children themselves were questioned in the same areas (Heurlin-Norinder, 1997).

Even if children are allowed to walk to school alone, this does not necessarily mean that they actually do so. In one residential area where traffic-calming measures and a speed limit of 30 km/h were in place, it was found that around 70 per cent of parents of 7-9-year-olds considered that the road to school was safe; 80 per cent of these children were allowed to walk to school alone. According to the children themselves, half of them walked to school unaccompanied by an adult ”today”. Many 7-9 year-old children tended to be driven to school (61 per cent) but only 13 per cent did so, on a daily basis. In other words, the children were not driven to school every day, according to the parents. When parents were asked how they themselves travelled to school when they were children, only a small proportion (3 per cent) said they were driven there (Björklid, 2001).

In a questionnaire study involving around a thousand parents of 7-12-year-old children we found that traffic was the main reason that children were not allowed to walk to school alone. On the other hand, when it came to the reasons why children were not allowed to walk to other places on their own and to be outdoors after dark, the parents said it was because “the child is too little” and they were “worried that some grown-up might molest the child” (Björklid, 2002).

Statistics

Around 1.9 million of Sweden's approximately 9.5 million inhabitants are children aged 0-17. Around 85 per cent of the population lives in built-up areas.

From 2001 through to 2011 the total number of school children has decreased. A reduction in the number of pupils means that some schools have closed down. The number of schools in built-up areas fell by 3 per cent during the period 2002-2007. In rural areas and sparsely-populated areas the number of schools fell by 9 per cent. This has contributed to an increase in the number of children being driven to school. The number of children aged 7-15 is set to rise continuously between 2012-2020.

Sweden has one of the lowest number of child road fatalities in relation to the size of the age group (cf. Figure 61). Both Swedish and international studies show that it is not just the accident rate that has decreased but also children's independent mobility.

The risk of being injured in traffic is linked to socio-economic differences among children and young people. Swedish children of manual workers have a 20-30 per cent higher risk of being injured as pedestrians and cyclists compared with children of intermediate and high-level salaried employees. The differences increase when children begin to use mopeds, motorcycles and cars (Hasselberg, 2004).

It is usually the case that statistics relating to the number of injured on the roads are taken from accidents reported to the police. This means for example that there will be a large number of unrecorded accidents involving cyclists and no other vehicles, since such accidents are rarely reported to the police. Sweden has a system of accident reporting, STRADA, in which both the police and casualty departments of hospitals report on those injured or killed in road-traffic accidents. However, hospitals are clearly better placed to judge the seriousness of accidents. Among children injured in traffic, cyclists are the biggest group (47 per cent), followed by pedestrians (20 per cent) and riders of mopeds (19 per cent). Short interruptions to the cycle path network, where cyclists are forced out among traffic, mean that existing cycle paths lose their safety potential. It can be especially dangerous when safety standards are suddenly suspended because the resulting risks are unexpected (Gummesson, 2012)

National policy

In 2009 the Swedish parliament revised the goals of its transport policy to stress the importance of accessibility, safety, health and the environment. This included children and young people. Children's road safety was given a high priority in transport policy. It was emphasized that children's needs and point of view should permeate the whole of transport policy and should start from the UNCRC. The transport system should be accessible to, and safe for, children. Children's sensitivity to environmental influences should be taken into account in the planning of infrastructure.

The Swedish government stresses the importance of children's independent mobility in the bill *Goals for future travel and transport* (prop.2008/09:93). In order to increase children's safety and independent mobility, systematic work is required to make traffic and traffic environments suitable for children as unprotected road users. The traffic environment should be seen as safe and secure. In a report into increased access for children, the Swedish Transport Administration (2012b) stresses the need to work towards adapting the transport system to children's abilities and capacities rather than making children adapt to the existing transport system.

Children should have greater opportunity to move about independently without being reliant on adults accompanying them or driving them. The government suggests examples such as additional cycle paths, measures to improve safety on footpaths and cycle paths, safer school roads and the introduction of 30 km/h areas.

The number of children killed on the roads has decreased substantially in recent decades. The government bill points to research which states that reduced independent mobility among children may be the reason for such a reduction. Fewer road accidents may be the result of less exposure. It is important that a continued reduction in the accident rate be combined with increased independent mobility.

Children's opportunities for travelling on their own to different destinations are dependent on a number of factors. These may include the parents' estimation of road safety and environmental factors, the distance to be travelled and other safety issues as well as the

parents' understanding of the child's ability to cope with different traffic situations. The government bill also points to reports that children are leading increasingly sedentary lives, which can entail a deterioration in public health in the long term. Transport policy and the planning of the physical environment should work together to promote both increased accessibility for children and greater health and safety.

In 1990 Sweden ratified the UNCRC, which contains 54 articles, of which there are four presiding principles: the child's best interest in the first place (article 3); all children should have the same rights and equal value (article 2); the child's right to life and development (article 6) as well as the right to express their opinions (article 12). Work to increase children's independent mobility is supported by the UNCRC and its four main principles. Another important article is the child's right to play and recreation (article 31).

The UN committee for children's rights, in Geneva, recommends that countries which ratified the Children's Convention should carry out child-impact analyses with regard to decisions affecting children and should ensure that children's best interests are considered in the decision-making process. Conflicts of interest may arise not only between children and adults but also between children of different ages or from different residential areas or with different circumstances, and this is something that impact analyses can elucidate. The Swedish Road Administration was the first official body in Sweden to systematically carry out and document child-impact studies. The Swedish Transport Administration’s publication (2011) states that a safe and secure road to school is a necessary requirement in order for children and young people to be able to travel to school on their own and thereby exercise greater control over their own mobility. Reference is also made to earlier research (e.g. WHO 2008) into children's restricted ability to cope with traffic environments.

The areas surveyed

We chose four schools from different areas within greater Stockholm and one school from a rural area. The areas differed in both physical and social aspects. This small number of schools is not meant to be representative of the country as a whole but the schools are located in areas that may be regarded as typical. All the schools are state schools and can be chosen by parents even if their child has been assigned a different school.[1]

Maria School

Maria School is located in Stockholm's inner city where there are older buildings but also newer ones from the 1960s to 2000. It's a typical inner-city school surrounded by busy streets, although some children can reach the school by means of footpaths and cycle paths. Virtually all dwellings consist of multi-occupancy buildings, of which around 60 per cent are owner-occupied flats. Maria School has around 700 pupils with 46 per cent girls. Eleven per cent of parents have a foreign background and 71 per cent have had a higher education (such as college or university level).

Figure 1 Maria School

[1] According to Swedish school law, pupils have the right to be placed in a school close to their home, the so-called proximity principle. But in the early 1990s the opportunity to choose a school was introduced. The aim was to increase freedom of choice and, as a result of greater competition, to encourage an improvement in quality.

The area around the school has a speed limit of 30 km/h. There are pavements on both sides of the roads. Several streets around the school are one-way and closed to through-traffic.

To the west of the school, however, there is a through road with heavy traffic. Along a section of this road, running alongside the school, there is a reduced speed limit of 30 km/h. The school's main entrance is on this road.

Around 300 metres north of the school there is an underground train station and 300 metres to the south there is a commuter train station.

There are bus stops next to the school.

There are two light-controlled crossing places on the road alongside the school. At the crossing place shown in the photo, traffic speeds range from 30 km/h to 50 km/h.

Sjöstad School

Sjöstad School is situated in a new residential district called Hammarby Sjöstad, 5 km from Stockholm city. It was built according to the principle of new urbanism, which means that many children have to cross roads in order to get to school. It takes around 20 minutes to get to Stockholm city by underground train and trolley bus. The area consists of multi-occupancy buildings, with around 60 per cent owner-occupied flats. Heavy traffic with trams and buses borders the school in one direction, although there are also footpaths and cycle paths. Sjöstad School has around 450 pupils with 43 per cent girls. Fourteen per cent of parents have a foreign background and 71 per cent have had a higher education.

Figure 2 Sjöstad School

The area around the school has a speed limit of 30 km/h. On one side of the school is a large play area accessible by footpaths and cycle paths.

On the road outside the school there is a cycle area and pavement along one side. Elevated crossing places for pedestrians are situated next to the school.

At the back of the school by the playground there is a network of footpaths and cycle paths.

In front of the school there is both a bus stop and a trolley bus stop. The trolley bus connects via a change with central Stockholm.

Sjööäng School

Sjööäng School lies to the south of Stockholm, around 10 km from Stockholm city and a 30-minute journey by bus and commuter train. It is in the Älvsjö district, which was built in the 1920s. The school is situated in an area with rich cultural traditions including a palace from the 16th century. In the picture below the castle park can be seen in the top right-hand corner.

The area consists mainly of single-family housing but with some low-rise blocks of flats. It resembles a small Swedish country town. Most residents (around 80 per cent) own their own house or flat. Sjööäng School has 600 pupils with 50 per cent girls. Twenty-two per cent of parents have a foreign background and 53 per cent have had a higher education.

Figure 3 Sjööäng School

The area around the school has a speed limit of 30 km/h. A park adjoins the school. Some streets have pavements on both sides of the road and others on just one side.

Next to the school there are small roads with a speed limit of 30 km/h and no direct through-traffic. A lot of cars park around the school buildings, especially at those times when children are dropped off or collected from school.

To the west of the school there are single-family houses and to the east, as shown in the picture, there are three-storey blocks of flats.

The commuter train station is approximately 1 km away and the nearest bus stop around 150 metres

South of the school is a busy main road with very heavy traffic. But a footpath and cycle paths lead to a viaduct over the road, which allows children to travel to school on foot and by bicycle.

Bredäng School

Bredäng School is situated in a suburb 12 km from Stockholm city and around 30 minutes by underground train. The area was constructed between 1962-67, with housing for around 10,000 people. It's a typical district for its time, with largely separated footpaths and cycle paths. The area consists mainly of high-rises with 8 or 9 floors, with one in five residents owning their own flat. Bredäng School has around 450 pupils with 46 per cent girls. Eighty-one per cent of parents have a foreign background and 28 per cent have had a higher education.

Figure 4 Bredäng School

The school is situated by an underground station. Next to the school, as shown in the foreground of the picture, is a shopping centre with a large car park. The school playground also contains a swimming baths.

There are bus stops on the main roads that surround the area.

In the area around the school there is a network of footpaths and cycle paths. The speed limit on the roads in the area is 30 km/h.

A number of underpasses allow children to travel to and from school without needing to cross any roads.

Fjärdhundra School

Fjärdhundra is a small built-up area in the municipality of Enköping with around a thousand inhabitants, situated 90 km north-west of Stockholm. The school lies 18 km north-west of the town Enköping. The municipality consists of 40,000 inhabitants with a mix of small built-up areas and rural areas.

Fjärdhundra School has around 350 pupils with 48 per cent girls. Four per cent of parents have a foreign background and 39 per cent have had a higher education.

Figure 5 Fjärdhundra School

The speed limit throughout the area is 50 km/h. Approximately half the students are driven to school by school bus from areas around Fjärdhundra.

A main road divides the community of Fjärdhundra into two parts. Three elevated crossing places along this road allow children from the north to get to and from school.

The buildings consist mostly of single-family houses, though there are also three-storey blocks of flats, principally along the main road.

The picture shows the elevated crossing place nearest to the school. The road to the right in the picture leads to the school, where the speed limit is
30 km/h.

On the main road that runs through the community there is a pavement on one side of the road in the central region that comes to a stop in the eastern region.

A number of footpaths and cycle paths connect directly to the school.

Methodology

Eight classes from each school took part in the study. Class lists were collected as a basis for the study, in order that the children's responses to the questionnaire could be linked to their parents' responses.

Children in Sweden begin school at the age of seven, when reading skills are naturally low or absent. One class from Years 2-9 in each school (8-15 years of age) was included in the study – a total of 941 pupils. The pupils' questionnaire was distributed and collected during lesson time. The project assistant took the younger pupils through the questionnaire, question by question, with the aid of an overhead projector.

Of the 941 questionnaires distributed to pupils, 797 were completed, i.e. a response-rate of 85 per cent. The reasons for the missing data were that the questionnaires were unusable or the pupils had gone home from school or were sick. In a few cases some members of the class were engaged in other activities or other lessons (e.g. where there were newly-arrived children from abroad who had not learned Swedish yet).

In collaboration with the head teachers of the schools it was decided to send out the parents' questionnaires by post: the missing data would have been greater if the questionnaires had been distributed via the pupils. The parental questionnaire was sent to 939 parents. Fifteen of the questionnaires were returned unanswered, leaving 924 possible respondents. The reason that fewer parents received the questionnaire than children was that addresses for all the children were not available on the class lists. The questionnaire was completed by 482 parents, a response-rate of 52 per cent. It was followed up by two reminders. Parents could also respond via a Web questionnaire and were therefore given a unique login and password along with the paper questionnaire. The data collection took place during September and October of 2010. Interviews with teachers and head teachers in the five schools were also carried out.

Certain questions were changed in the Swedish questionnaire and a number of questions added (see appendix 1).

Sample selection and missing data

A total of 419 questionnaires were answered by both children and their parents. When comparisons were made between children and parents, these 419 pupils were used as the basis. There were 63 parents whose children failed to answer the questionnaire. These parents were therefore not included in the tables and figures presented in the results section. When the questions related to the children's answers alone, all 797 children who completed the questionnaire were used. The differences in response between the sample of 419 children and the sample of 797 children were seen to be negligible in the tables and figures presented.

Table 1 Selection of pupils by school and by age

	Age								
School	8	9	10	11	12	13	14	15	Total
Maria	26	26	27	24	30	26	24	28	212
Sjöstad	22	25	24	23	35	19	23	24	185
Sjöäng	28	26	26	22	25	27	28	31	213
Bredäng	26	27	26	20	22	16	17	17	171
Fjärdhundra	20	22	17	20	24	19	17	21	160
Total	122	126	120	109	126	107	110	121	941

As can be seen, the number of pupils in the different ages is variable.

Table 2 Response by pupils: school and age

	Age								
School	8	9	10	11	12	13	14	15	Total
Maria	23	25	27	21	27	25	19	27	194
Sjöstad	20	25	18	19	20	16	20	22	160
Sjöäng	27	22	20	19	18	21	26	25	178
Bredäng	20	20	14	16	15	14	13	13	125
Fjärdhundra	16	18	16	17	23	18	16	16	140
Total	106	110	95	92	103	94	94	103	797

Table 3 Missing data for pupils by school and by age

	Age								
School	8	9	10	11	12	13	14	15	Total
Maria	12%	4%	0%	13%	10%	4%	24%	4%	8%
Sjöstad	9%	0%	25%	17%	14%	16%	13%	8%	14%
Sjöäng	4%	19%	19%	14%	28%	22%	7%	19%	16%
Bredäng	23%	26%	46%	20%	32%	13%	24%	24%	27%
Fjärdhundra	15%	18%	6%	15%	4%	5%	6%	19%	11%
Total	12%	13%	20%	16%	18%	12%	15%	14%	15%

The missing data for children are highest in Bredäng School and lowest in Maria School.

Table 4 Response by parents and children where both completed the questionnaire by school and age

	Age								
School	8	9	10	11	12	13	14	15	Total
Maria	11	17	14	13	15	16	10	12	108
Sjöstad	12	10	12	7	12	11	13	7	84
Sjöäng	19	11	9	12	8	9	12	13	93
Bredäng	8	6	6	6	9	3	5	4	47
Fjärdhundra	7	11	13	9	15	7	11	14	87
Total	57	55	54	47	59	46	51	50	419

Table 5 **Missing data for parents and children where both completed the questionnaire, by school and by age**

Age									
School	8	9	10	11	12	13	14	15	Total
Maria	58%	35%	48%	46%	50%	38%	60%	57%	49%
Sjöstad	45%	60%	50%	70%	66%	42%	43%	71%	55%
Sjöäng	32%	58%	65%	45%	68%	67%	57%	58%	56%
Bredäng	69%	78%	77%	70%	59%	81%	71%	76%	73%
Fjärdhundra	65%	50%	24%	55%	38%	63%	35%	33%	46%
Total	53%	56%	55%	57%	53%	57%	54%	59%	55%

As can be seen, the missing data here are somewhat higher than when all the parents' responses are included. The distribution between years is fairly uniform, although even among the parents missing data are highest in Bredäng.

What were the gender- and age-distributions among children when both children and their parents responded, compared with when the children alone responded?

Table 6 **Gender- and age-distribution in the different schools where only the pupils completed the questionnaire**

	Schools					
Children and their parents	Maria n=194	Sjöstad n=160	Sjöäng n=178	Bredäng n=125	Fjärdhundra n=140	Total N=797
Primary girl school children	23%	23%	25%	27%	19%	23%
Primary boy school children	26%	28%	22%	29%	27%	26%
Not specified	1%	1%	3%	0%	2%	1%
Secondary girl school children	25%	21%	25%	20%	24%	23%
Secondary boy school children	25%	27%	25%	23%	28%	25%
Not specified	1%	1%	1%	1%	2%	1%

Table 7 **Gender- and age-distributions in the different schools where both children and parents completed the questionnaire**

	School					
Children and their parents	Maria n=108	Sjöstad n=84	Sjöäng n=93	Bredäng n=47	Fjärdhundra n=87	Total N=419
Primary girl school children	26%	24%	33%	23%	15%	25%
Primary boy school children	25%	24%	19%	32%	29%	25%
Not specified	1%	1%	2%	0%	2%	1%
Secondary girl school children	23%	21%	26%	19%	24%	23%
Secondary boy school children	25%	29%	19%	23%	30%	25%
Not specified	0%	1%	0%	2%	0%	1%

No major differences are apparent in the gender- and age-distributions for the different samples.

Data analysis was undertaken using SPSS version 18.

Findings

In this section the results from questionnaire studies of parents and children are presented and compared. First a description is given of parental licences of independent mobility for primary and secondary school children. The second section deals with how children travel to and from school, after which non-school activities are presented. The fourth section gives an account of children's and parents' perception of safety in their local neighbourhood. The final section is concerned with other factors that can affect children's independent mobility, such as age, gender, car availability, social class and areal characteristics.

The results are mainly presented in figurative form. Appendix 2 contains tables corresponding to these figures.

The six licences of independent mobility

On the basis of the parents' responses, six licences of independent mobility, as examined in the British study (Hillman et al. 1990), are recorded below.

Primary school children here comprise the age group corresponding to Years 2-5 (8-11 years old). Secondary school children comprise Years 6-9 (12-15 years old).

Primary school children

The parents' responses for primary school children indicate that:

- 76 per cent allowed to come home from school alone
- 57 per cent allowed to cross busy roads
- 36 per cent allowed to go out after dark
- 33 per cent allowed to use public transport
- 30 per cent allowed to go on their own to places other than school
- 15 per cent of cycle owners (87 per cent own cycles) allowed to cycle on busy roads

The majority of children are allowed to come home from school without an accompanying adult, and more than half are allowed to cross busy roads. The results indicate that many children did not need to cross busy roads in order to come home from school. Among parents who state that they collect their child from school, one in five does so five times a week.

The onset of darkness varies with the seasons. Therefore the question asked was: “Do you allow your child to be outside on their own in the evenings in September/October when it is dark?” During September/October when the data collection was carried out it gets dark in Stockholm and environs about 5 o'clock. Around one in three children are allowed to go out after dark, use public transport, and go on their own to places other than school. Few children are allowed to cycle on busy roads.

The question relating to whether children are allowed and to go on their own to places other than school also contains the alternative “it varies”; 39 per cent of the parents put a cross for this alternative and 30 per cent for “usually taken”.

Secondary school children

What do the parents let older children do?

- 94 per cent allowed to come home from school alone
- 91 per cent allowed to cross busy roads
- 90 per cent allowed to use public transport
- 78 per cent allowed to go out after dark
- 66 per cent allowed to go to places other than school
- 62 per cent of cycle owners (89 per cent own cycles) allowed to cycle on busy roads

Not unexpectedly, older children have much greater licence of independent mobility than younger children. Few older children (3 per cent) are usually taken by an adult to places other than school – 27 per cent of parents state that "it varies".

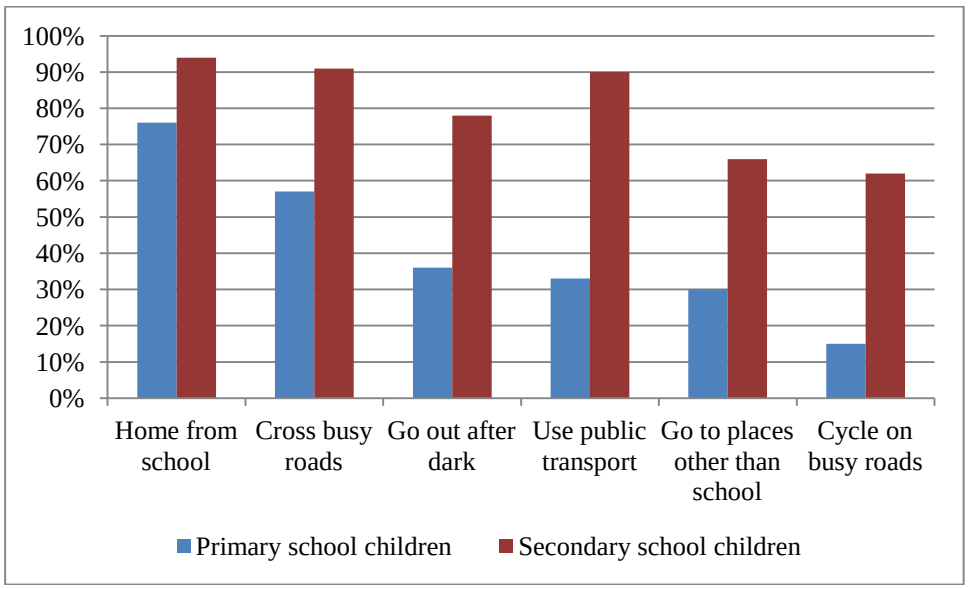

Figure 6 The six licences for independent mobility

Parents' and children's responses to questions on licences

Are parents' and children's responses different? The figure below represents parents' and children's responses to questions relating to licences of independent mobility.

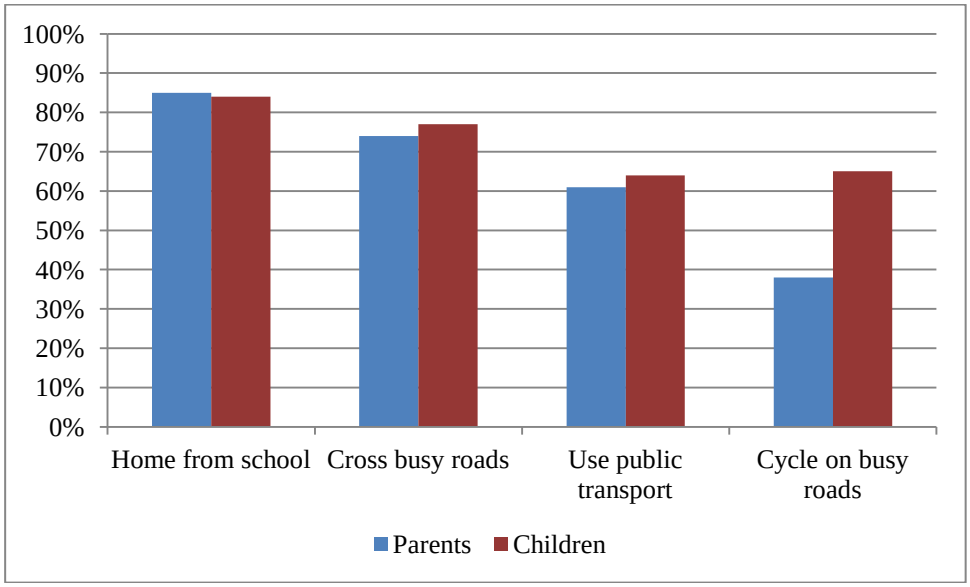

Figure 7a Parents' and children's responses to questions on licences

The questions to parents and children relating to "home from school" are not entirely comparable. The question to parents was more general – "Does your child travel home from school alone?" – whereas the children were asked: "How will you go home today?" There was, however, a close correspondence between children's and parents' answers.

Nearly all the children had a bicycle – 92 per cent according to the children themselves and 88 per cent according to the parents. This may be because the parents understood the question to refer to functioning bicycles while the children understood it to mean all bicycles. The children's responses to questions about being allowed to cycle on busy roads were quite different from the parents'. According to the children themselves, two out of three of them are allowed to cycle on busy roads; according to the parents, this figure is around one in three. It may be that the children and parents had a different understanding of what "busy roads" means. However, the difference relating to "crossing busy roads" was not great.

How different were the responses between parents and primary school children?

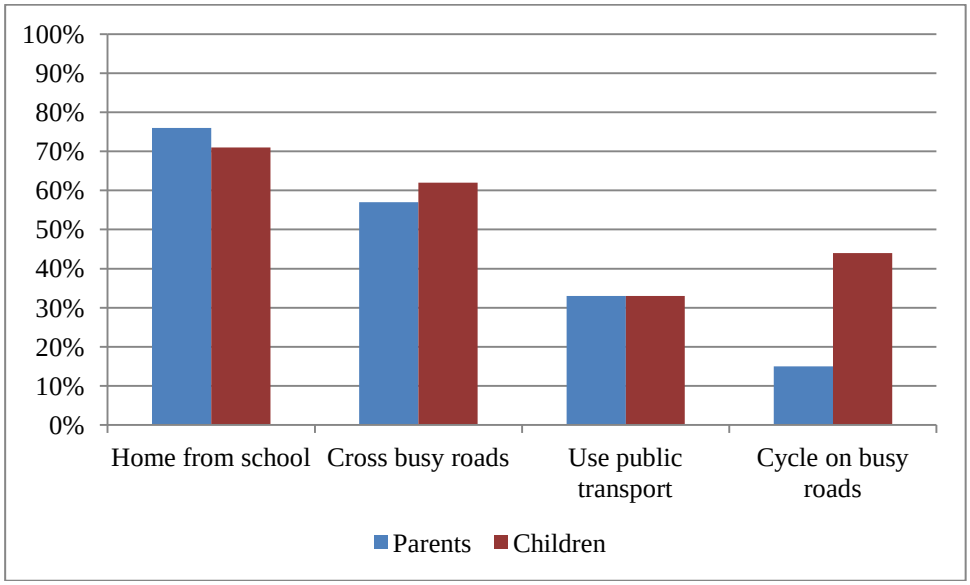

Figure7b Parents' and primary school children's responses to questions on licences

The differences between parents' and children's responses to questions relating to cycling on busy roads were considerable – a high proportion of these younger children overestimated the parents' licences.

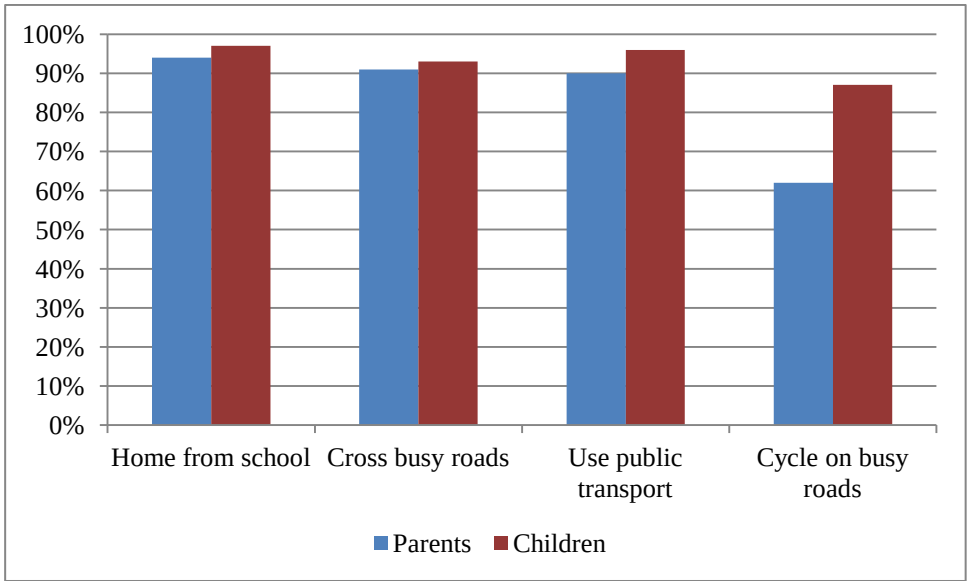

Figure 7c Parents' and secondary school children's responses to questions on licences

The older children also overestimate the parents' licences, especially relating to cycling on busy roads. Somewhat fewer secondary school children expect to be accompanied home from school by an adult "today", compared with what the parents say usually happens.

The children were also asked whether they were allowed to cycle unaccompanied to friends or other activities. 72 per cent of primary school children and 88 per cent of secondary school children stated that they were allowed to do so.

In *summary*, older children have greater licences of independent mobility. Where children and adults were able to answer the same or similar questions, the children mentioned fewer restrictions than the parents – especially when it came to cycling on busy roads.

The journey to and from school

This section deals with the children's mode of transport and whether and not they are accompanied to and from school. Comparisons are made between certain of the children's responses and the parents' responses. How would the children like to come to school, compared with how they actually came to school today? How long does it take to get to school and how does this vary with different modes of transport? Does the mode of transport vary according to the choice of school?

Mode of transport

What is the most usual way for the children to travel to school, according to the parents? This question was asked of parents in the Swedish version.[2]

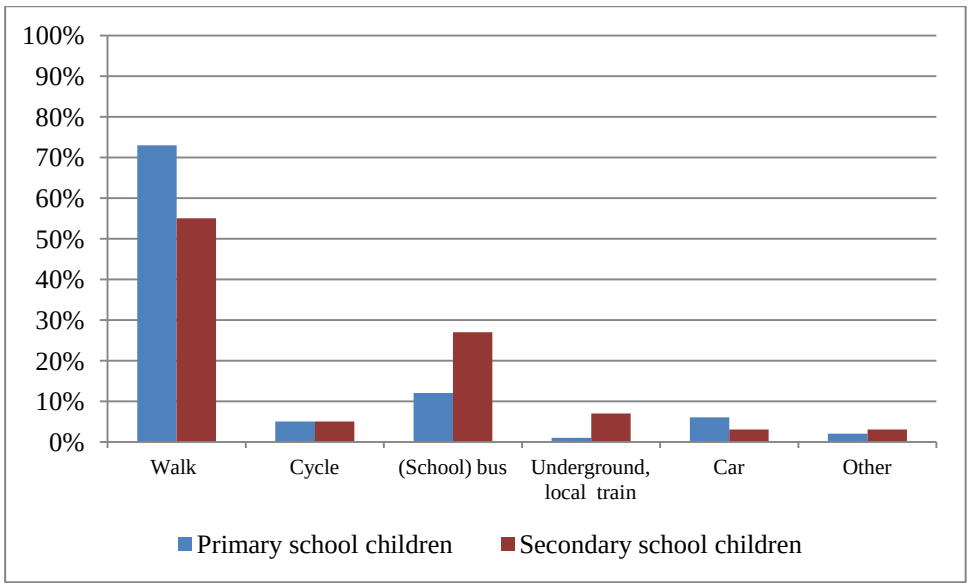

Figure 8a Transport modes to school according to the parents

According to the parents, most children usually walk to school – a greater proportion among the younger than the older children, more of whom take the (school) bus or other forms of public transport (34 per cent). More younger children travel by car (6 per cent), compared to older children (3 per cent). But overall only 4 per cent travel by car. Where parents gave the response ”other,” this refers to trolley bus, tram, ferry boat, skateboard, (school) taxi or kick bike.

[2] In Sweden today there are sometimes no special school buses; rather the local authority buys up ordinary buses, so children cannot tell whether it is a school bus or an ordinary bus.

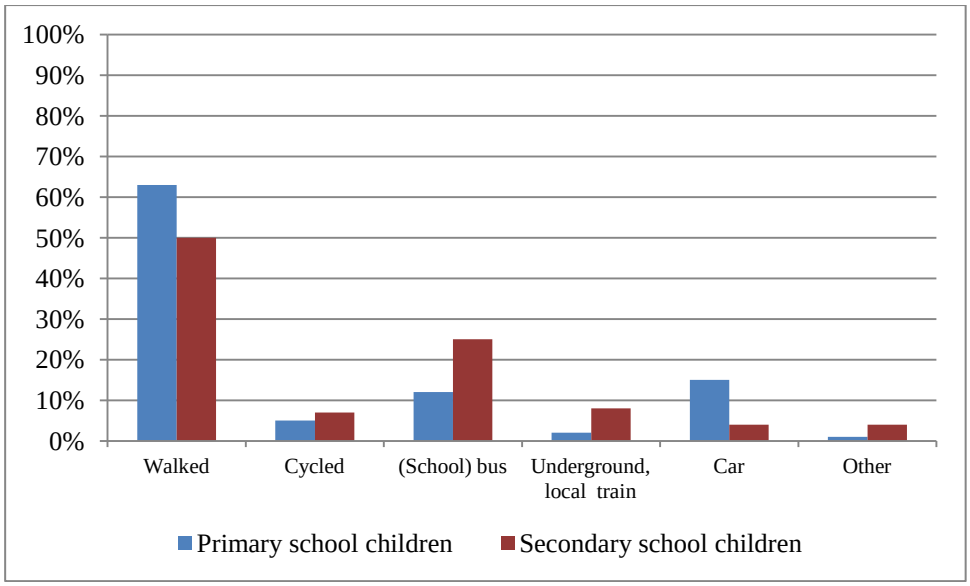

Figure 8b **Transport modes to school "today" according to the children**

The greatest difference between the primary school children's responses and their parents' responses relates to the number of children who walk to school or travel by car. According to the children themselves, fewer of them walked to school "today" and more of them went by car.

How does the mode of transport vary between the different schools?

Table 8a **Children's responses regarding how they came to school "today" in the different areas**

	School				
How did you travel to school today?	Maria n=194	Sjöstad n=160	Sjöäng n=178	Bredäng n=125	Fjärdhundra n=140
Walked	72%	58%	47%	78%	20%
Cycled	2%	9%	8%	3%	4%
(School) bus	8%	6%	18%	2%	57%
Underground, local train	8%	14%	2%	7%	-
Car	9%	6%	14%	9%	16%
Other	1%	8%	3%	1%	2%
Missing data	1%	0%	8%	1%	1%

It is principally the children from inner-city area *Maria* and traffic-separated area *Bredäng* who walked to school "today." We would also point out that the proportion of families without access to a car is greatest in these areas. The majority of children in rural *Fjärdhundra* travelled by (school) bus or car. Only around a quarter of these children walk or cycle. None of the parents of children in Fjärdhundra School is without a car and 86 per cent of these parents have two or more cars (cf. figure 46).

How do the younger children travel to school?

Table 8b Primary school children's mode of transport to school "today" in the different areas

	School				
How did you travel to school today?	Maria n=96	Sjöstad n=82	Sjööng n=88	Bredäng n=70	Fjärdhundra n=67
Walked	75%	65%	56%	76%	21%
Cycled	1%	9%	9%	6%	4%
(School) bus	4%	1%	5%	0%	51%
Underground, local train	3%	10%	0%	4%	-
Car	16%	9%	23%	13%	21%
Other	1%	7%	0%	1%	2%
Missing data	0%	0%	8%	0%	2%

Only one in four of the younger children attending *Fjärdhundra* School walked or cycled to school. Half of them took the (school) bus and around a fifth travelled by car. More than twenty per cent of the younger children in *Sjööng* School travelled by car and slightly more than half stated that they walked to school "today." In inner-city area *Maria* and the traffic-separated suburb *Bredäng* more than three-quarters of children walked to school "today."

How does this compare with the older children aged 12-15?

Table 8c Secondary school children's mode of transport to school "today" in the different areas

	School				
How did you travel to school today?	Maria n=98	Sjöstad n=78	Sjööng n=90	Bredäng n=55	Fjärdhundra n=73
Walked	70%	51%	38%	80%	19%
Cycled	3%	9%	18%	0%	4%
(School) bus	11%	10%	31%	4%	63%
Underground, local train	13%	19%	4%	11%	-
Car	2%	3%	4%	4%	11%
Other	0%	8%	7%	0%	3%
Missing data	1%	0%	8%	2%	0%

Fewer older children walked to school compared with younger children. A greater proportion took the (school) bus– particularly the children from *Sjööng* School, which has a wide catchment area –few of these children travelled by car. The greatest number of children being driven to school or taking the school (bus) is in *Fjärdhundra* School.

How do the children's responses compare with the parents' responses in the different areas?

Table 9 Agreement between parents' and children's responses regarding mode of transport to school

School						
Agreement between parents' and children's responses regarding mode of transport to school	Maria n=108	Sjöstad n=84	Sjööäng n=93	Bredäng n=47	Fjärdhundra- n=87	Total N=419
Walk	90%	79%	73%	92%	78%	83%
Cycle	100%	60%	58%	100%	100%	67%
(School) bus	63%	80%	83%	50%	94%	87%
Underground, local train	33%	88%	50%	67%	-	69%
Car	100%	100%	71%	67%	67%	72%
Total	87%	75%	72%	85%	85%	80%

There is variation in the correspondence between the parents' responses about the ”usual mode of transport” and the children's responses about how they came to school ”today.” The variation is greatest in *Sjöstad* School and *Sjööäng* School, and especially with regard to cycling and public transport in *Sjööäng* School and public transport in *Maria* School.

Will the children return from school the same way they came to school ”this morning”?

Table 10 How did the children get to and from school today?

How did you get to school this morning?						
How will you go home today?	Walked n=441	Cycled n=43	(School) bus n=138	Underground, local train n=52	Car n=83	Total N=797
Walk	90%	2%	4%	12%	45%	56%
Cycle	0%	95%	0%	0%	1%	6%
(School) bus	1%	2%	86%	6%	15%	18%
Underground, local train	1%	0%	3%	73%	6%	7%
Car	2%	0%	4%	2%	28%	5%
Don’t know	4%	0%	3%	2%	2%	3%
Total	55%	5%	17%	7%	10%	100%

In response to the question about how the children came to school today, 23 children (3 per cent) answered “other” and 17 children (2 per cent) failed to respond.

The correspondence between how the children go to school and how they return home is considerable except for those children who travel to school by car. Almost half (45 per cent) of these children will ”walk home today,” a fifth will take the (school) bus or other public transport and only around a quarter will also go home by car.

Do the parents have access to a car?

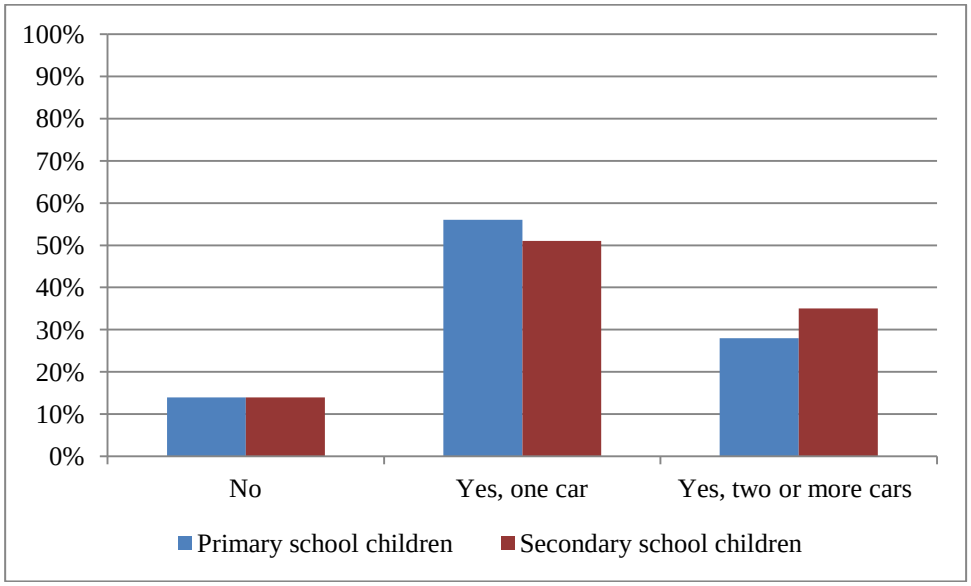

Figure 9 Household access to cars

Most families with children have access to a car – only 14 per cent don't have a car. Among those who have older children, two or more cars are more common. Overall 6 per cent of households lack a driving licence, 29 per cent of households contain one person with a driving licence and 64 per cent contain two or more people with driving licences.

In *summary*, the most common ways of travelling to school are either on foot or on the (school) bus. More younger children walk or go by car compared with older children. There is a difference between what parents understand as the usual mode of transport to school and the mode used by children ”today.” Fewer children walked to school ”today” and more – particularly among the younger children – went by car. More parents of older children have two or more cars, but younger children are more often driven to school.

Most children come home from school in the same manner they went to school. An exception is the few children who came by car. Almost half of these children walk home and one in five uses public transport; only a quarter also travel home by car.

Preferred mode of transport to school

How would the children like to go to school?

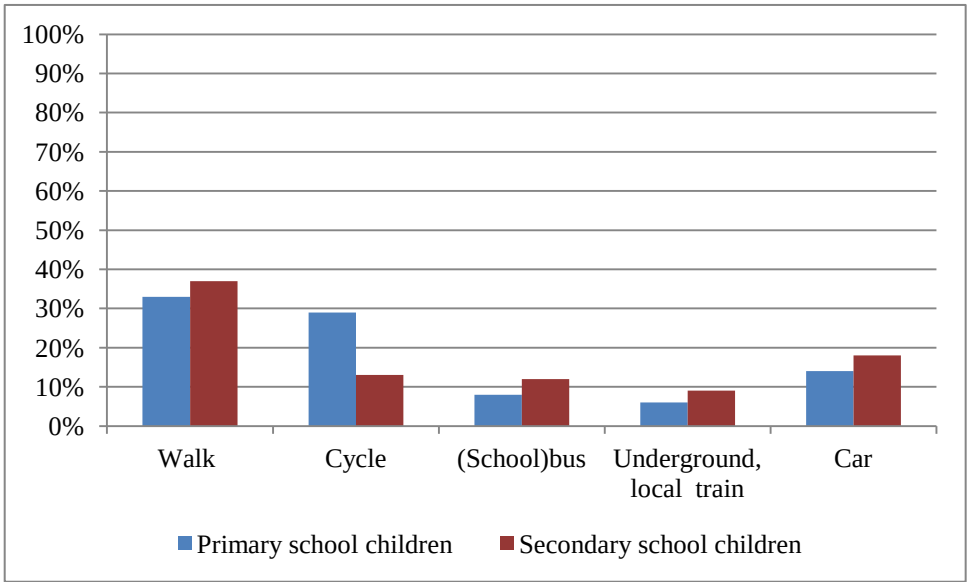

Figure 10 Preferred mode of transport to school

Around a third of all children would like to walk to school and a fifth to cycle. Around 15 per cent would like to go by car, 10 per cent to take the bus and somewhat fewer (7 per cent) to take the underground or local train. In other words over half the children would like an ”active means of transport” – that is, one in which they themselves are physically active.

More of the younger children would like to cycle to school compared with the older children. Almost one in ten selected the alternative ”other” and then gave more or less realistic options such as kick bike, skateboard, moped, quad bike, taxi, limousine, racing car, boat, helicopter, airplane, horse, chute, roller-coaster or lift.

Table 11 Mode of transport, and preferred mode of transport, to school

	How did you get to school this morning?					
How would you like to be able to travel to and from school?	Walked n=441	Cycled n=43	(School) bus n=138	Underground, local train n=52	Car n=83	Total N=797
Walk	55%	5%	7%	6%	22%	35%
Cycle	21%	51%	13%	12%	29%	21%
(School) bus	4%	9%	38%	1%	6%	10%
Underground, local train	3%	7%	11%	37%	4%	7%
Car	10%	14%	25%	17%	31%	16%
Other	6%	12%	6%	21%	4%	8%
Missing data	1%	2%	1%	6%	4%	3%
Total	55%	5%	17%	7%	10%	100%
Children not travelling by preferred mode	45%	49%	62%	63%	69%	53%

As already mentioned, in Table 10, 23 of the children gave the answer ”other means of transport”, and 17 children failed to answer in response to the question about how they came to school today.

More than half the children would prefer another way of going to school than the one they used ”this morning.”

Those who travelled by car were the most dissatisfied. Of the children who went to school by car ”today,” 31 per cent preferred to do so, but nearly as many wanted to cycle and around a fifth would have preferred to walk; one in ten wanted to go by public transport.

The children who went by underground or local train were also dissatisfied. 63 per cent would have preferred another mode of transport. Around a fifth wanted to go by car, around one in ten wanted to cycle and a few wanted to walk.

The children who took the (school) bus would also have preferred another mode of transport. A quarter wanted to go by car, around one in ten to cycle, almost as many to take the underground or local train, and a few to walk.

Of the children who cycled, half of them preferred to cycle, 5 per cent to walk and 14 per cent to go by car. Less than one in ten wanted to take the (school) bus and 7 per cent the underground or local train. But 21 per cent of the other children would have liked to cycle – particularly those who went by car (29 per cent) and those who walked (21 per cent).

Around half the children walked to school ”today” but only 35 per cent of all children preferred to do so. Of the children who walked to school, around half preferred to walk, a fifth preferred to cycle, 10 per cent to go by car, 4 per cent to take the bus and 3 per cent the underground or local train.

In *summary*, more than half the children (55 per cent) walked to school ”today” – that is, more than those who gave it as their preference. On the other hand, significantly more children would prefer to cycle (21 per cent) than those who actually did so (5 per cent). Similarly, those who wished to go by car (16 per cent) outnumbered those who came to school by car ”today” (10 per cent). On the other hand, 69 per cent of these children did not want to be driven to school, which may indicate that they wanted the school to be situated closer to their home.

Accompaniment to and from school

Are the children accompanied to school?

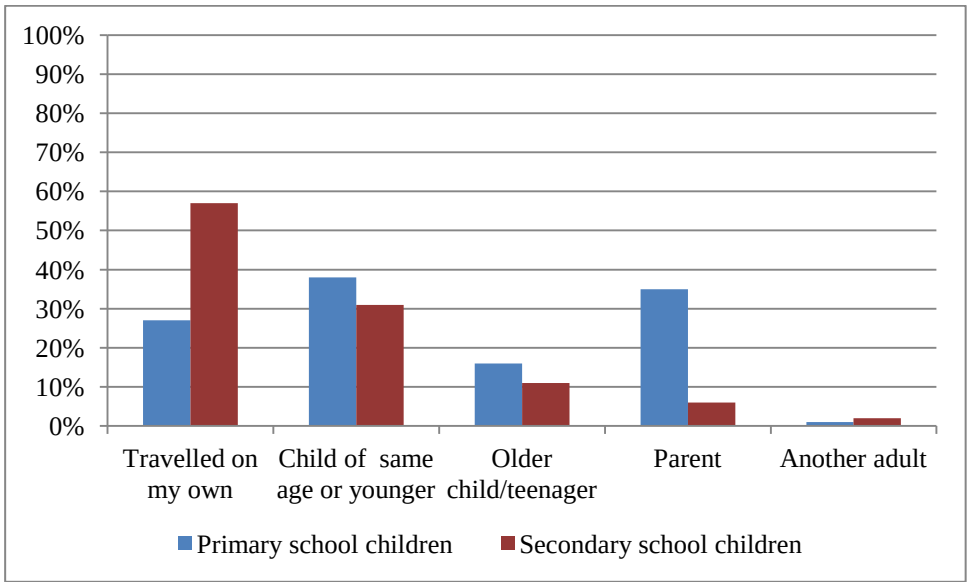

Figure 11 Accompaniment to school

Most children go to school alone or with a friend. Since the children could give more than one alternative, they may also be accompanied by both older and younger children and an adult. It is more common for younger children to be accompanied by an adult or another child. Approximately one in three primary school children are accompanied by an adult, whereas this is the case for less than one in ten secondary school children.

As mentioned previously, 76 per cent of primary school children were allowed to come home from school unaccompanied by an adult, while 71 per cent of the children themselves said they would do so “today” (figure 7b).

Were the children accompanied in the same way when they returned home from school as when they went there in the morning?

Table 12 Primary school children's accompaniment to and from school

Who did you travel to school with this morning?					
Who will you travel home with today?	Travelled on my own n=109	Child of same age or younger n=151	Older child/ teenager n=64	Parent n=140	Another adult n=5
Travel on my own	36%	19%	17%	14%	0%
Child of same age or younger	23%	54%	28%	31%	40%
Older child/ teenager	6%	13%	42%	14%	0%
Parent	17%	25%	23%	50%	20%
Another adult	3%	4%	2%	8%	40%
Don’t know	30%	19%	13%	14%	20%

Here the children could choose more than one alternative.

According to the children themselves, the correspondence between accompaniment to school and accompaniment from school is not great. But around a fifth of children “don’t know”. Half of those who were accompanied to school by a parent are also accompanied by a parent when they walk home. A fifth of those who walked to school unaccompanied said they would be accompanied by other children, and almost the same number said they would be accompanied by parents or other adults. But 30 per cent “don't know”.

Were there any differences between the areas with regard to whether the child was accompanied to school or not?

Table 13a Whether accompanied to school in the different areas

	School				
Who did you travel to school with this morning?	Maria n=194	Sjöstad n=160	Sjööng n=178	Bredäng n=125	Fjärdhundra n=140
Travelled on my own	50%	46%	38%	46%	28%
Child of same age or younger	30%	29%	35%	25%	51%
Older child/teenager	9%	6%	8%	16%	33%
Parent	26%	22%	24%	14%	15%
Another adult	1%	1%	2%	2%	3%

More than one alternative could be given, therefore the total may be more than 100 per cent.

Being accompanied to school by an adult is least common in traffic-separated *Bredäng* and in sparsely-populated *Fjärdhundra*; in the latter area many children take the (school) bus to school. Many children travelled on their own, though this figure was lower in *Fjärdhundra*.

How does this vary between younger and older children?

Table13b Primary school children’s accompaniment to school in the different areas

	School				
Who did you travel to school with this morning?	Maria n=96	Sjöstad n=82	Sjööng n=88	Bredäng n=70	Fjärdhundra n=67
Travelled on my own	23%	39%	25%	31%	16%
Child of same age or younger	44%	26%	40%	24%	54%
Older child/teenager	15%	4%	9%	23%	34%
Parent	48%	38%	40%	20%	21%
Another adult	1%	0%	3%	1%	0%

Most younger children are accompanied to school, though this varies between the different areas. The children in *Fjärdhundra* are most often accompanied by other children, which may be due to the fact that over 70 per cent take the (school) bus or are driven to school. The greatest number of children travelling entirely alone is in *Sjöstad* School. Almost half the children in *Maria* School are accompanied by a parent, while the figure for traffic-separated *Bredäng* and rural *Fjärdhundra* is only around one in five.

Table13c Secondary school children's accompaniment to school in the different areas

	School				
Who did you travel to school with this morning?	Maria n=98	Sjöstad n=78	Sjööäng n=90	Bredäng n=55	Fjärdhundra n=73
Travelled on my own	76%	54%	51%	64%	38%
Child of same age or younger	17%	33%	31%	26%	48%
Older child/teenager	3%	8%	8%	7%	32%
Parent	4%	5%	8%	6%	10%
Another adult	0%	1%	1%	2%	6%

As can be seen, few older children are accompanied to school by an adult and a greater number travel on their own. Only one in five children from inner-city area *Maria* was accompanied by other children, whereas 80 per cent of the children attending *Fjärdhundra* School say that they were accompanied by other children "today." This may also be because they took the (school) bus together.

Does the type of accompaniment vary according to the mode of transport?

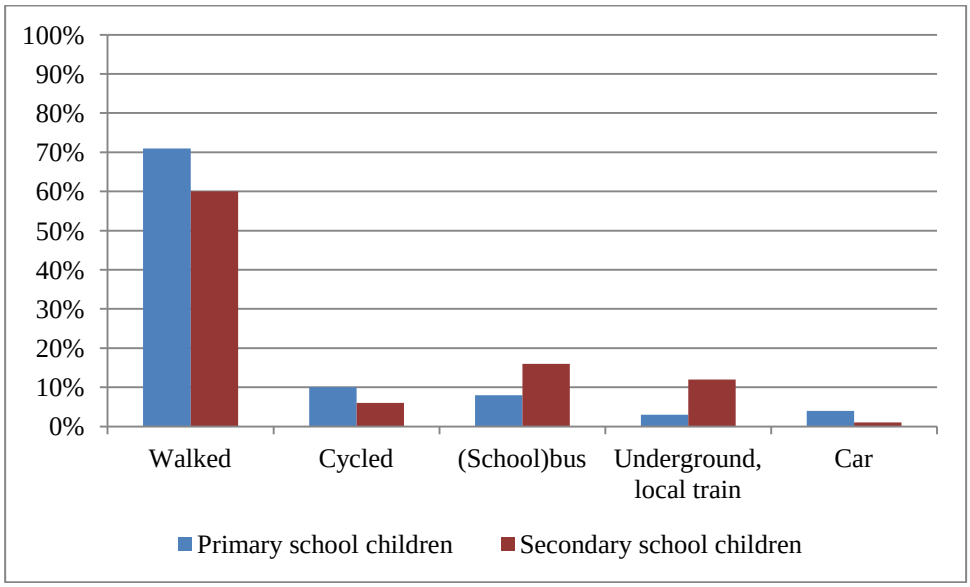

Figure 12a Unaccompanied mode of transport to school

The children could select several alternatives. Therefore some stated, for example, that they travel to school by car both alone and with an adult.

Most of the children who travel to school on their own walk there. More older than younger children travel alone, on the (school) bus or by public transport.

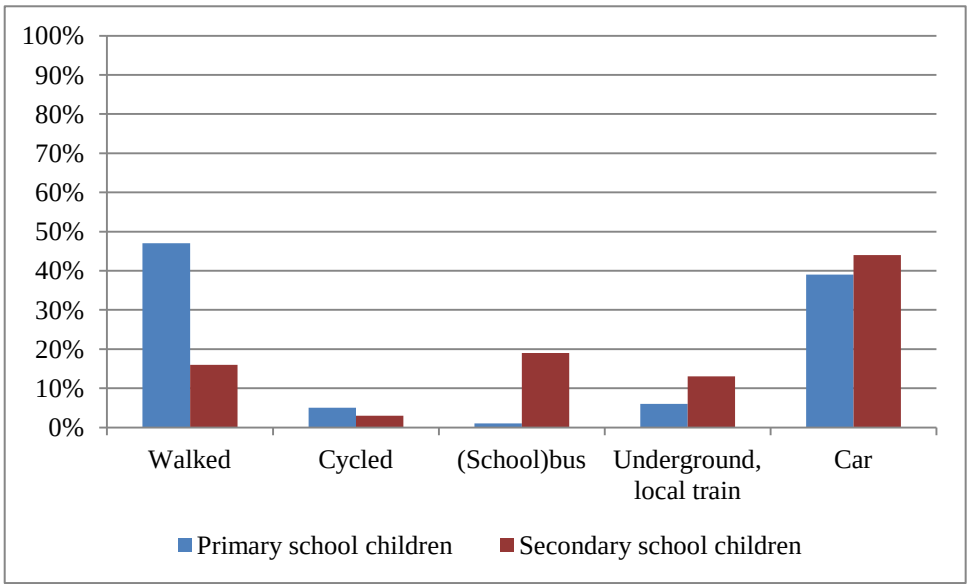

Figure 12b Mode of transport with adult accompaniment to school

As shown in figure 11, few older children are accompanied to school by an adult. The older children usually travel by car when they are accompanied by an adult. Almost half the younger children walk to school accompanied by an adult and around 40 per cent go by car.

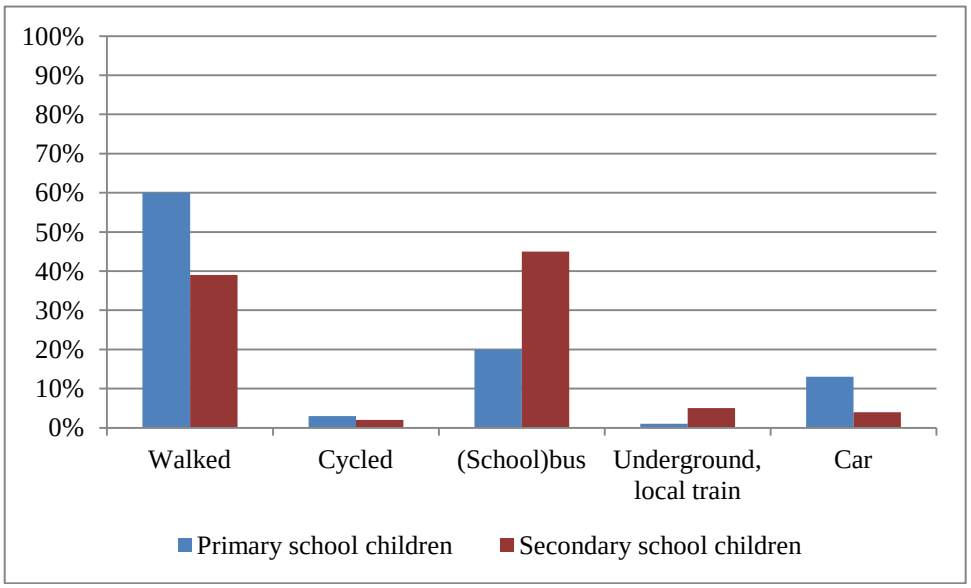

Figure 12c Mode of transport with other children accompanying child to school

When accompanied by other children, it is most common for children to walk to school or – particularly for the older children – to take the (school) bus.

In *summary*, most children walk to school alone or with a friend. More younger than older children are accompanied by other children and/or an adult, whereas more older children walk to school on their own. When they are accompanied by an adult, the younger children usually walk to school with a parent or go by car, while the older children go by car or public transport.

Length of journey to school

How long does the journey to school take?

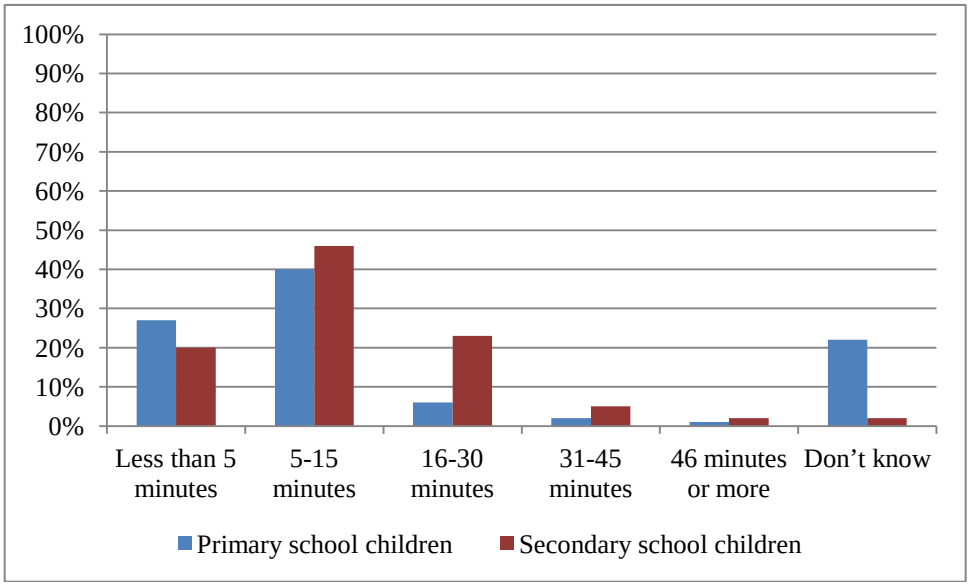

Figure 13 Journey time to school according to the children

Two-thirds of the children have less than a 15-minute journey to school, according to the children themselves. The older children gave a longer journey time. But more than one in five primary school children could not say how long it took them to get to school.

How long does it take to get to school by different modes of transport, according to the parents? Whereas the children had fixed responses to select from, the parents were able to give the time in minutes. Most parents chose 5, 10, 20 or 30 minutes, which is why the distribution here for adults differs from that for children. They could also give several alternatives. But this does not necessarily mean that the children used that particular mode of transport to school.

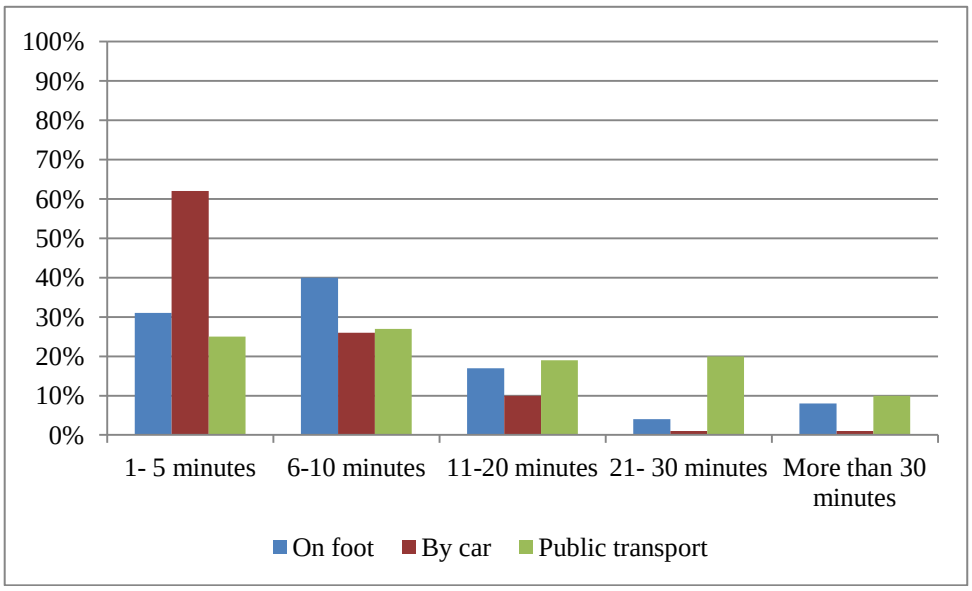

Figure 14a Journey time to school by different modes of transport, according to the parents

Almost a third of parents stated that one could walk to the school in five minutes or less; 70 per cent said it takes up to ten minutes and 10 per cent more than twenty minutes. Few parents need to drive for more than twenty minutes. By public transport, correspondingly, almost a third of parents say it takes more than twenty minutes, but half say ten minutes or less.

How long did it take to come to school ”this morning” by different modes of transport, according to the children themselves?

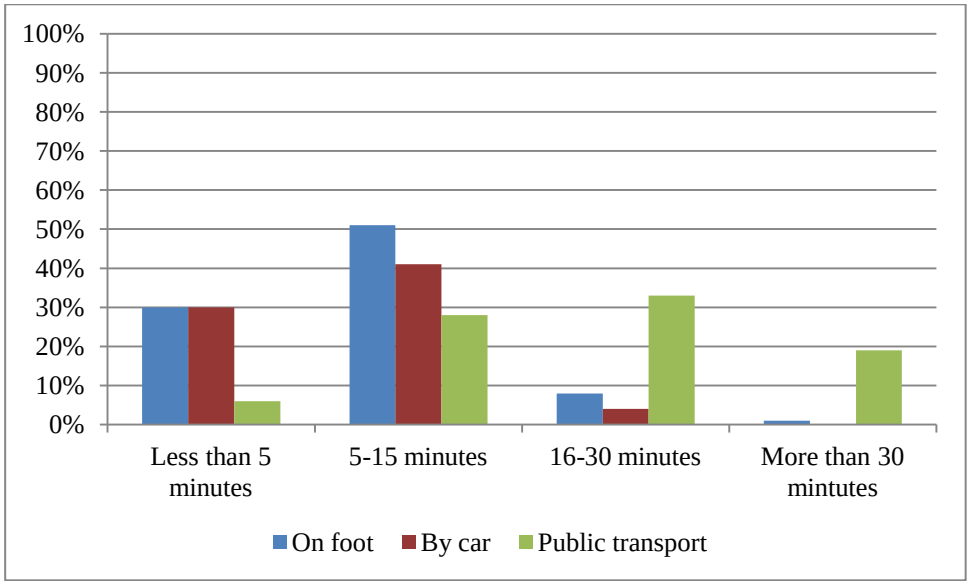

Figure 14b Journey time to school by different modes of transport, according to the children

For most of the children who walk to school, it takes a maximum of 15 minutes (81 per cent). The same is true of children who go by car (71 per cent), according to the children themselves. Two-thirds of the children get to school within 15 minutes. Among those who took the (school) bus or other public transport, half of them stated that it takes more than 15 minutes and one in five that it takes more than half an hour. More than one in ten children, however, could not state how long it took. This was especially the case among those who cycled and travelled by car, where a quarter of children did not know how long it took them to come to school ”today”.

As shown in Table 11 above, around half the children walked to school “today”, nearly one in five took the (school) bus, and one in ten went by car. A few children used other public transport or cycled to school.

How long did it take for the children to get to school in the different areas?

Table 14a Children's estimates of the journey time to school by foot in the different areas

	School					
How long did it take you to travel to school this morning?	Maria n=140	Sjöstad n=93	Sjöäng n=83	Bredäng n=97	Fjärdhundra n=28	Total N=441
Less than 5 minutes	24%	39%	16%	37%	57%	30%
5-15 minutes	59%	46%	43%	53%	36%	51%
16-30 minutes	9%	8%	18%	1%	0%	8%
31-45 minutes	1%	0%	0%	0%	0%	0%
More than 45 minutes	1%	0%	0%	0%	0%	0%
Don’t know	6%	8%	18%	8%	7%	9%

We see that the journey time varies among the different schools when children walk to school. More than half of the few children (20 per cent) who walk to *Fjärdhundra* School arrive there within five minutes, while significantly fewer do so in *Sjööäng* School – an area that is more spread out. For nearly one in five of these children (18 per cent) it takes more than a quarter of an hour to walk to school.

What was the journey time to school for the children who travel by car or public transport?

Table 14b Children's estimates of the journey time to school by car or public transport in the different areas

	School					
How long did it take you to travel to school this morning?	Maria n=48	Sjöstad n=41	Sjöäng n=60	Bredäng n=22	Fjärdhundra n=102	Total N=273
Less than 5 minutes	8%	27%	10%	18%	11%	13%
5-15 minutes	52%	20%	27%	41%	29%	32%
16-30 minutes	27%	29%	28%	9%	21%	24%
31-45 minutes	6%	10%	3%	5%	14%	9%
More than 45 minutes	2%	2%	8%	5%	4%	4%
Don’t know	4%	10%	22%	18%	20%	16%

Going to school by car or public transport takes longer. Significantly more children are unable to say how long it takes – almost one in five answered ”don't know” or failed to give an answer at all. For more than a third of the children it takes longer than a quarter of an hour to get to school. The longest journey times were for the children in *Fjärdhundra* School.

Have the parents chosen a different school to the one they were assigned?

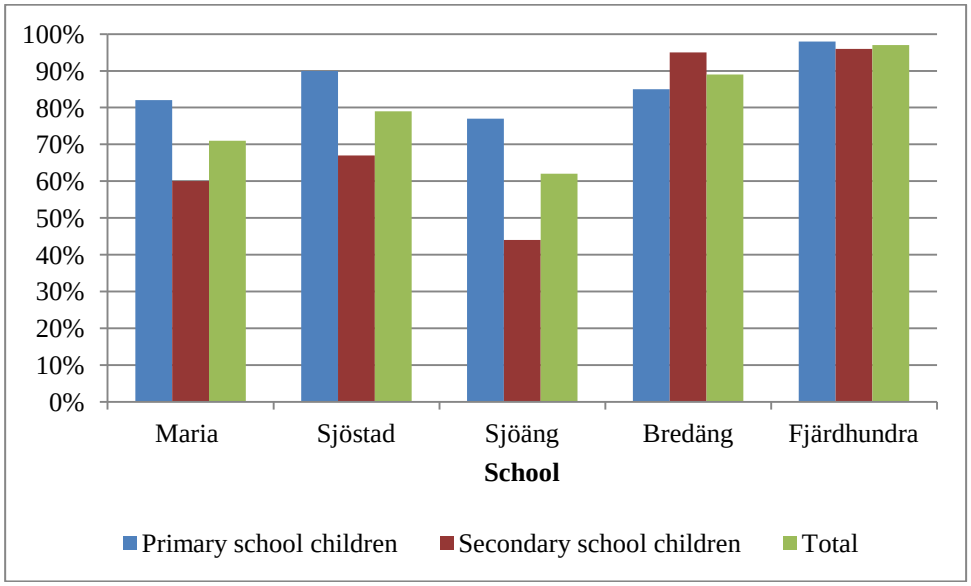

Figure 15 The assigned school

Most parents chose the school in the local authority area within which the children's residence was located. It was principally the older children's parents who opted for another school.

The parents' choice of school varies among the different schools. Only 3 per cent of parents with children in *Fjärdhundra* School chose this school in preference to the assigned school, compared with 11 per cent of parents in *Bredäng*. However, nearly 40 per cent of the children from *Sjööäng* School go to a school other than the one they were assigned. The figure for children in *Sjöstad* School is around 20 per cent and for children in the inner-city area of *Maria* School almost 30 per cent.

The reasons given by most parents for choosing their current school were that they prefer this school, it has a particular profile or better quality of education, it lies near other amenities or the children weren't happy in their old school.

Are there any differences in the modes of transport used by children who go to the school assigned to them, compared to other children?

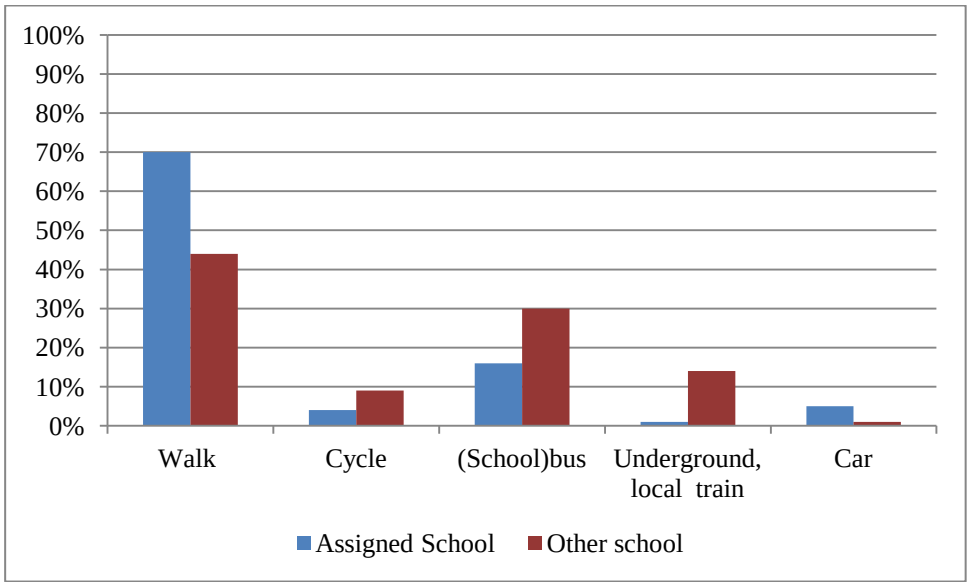

Figure 16 The usual mode of transport to school and choice of school

A greater number of children who attend the assigned school walk there, according to parents – around 70 per cent compared to 45 per cent of those whose parents chose another school. Cycling, and travelling by public transport, are more common among children who do not attend the assigned school but are not driven there by car.

In *summary*, the children who can walk or go by car have the shortest journey time – not more than 15 minutes – while those who take the (school) bus or other public transport spend longer getting to school. The journey time varies for the children in the different areas in such a way that the rural children in *Fjärdhundra* have the longest journey time since they most often take the (school) bus to and from school. Around 20 per cent of the parents chose a different school to the one they were assigned. The reasons for this are primarily that they want the child to attend that particular school, it has a certain profile or it is situated close to other amenities. The mode of transport for those children whose parents chose a different school varies insofar as fewer of these children walk to school and more use public transport, resulting in a longer journey time.

Non-school travel and activities

This section describes the children's activities outside school. What do they do at weekends? Are they accompanied by parents to friends and other activities? If so, what mode of transport do they use? How long do they spend in front of the computer and TV?

Weekend activities

What activities did the children participate in during the weekend? Did they meet friends or adults?

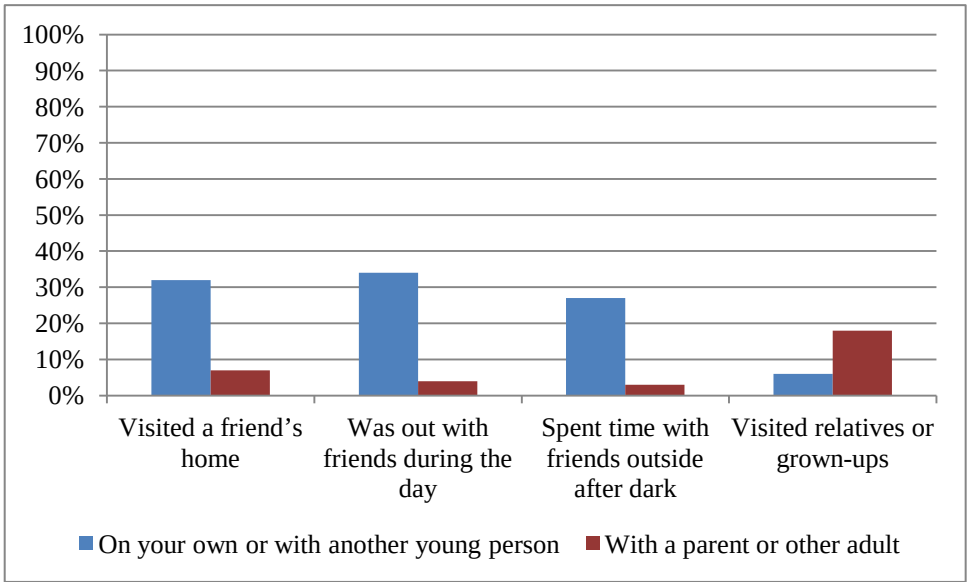

Figure 17a Range and breadth of weekend activities

The most common activity is meeting friends, either indoors or outdoors, even when it is dark. This usually takes place without the company of a parent. A smaller number of children visit relatives or other grown-ups on their own, with nearly one in five doing so in the company of a parent or other adult.

What do the children do?

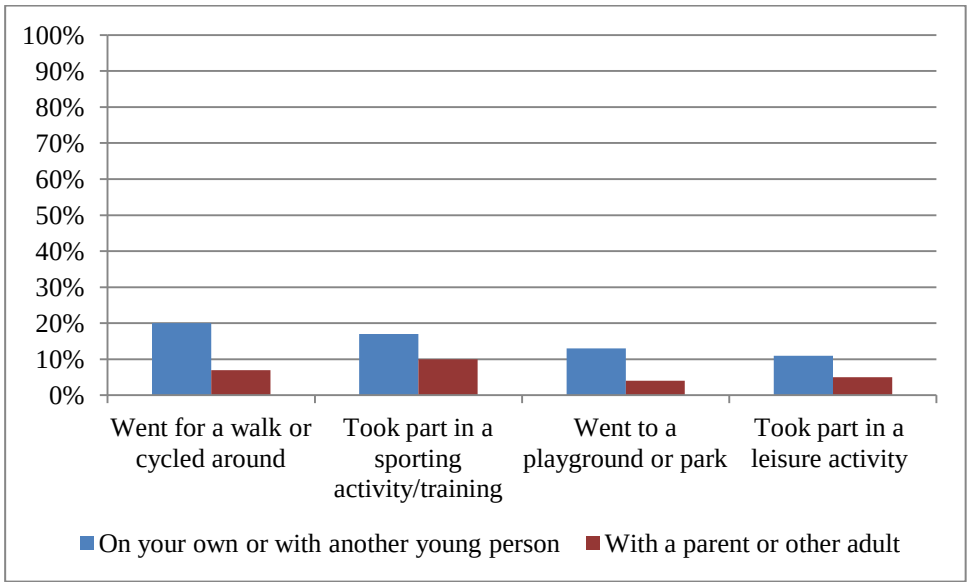

Figure 17b Range and breadth of weekend activities

One in five children walk or cycle around. A smaller number go to a play area or take part in a sporting or leisure activity. Fewer still do so together with a parent.

What else do children do during the weekend?

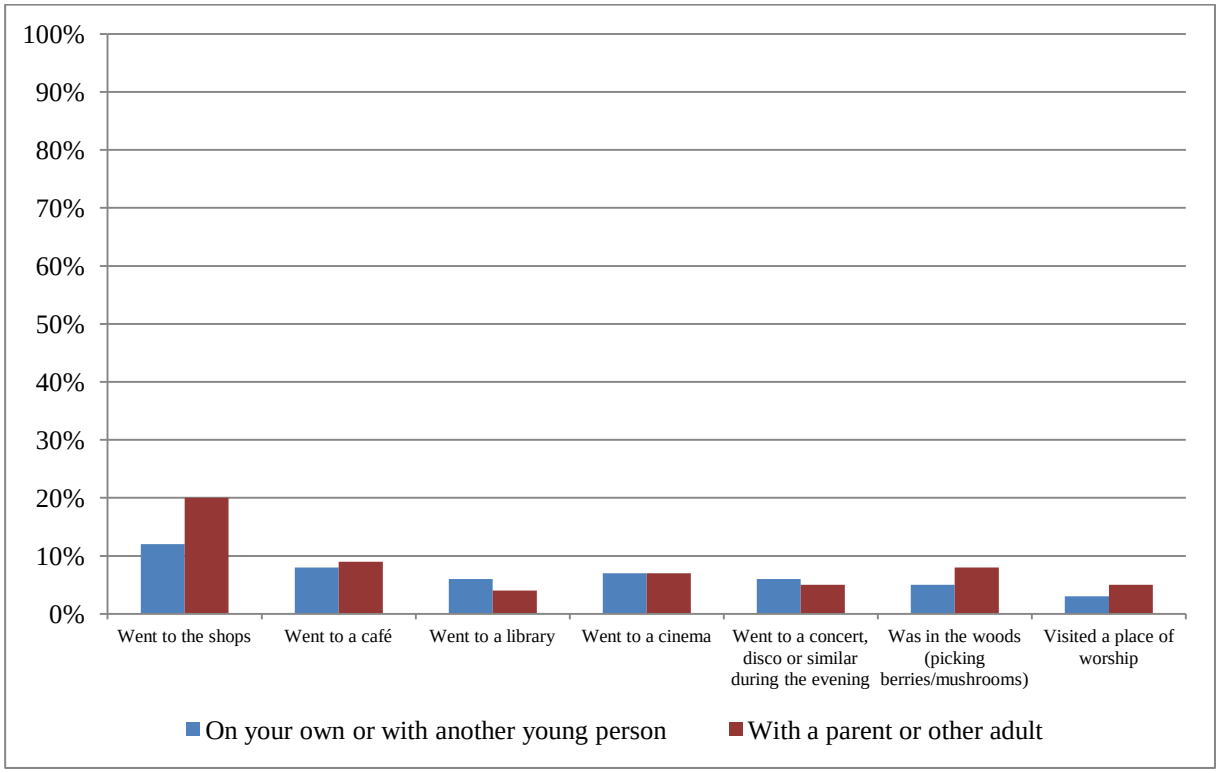

Figure 17c Range and breadth of weekend activities

A common activity is shopping – one in five children does this with their parents. It is equally common for them to visit a café, cinema or concert on their own as it is with a parent –

though fewer children do this. A smaller number went to the woods or to church, which they also did with a parent.

Travel to a destination other than school and parental accompaniment

Did the parents accompany their children to other activities? Parents were asked: ”What is the approximate number of round trips made each week to accompany your child, excluding the journey to school?”

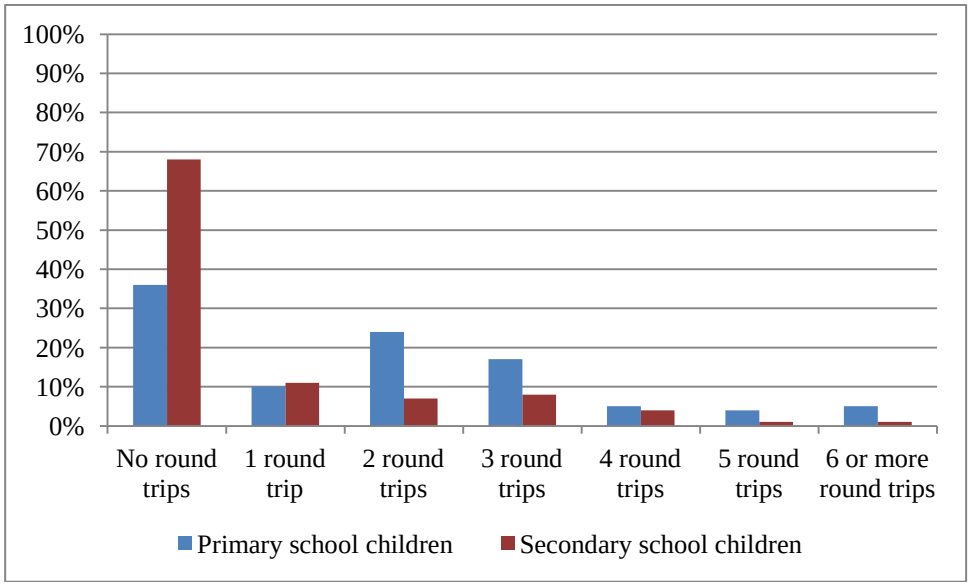

Figure 18 Number of journeys

Around half the children were never accompanied to activities by an adult. But there is a difference between older and younger children – only around a third of the younger children were unaccompanied, compared to around two-thirds of the older children. On average children are accompanied on three round trips a week.

Are the children accompanied by parents to places within walking distance other than school?

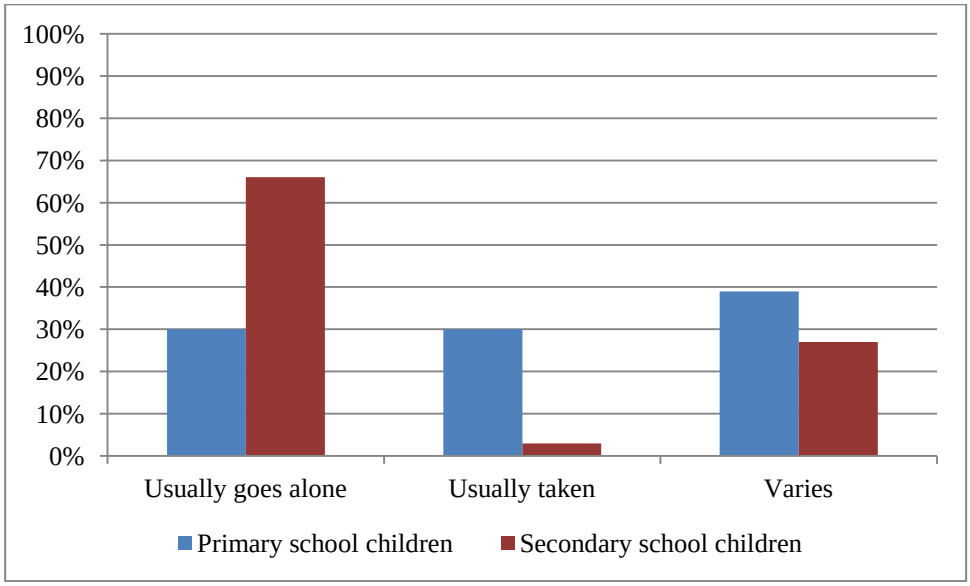

Figure 19 Accompaniment to places other than school

It is mainly the older children who walk to places within walking distance without an adult. But a majority of the younger children (around 70 per cent) are not always accompanied.

Which mode of transport do the parents use when they accompany their children to places other than school? How does this vary among the different areas?

Table 15 Mode of transport when parents accompany their child to places other than school

School						
Mode of transport	Maria n=62	Sjöstad n=37	Sjööng n=48	Bredäng n=23	Fjärdhundra n=38	Total N=208
Walk	76%	59%	44%	100%	37%	62%
Cycle	6%	41%	19%	17%	24%	20%
Local bus	52%	16%	35%	9%	16%	30%
Underground or train	40%	54%	21%	52%	3%	33%
Car	52%	65%	100%	35%	100%	75%

The parents could give several alternatives here.

The most common mode of transport used by parents when they accompany their children to places other than school is by car. This is the case in all the areas except the traffic-separated suburb *Bredäng*. This may be because there is a shopping centre in this area as well as a larger shopping centre and other amenities close by, which can easily be reached via the underground. The parents in Bredäng are also those with least access to a car. In the inner-city area *Maria* the parents are not at all car-dependent and the same is true of the new-build area *Sjöstad*. Of course, the reason why parents drive their children has much to do with the accessibility of public transport. In rural Fjärdhundra, and in suburban *Sjööng*, public transport is not easily accessible and car-dependency is correspondingly higher. As a result the parents there rely on car use more than on public transport.

TV and computer use

How long per day do children spend in front of the computer or TV?

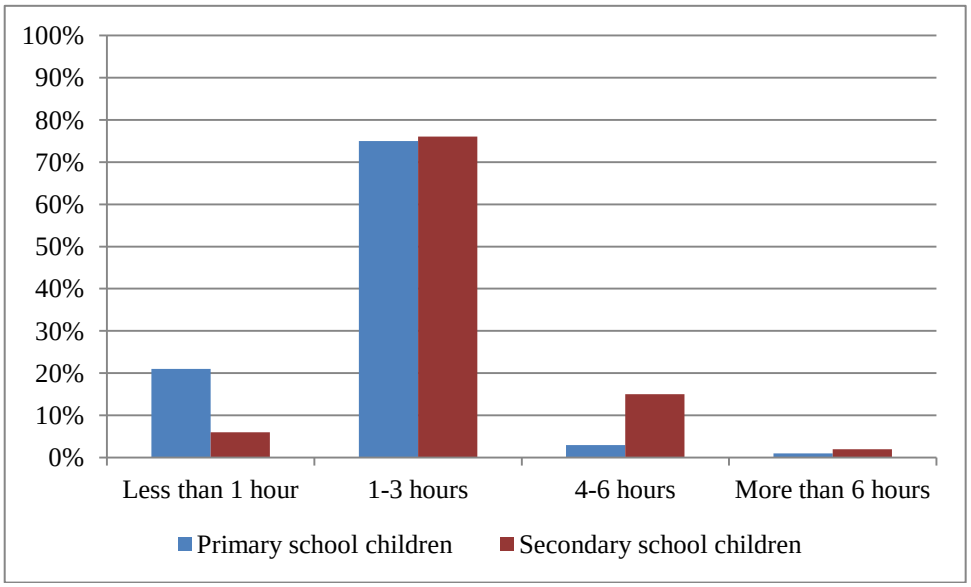

Figure 20a Time spent at the computer or TV according to the parents

According to parents, three out of every four children spend 1-3 hours per day in front of the computer or TV, older children spending longer than younger children.

What did the children themselves say?

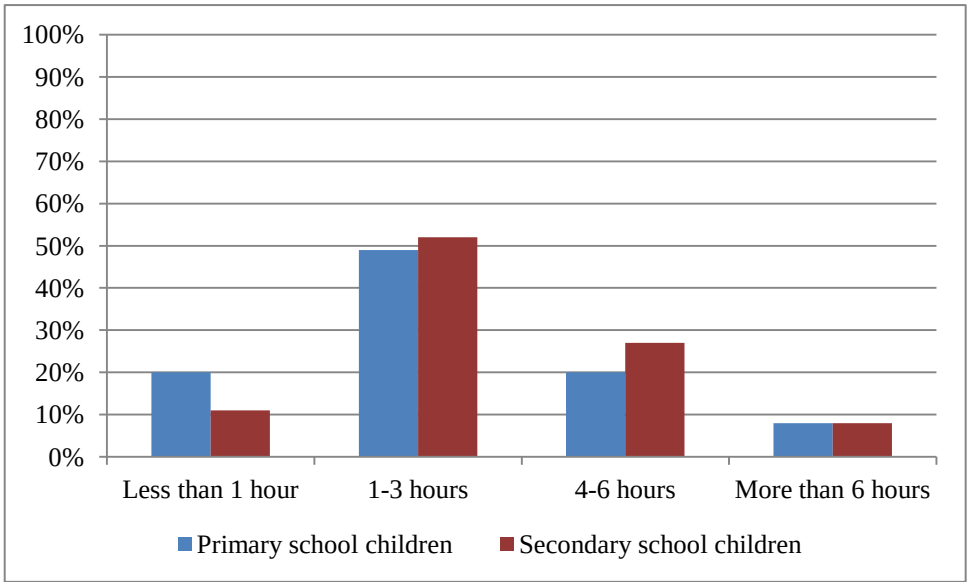

Figure 20b Time spent at the computer or TV according to the children

According to the children themselves, they spend more time at the computer or TV than their parents think. This is particularly the case for those children who spend a lot of time at the computer or TV. More than a third of children spend over three hours a day at the computer or TV – and more so for older children than younger children. According to the children's responses, almost one in ten spends more than 6 hours a day at the computer or TV.

In *summary*; at weekends children spend time with friends either indoors or outdoors, without an adult. Older children in particular spend a lot of time indoors in front of the computer or TV. The majority of children are accompanied by an adult when they go to the shops, visit relations or other adults, or go to a café or church or the woods. Half the children are not accompanied by an adult when they visit friends or go to other activities. The rest of the children are accompanied by an adult on approximately three round trips a week. Thirty per cent of primary school children are usually accompanied by an adult to places within walking distance, compared to just a few per cent of secondary school children. But this figure varies for a third of all children. Most children (75per cent) are driven to other activities. However, this depends on where they live. The children in inner-city *Maria* and *Sjöstad* are driven less, while those in suburban *Sjööng* and rural *Fjärdhundra* are driven the most. The numbers are lower in the traffic-separated suburb *Bredäng*.

Perception of safety and local area

This section discusses children's and parents' safety in their local neighbourhood. Are there any differences between younger and older children, between boys and girls and between children in the different schools? What causes anxiety in the children? What worries the parents? Why do parents collect their children from school? Do the parents feel more secure when their children have mobile phones?

Children's safety and anxiety in their own neighbourhood

How safe do children feel in their own neighbourhood?

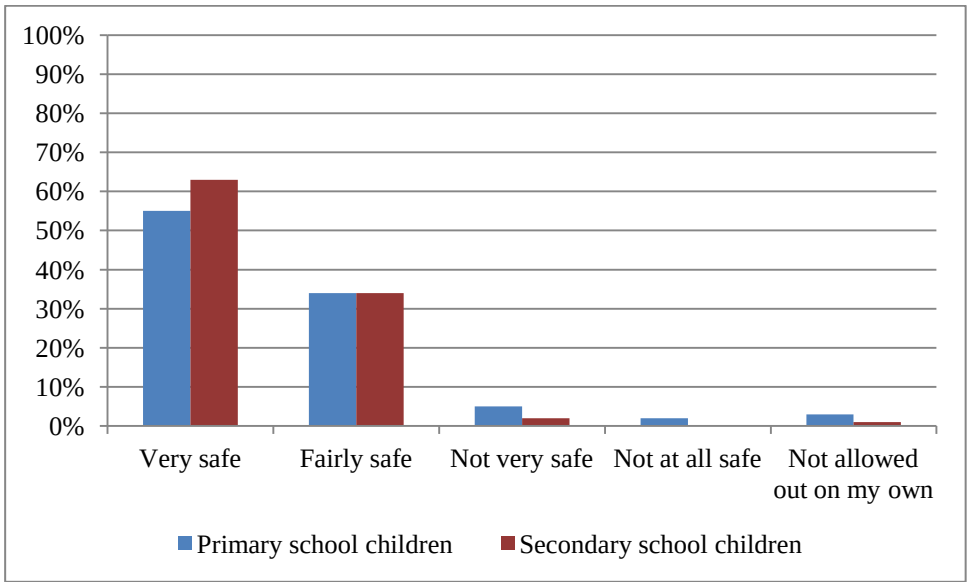

Figure 21 Children's safety in their local neighbourhood

Most children feel either very safe or fairly safe when they are outdoors in their own neighbourhood without an adult – a slightly smaller number among the younger children. A few feel unsafe and a few state that they are not allowed out on their own.

How did this vary among the different areas?

Table 16 Children's safety in the different areas

	School					
How safe do you feel on your own in your local neighbourhood?	Maria n=194	Sjöstad n=160	Sjööng n=178	Bredäng n=125	Fjärdhundra n=140	Total N=797
Very safe	50%	68%	58%	53%	66%	59%
Fairly safe	41%	27%	33%	38%	29%	34%
Not very safe	4%	2%	4%	6%	1%	3%
Not at all safe	1%	1%	1%	0%	1%	1%
Not allowed out on my own	3%	2%	1%	4%	1%	2%
Missing data	1%	1%	3%	0%	1%	2%

Two-thirds of children in the new-build inner-city area around *Sjöstad* School and the rural area around *Fjärdhundra* School feel very safe, compared to roughly half the children in the inner-city area around *Maria* School and the multi-ethnic suburb *Bredäng*.

How does this vary between younger and older children?

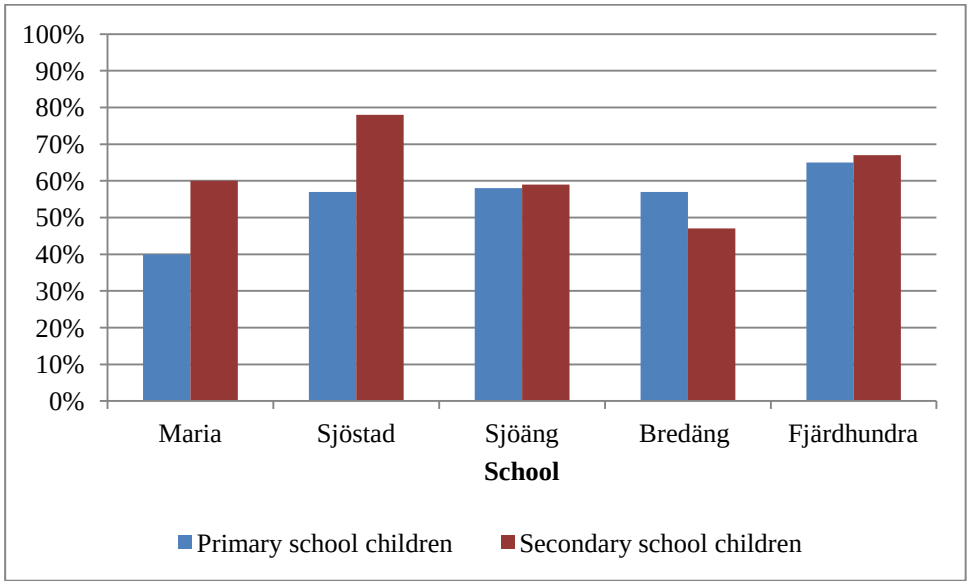

Figure 22 Children who feel very safe in their local neighbourhood

A greater number of older than younger children feel very safe when they are outdoors in their own neighbourhood alone. The differences are greatest in the inner-city area *Maria* and the new-build area around *Sjöstad* School. There is also a difference between younger and older children in *Bredäng* School, where more younger children chose ”very safe” compared with older children.

Are there any differences between girls and boys?

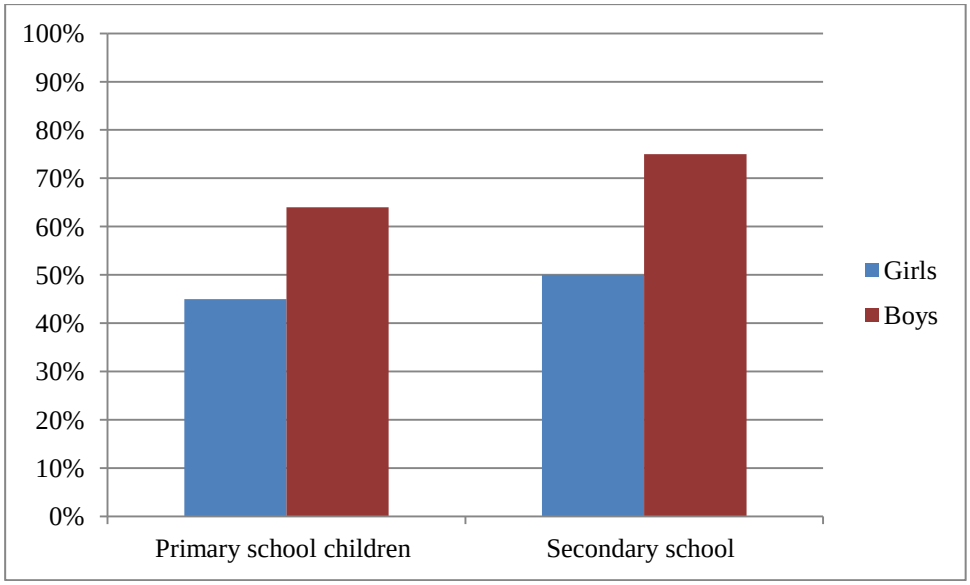

Figure 23 Girls compared to boys who feel very safe in their local neighbourhood

Boys feel safer than girls in their own neighbourhood. Similarly, older children say they feel safer than younger children.

What are children worried about when they are outdoors on their own or with friends?

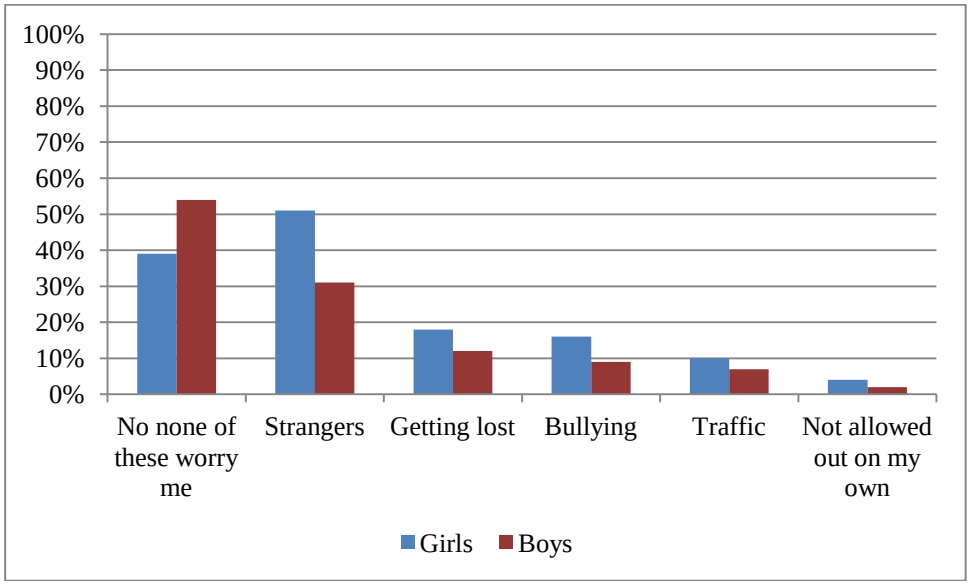

Figure 24a Anxiety among children

The children could choose several alternatives here.

When children are outdoors on their own it is mainly strangers they worry about. Traffic worries significantly fewer children. However, more than half the children are not worried at all. Younger children are more worried than older children.

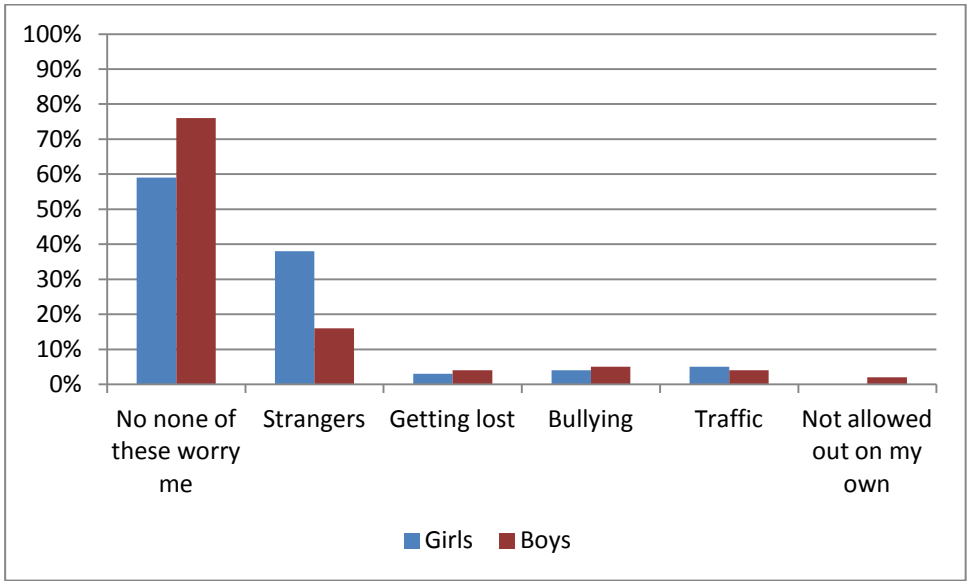

Figure 24b Anxiety among girls and boys of primary school children

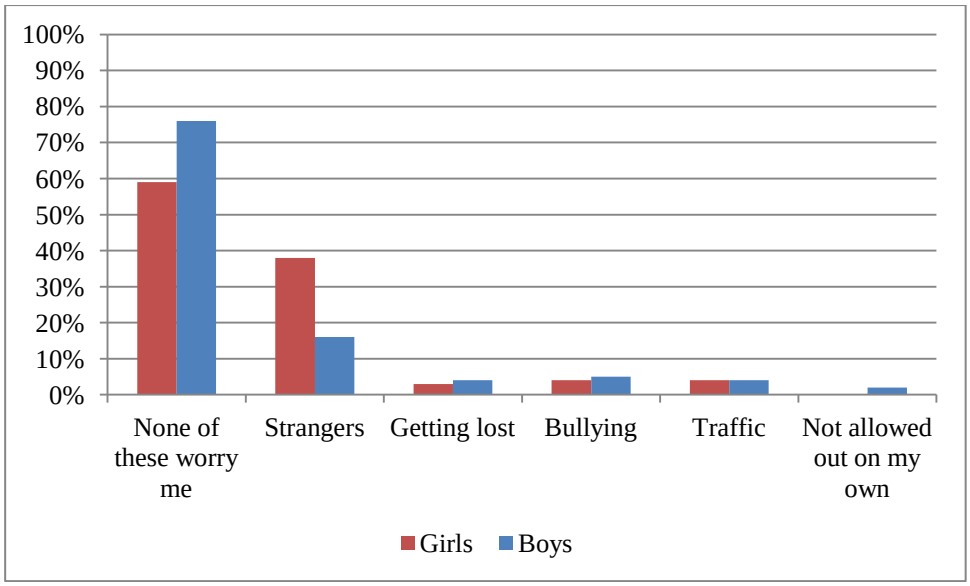

Figure 24c Anxiety among girls and boys of secondary school age

Boys are less worried than girls. Three-quarters of the older boys and half the younger boys are not worried by these things at all. The greatest cause of anxiety is strangers, more so among girls than boys. The younger girls are more worried about getting lost, bullying and traffic than the younger boys. These are things that few older children, girls or boys, are worried about.

What worried the children in the different areas?

Table 17 Anxiety among children from the different schools

	School					
When you are outside on your own or with friends are you worried by any of the following?	Maria n=194	Sjöstad n=160	Sjöäng n=178	Bredäng n=125	Fjärdhundra n=140	Total N=797
No, none of these worry me	52%	66%	58%	44%	63%	57%
Strangers	41%	27%	31%	44%	24%	33%
Getting lost	10%	8%	8%	10%	9%	9%
Bullying	8%	6%	10%	11%	6%	8%
Traffic	8%	6%	5%	4%	9%	7%
Not allowed out on my own	2%	1%	2%	4%	0%	2%

There are no significant differences between the different areas other than between children from *Bredäng* and *Maria*. More children in these two areas are worried about strangers. Traffic is a cause of significantly less worry, particularly in the traffic-separated suburb *Bredäng*. When asked about other things that worry them, around one in five gave a response – most among the children from *Bredäng* School and the inner-city school *Maria* and least among the children in rural *Fjärdhundra*. The most common items things mentioned concerned such things as paedophiles, rapists, murderers and winos.

Parents' anxiety about safety issues

Are the parents worried that an accident might happen when their children cross a busy road?

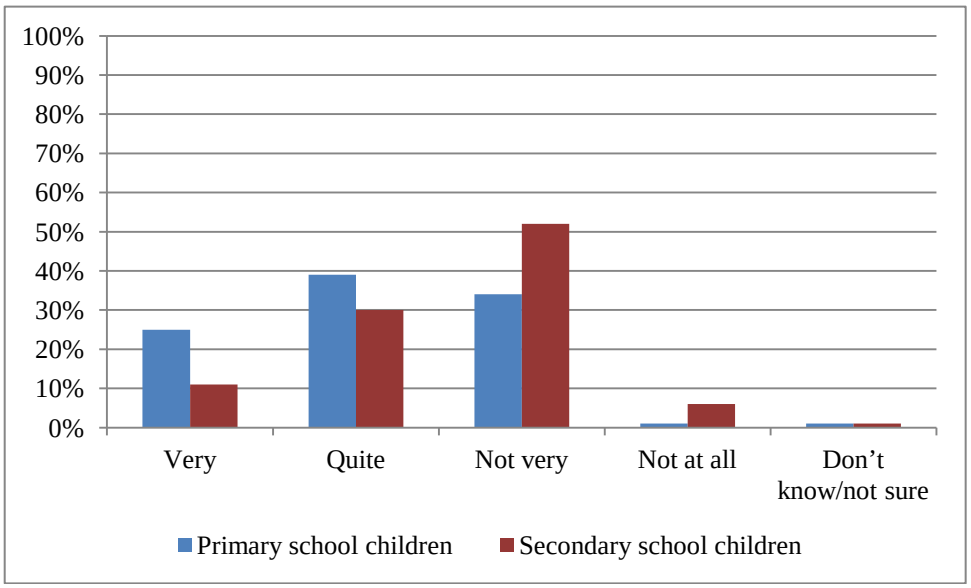

Figure 25 Parents' anxiety when children cross a busy road

Nearly one in five parents is very worried that their child might have an accident when crossing a busy road. Parents of younger children are more worried than parents of older children. A quarter of parents with primary school children are very worried and nearly 40 per cent quite worried. Few parents are not worried at all.

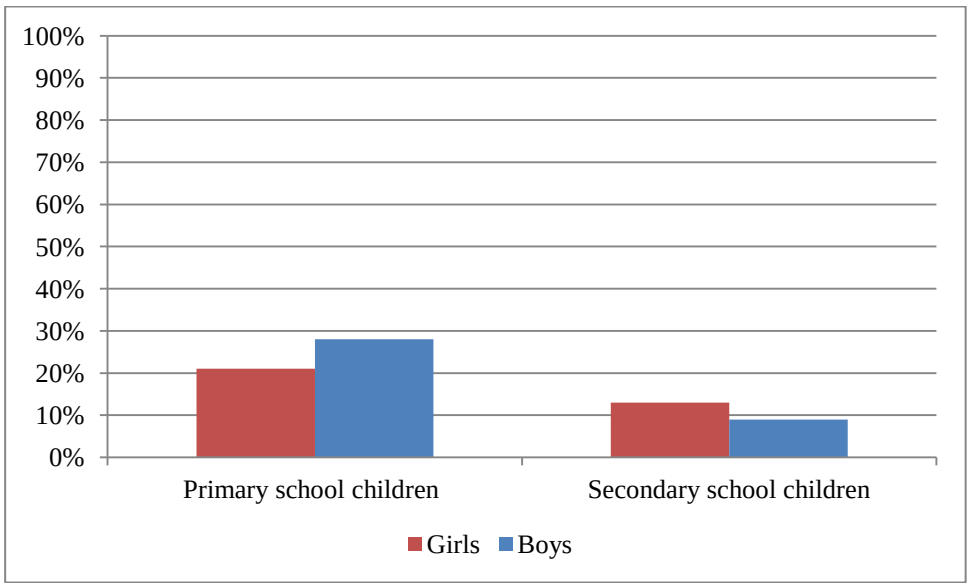

Figure 26 Parents of girls and boys who are very worried that their child might be injured in an accident when crossing a busy road

Overall parents of girls and boys are equally worried that their child might be injured in an accident when crossing a busy road. But whereas more parents of younger boys say they are very worried, more parents of older girls say the same thing.

Does the parents' anxiety vary among the different areas?

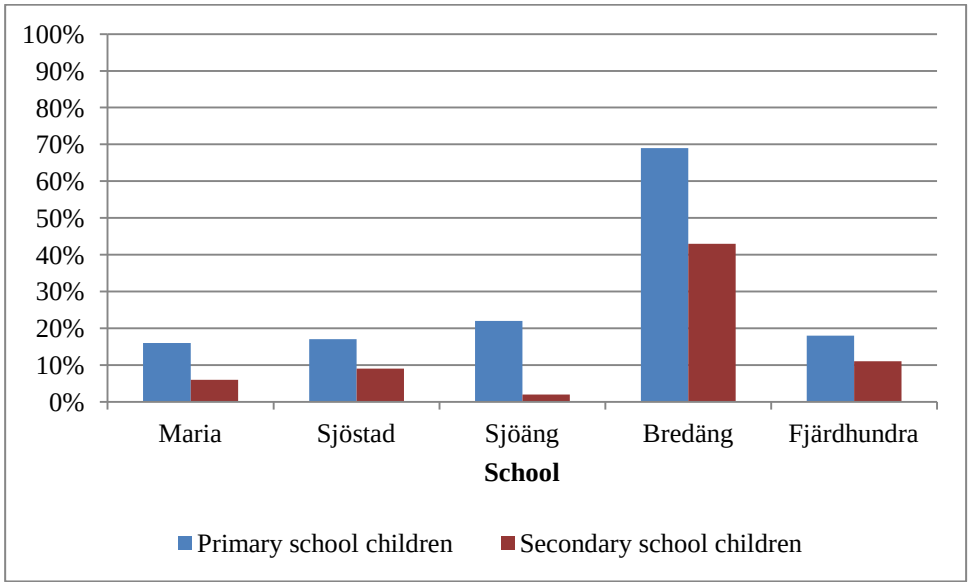

Figure 27 Parents in the different areas who are very worried when their child crosses a busy road

The greatest number of very anxious parents is in the traffic-separated and multi-ethnic area *Bredäng*. One reason for this may be that the roads the children cross are used by heavy traffic. Slightly surprising is the fact that the parents of children in the inner-city area *Maria* are no more worried than other parents.

Parents of children of older school age are less worried than parents of younger schoolchildren. But few parents are not worried at all. The parents in *Bredäng*, even those with older children, are significantly more worried than other parents about their children crossing busy roads.

What are the reasons for collecting children from school?

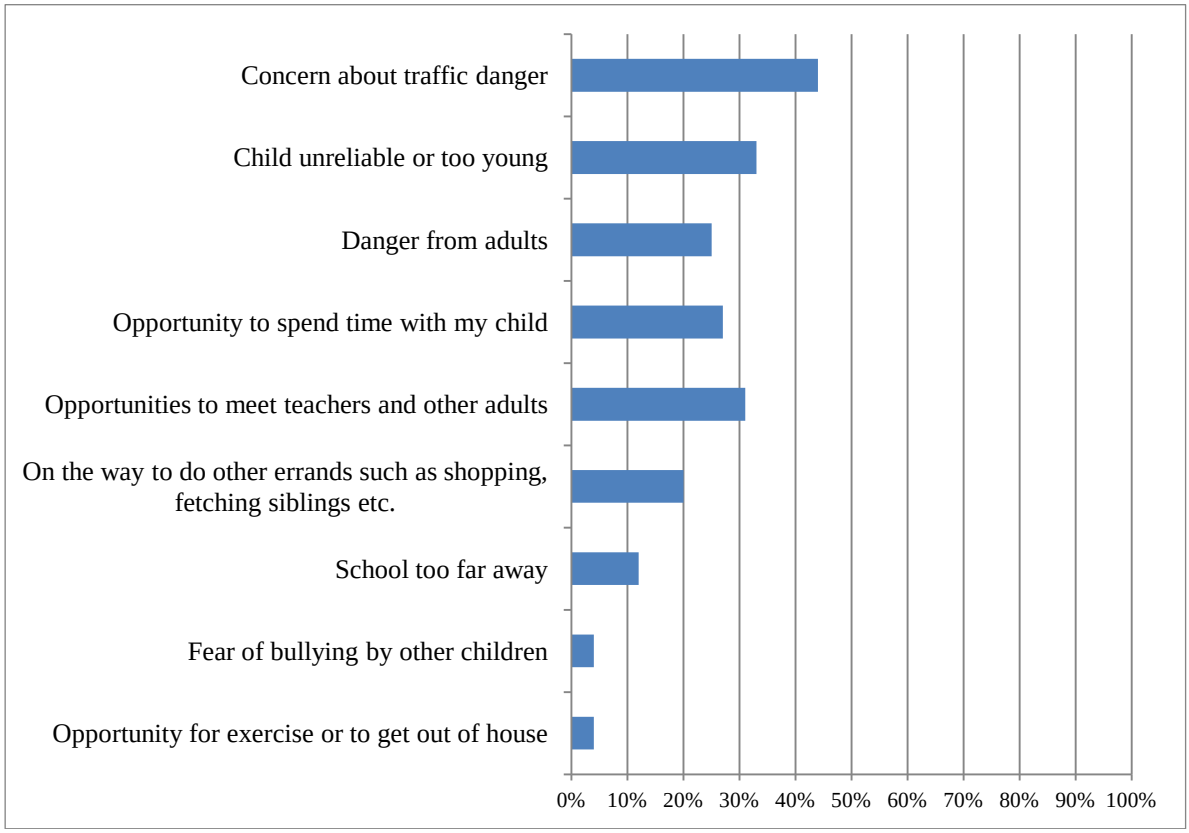

Figure 28a Reasons for collecting children from school

The parents were asked to mark the three highest alternatives on this question. They were also asked to give the reasons they have now or the reasons they had at the time when they collected their children.

The most common reason was anxiety about traffic. Around one in three parents also considered that their child was too young or unpredictable in traffic. Around a quarter of parents are worried about the danger from adults. Thirty per cent say they collect their child in order to spend more time with them, or do it to meet teachers and other parents. Only one in ten parents says the reason is that the school is situated too far away. Few parents chose the alternative ”opportunity for exercise or to get out of house”. Other reasons given by parents were that the weather was bad or their children were going to leisure activities. There is no difference between parents of primary and secondary school children.

What were the responses from parents in the different areas?

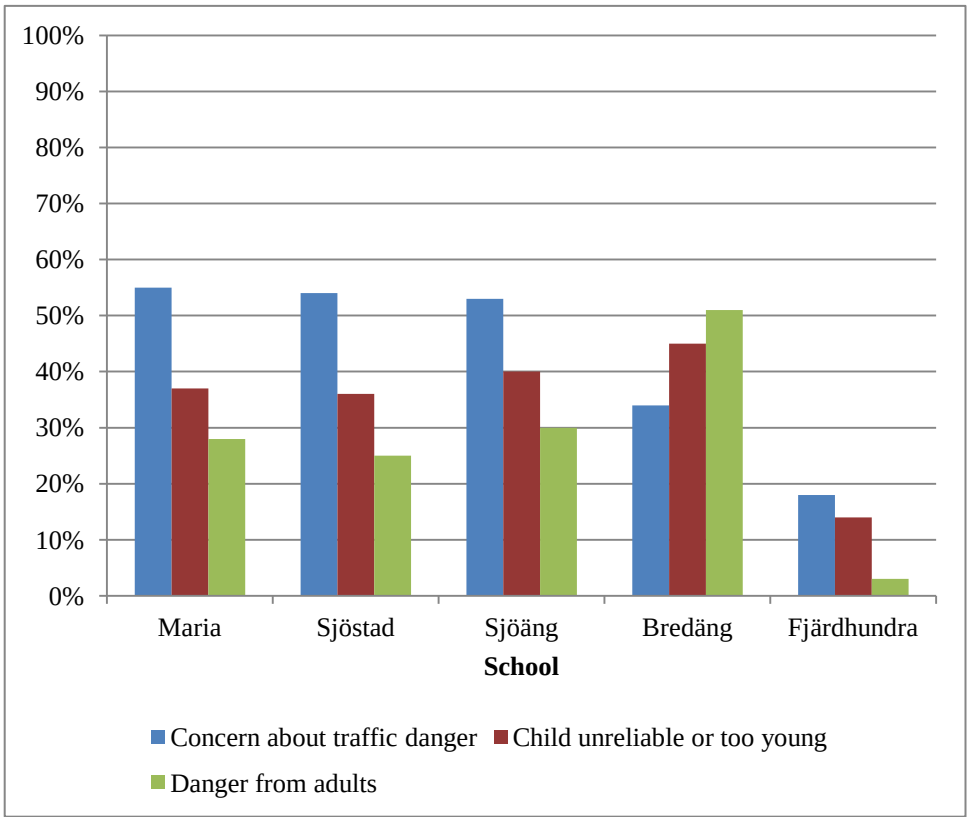

Figure 28b Main reason for collecting children in the different areas

The main reason given by parents for collecting their children is anxiety about traffic – this is the case in all the areas except for traffic-separated *Bredäng*, which suggests that the road to school there is safe. Even fewer parents gave this as the reason in rural *Fjärdhundra*, perhaps because many children there travel to school by (school) bus. Half the parents in *Bredäng* are worried about the danger from adults and that their child is too young..

Parents were asked to answer two questions relating to personal safety in their area.

Table 18 Personal safety in the different areas

	School					
Agree wholly or partly that	Maria n=108	Sjöstad n=84	Sjööng n=93	Bredäng n=47	Fjärdhundra n=87	Total N=419
...most adults who live in the neighbourhood look out for other people's children in the area	39%	46%	54%	49%	70%	51%
Disagree wholly or partly that						
…some young people and adults in the area make you afraid to let your children play outdoors	45%	61%	55%	19%	71%	53%

Around half the parents agree that most adults who live in the neighbourhood look out for other people's children in the area and *disagree* that some young people and adults in the area make you afraid to let your children play outdoors. But there is considerable variation between the areas. Parents in *Bredäng* gave the most negative responses and around one in

five of them chose not to answer the question. Similarly in the inner-city area around *Maria* School fewer parents than average reported a sense of personal safety in their neighbourhood. The greatest sense of personal safety was felt by the parents in rural *Fjärdhundra*.

Parents were asked whether they felt more confident about allowing their children out on their own if the child had a mobile phone. Is there a difference between parents of younger and older children?

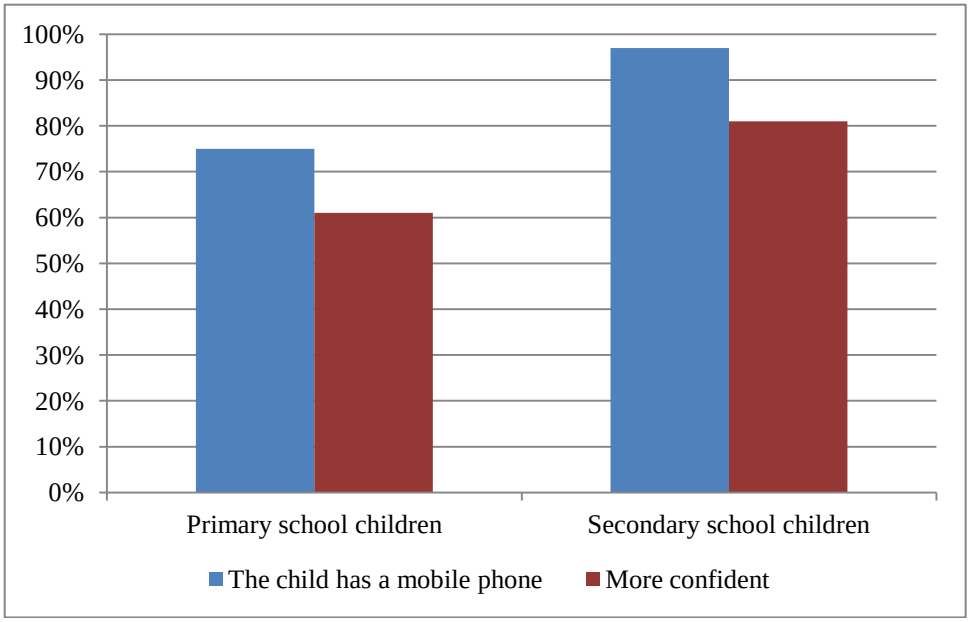

Figure 29 **Parents' confidence about allowing their child to be outdoors when they have a mobile phone**

Three-quarters of the younger children and almost all of the older children had a mobile phone. Knowing the child has a mobile phone is a confidence-building factor for the parents.

In *summary*, most children feel safe when they are alone outdoors in their own neighbourhood and boys feel safer than girls. Similarly, older children say they feel safer than younger children.

Boys are less worried than girls when outdoors on their own. Three-quarters of the older boys and half the younger boys are not worried at all. The greatest cause of anxiety is strangers, more so among girls than boys. The younger girls are more worried about getting lost, bullying and traffic compared with younger boys. These are things that few older children, girls or boys, are worried about.

The children are not worried about traffic but a third of them are worried about strangers. Anxiety about this is greatest in *Bredäng* and the inner-city area around *Maria* School. More than half of parents are worried about their children crossing busy roads – this figure rises to two-thirds among parents of primary school children. But whereas more parents of younger boys say they are very worried, more parents of older girls say the same thing. The parents in *Bredäng* are significantly more worried than other parents. For all parents, the reasons for collecting their children from school are principally traffic danger or that their child is unreliable or too young. In *Bredäng* almost half the parents give their reason as danger from

other adults and few parents in this neighbourhood have a sense of personal safety. Most children have a mobile phone – a confidence-building factor for the parents.

The influence of different factors on independent mobility

Children's independent mobility is affected by a number of factors. Below we discuss age- and gender-related factors, the parents' car ownership and socio-economic factors, along with the characteristics of the different neighbourhoods.

The impact of age

How are children of different ages affected by parental licences? How did the parents respond and what is the children's understanding?

Were the children collected from school or were they allowed to walk home alone and, if so, at what age?

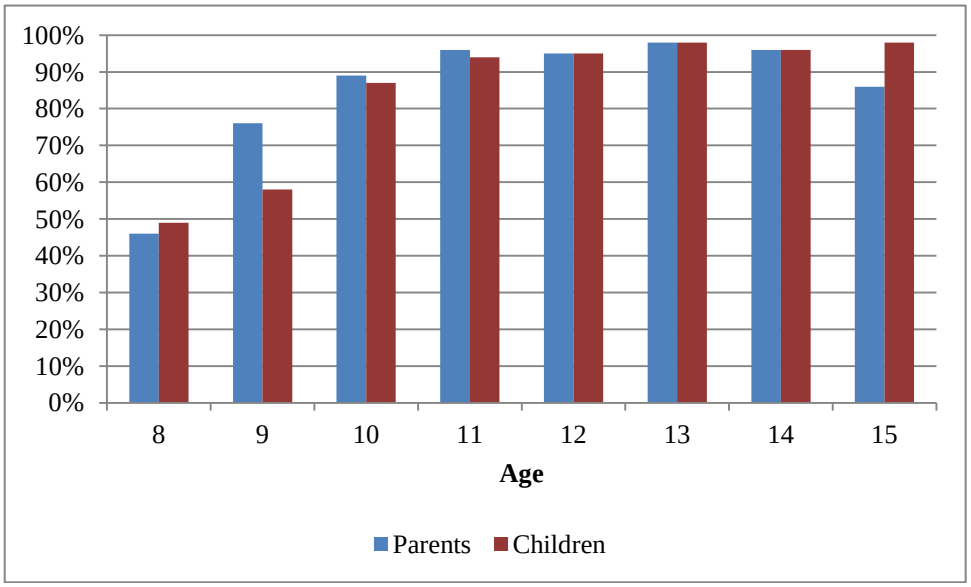

Figure 30 Licence to travel home from school alone at different ages

Overall there is a close correspondence between the children's and the parents' responses. Parents of 9-year-olds underestimate the children's own answers with regard to how they will go home from school ”today.” This may be because the children were allowed to walk home without an adult to accompany them, but ”today” they expected to be collected by an adult from school or from the after-school club, which is usually on school premises.

From ten years of age upwards a large proportion of the children begin to go home from school alone.

Are the children allowed to cross busy roads and what did the children themselves say?

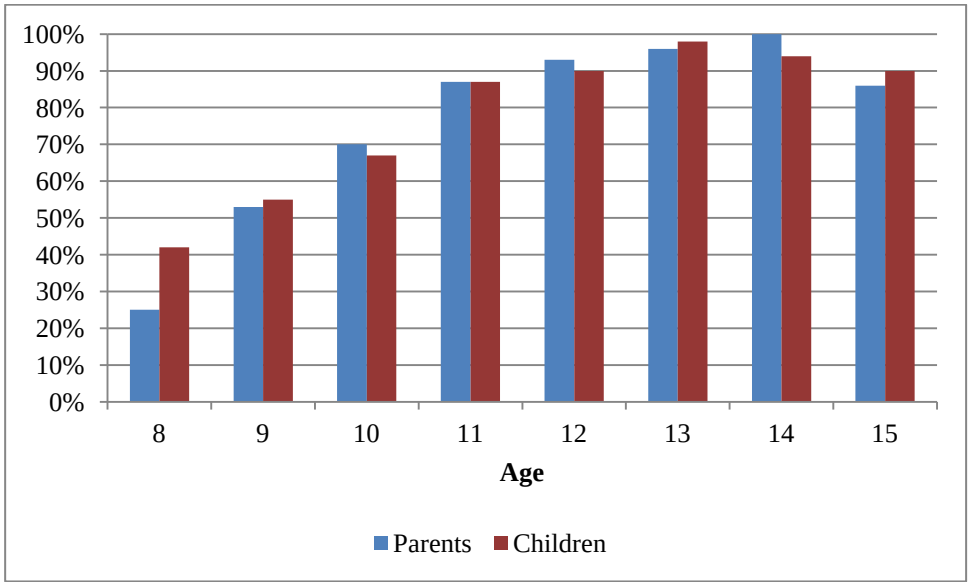

Figure 31 Licence to cross busy roads at different ages

Both the children themselves and their parents consider that older children have greater licence to cross busy roads. The youngest children of all seem to have overestimated this licence. From ten years of age upwards most children are permitted to cross busy roads.

At what age are children allowed to use public transport on their own?

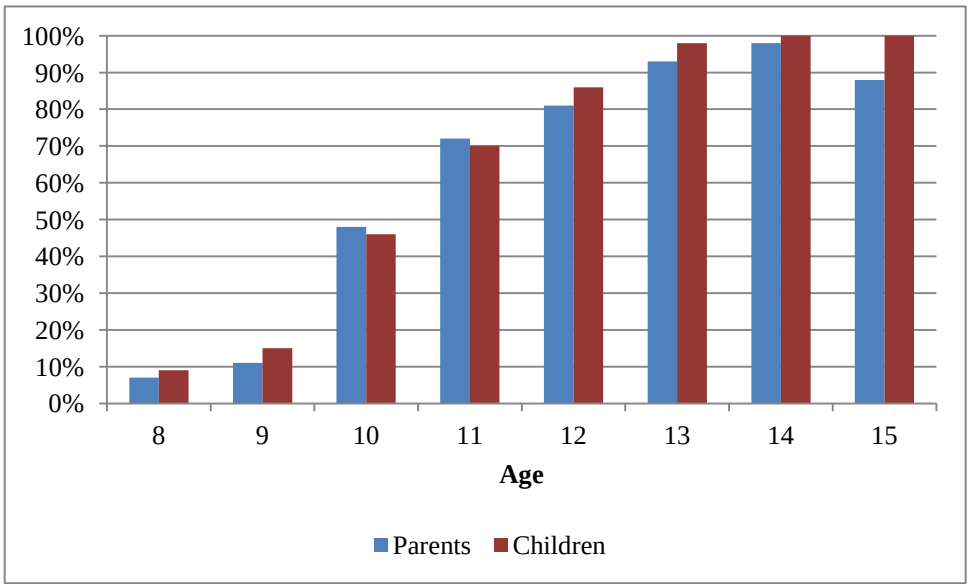

Figure 32 Licence to use public transport at different ages

Overall there is a close correspondence between the children's and the parents' responses. At ten years of age almost half the children are allowed to use public transport on their own, and significantly fewer when the children are younger.

What restrictions do parents place on children of different ages when they walk to places other than school and when they go out after dark?

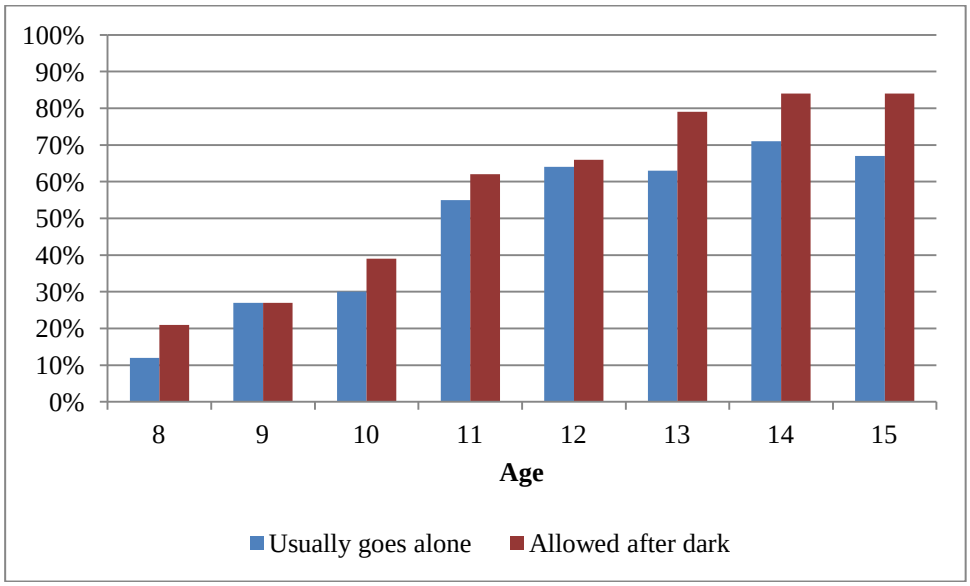

Figure 33 Licence to go to places other than school and to go outside after dark at different ages

We can also see here that parents are less permissive towards younger children and that a break occurs around eleven years of age when more than half the children are given permission to go out alone.

The main reasons given by parents for not allowing their child out after dark are that they are afraid the child may be approached by disreputable characters and/or molested, or the child is still too young, or they are worried about traffic or it does not feel safe out.

Are children with a bicycle allowed to cycle on busy roads and how does this vary with age?

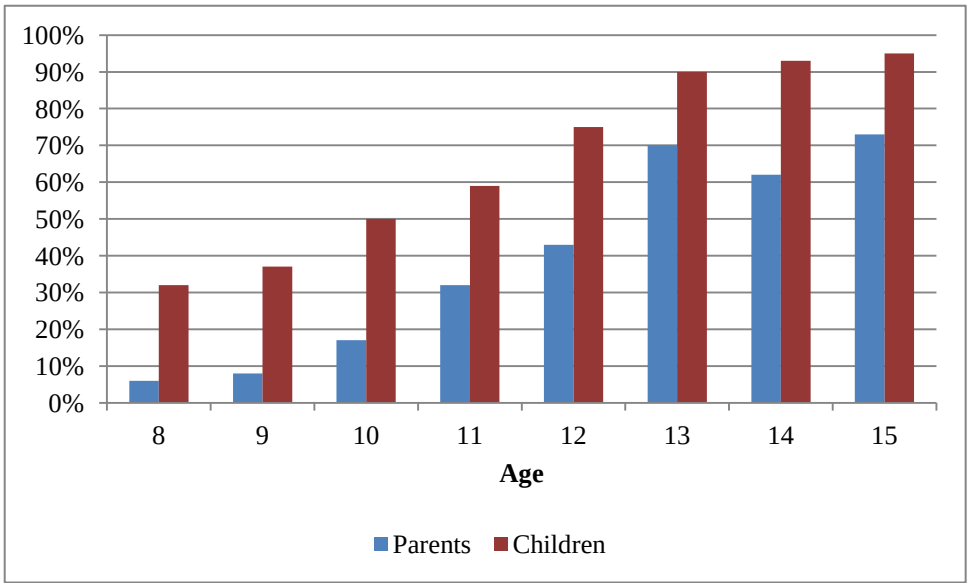

Figure 34 (Of cycle owners) Licence to cycle on busy roads at different ages.

As before (cf. figure 7a), we can see that children seriously overestimate their licence to cycle on busy roads. This may be, as mentioned earlier, because of different interpretations of the meaning of ”busy road.” But once again it is clear that licences increase when children are older. According to the parents, more than half the children are allowed to cycle on busy roads from the age of thirteen; according to the children themselves, half are allowed to do so from the age of ten.

In *summary*, the licence to go home from school alone, to go to other places within walking distance, to go out after dark, to cross busy roads and to use public transport all increase with the child's age. Most children are allowed to do these things from around the age of eleven. However, this is not the case when it comes to cycling on busy roads, where the majority of children are not allowed to do so until the age of thirteen, although half the children themselves say they can do so at the age of ten.

The impact of gender

Is there a difference between girls and boys of different ages with regard to parental licences for independent mobility, weekend activities, and TV and computer use? What are the differences between the children's and the parents' responses?

Licences by gender

Are there any differences between girls and boys with respect to parental licences of independent mobility?

Figure 35a Licence for girls and boys to travel home from school alone, according to the parents

Around an equal number of boys and girls usually walk home from school without an adult to accompany them, according to the parents. But this figure varies with age. More 8-year-old boys are accompanied by an adult, compared with girls.

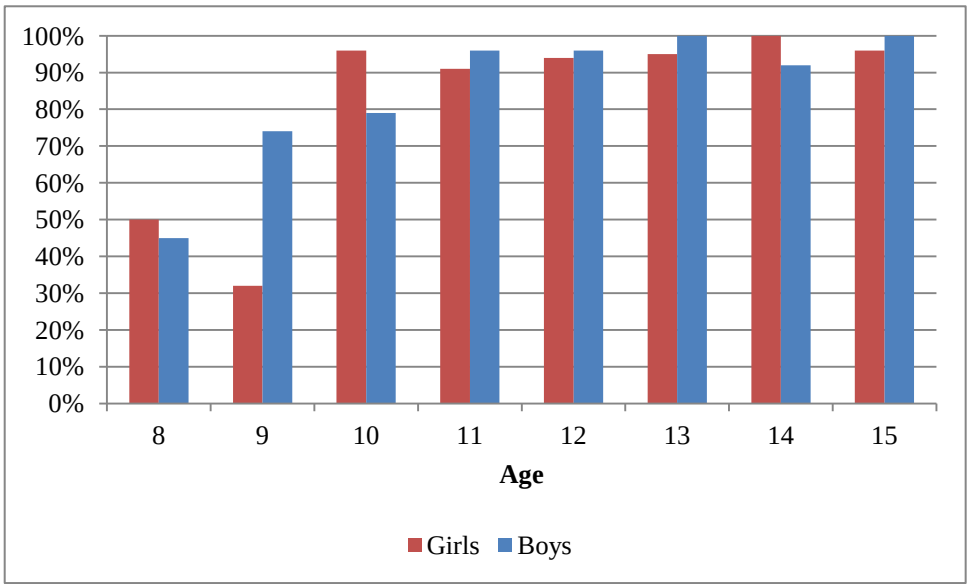

Figure 35b Licence for girls and boys to travel home from school alone, according to the children

In general there is a close correspondence between the parents' and the children's responses with regard to how the children go home from school or how they will go home ”today”. But more 9-year-old girls expected to be taken home by an adult ”today,” compared with boys of the same age.

How do boys and girls of different ages understand the permission to cross busy roads and what is the parents' understanding?

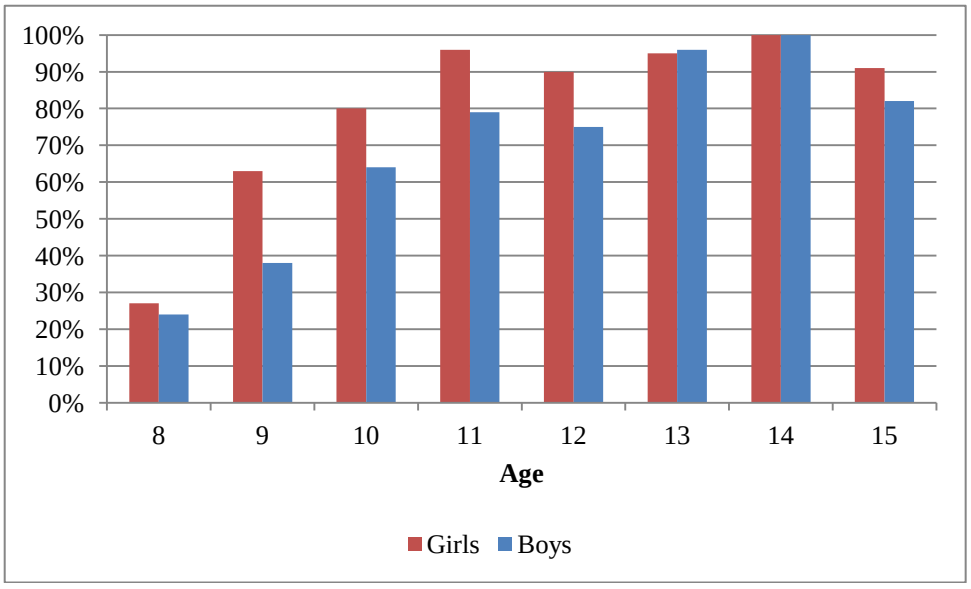

Figure 36a Licence for girls and boys to cross busy roads, according to the parents

Girls have somewhat greater licence to cross busy roads than boys. This increases in line with age – except for 15-year-olds.

What do the children themselves say?

Figure 36b Licence for girls and boys to cross busy roads, according to the children

Boys, especially the younger ones, appear to overestimate licences more than girls. As shown in figure 26, it is also the case that more parents of young boys are very worried about their child crossing a busy road, compared with parents of young girls.

At what age are children allowed to use public transport on their own and is there a difference between boys and girls?

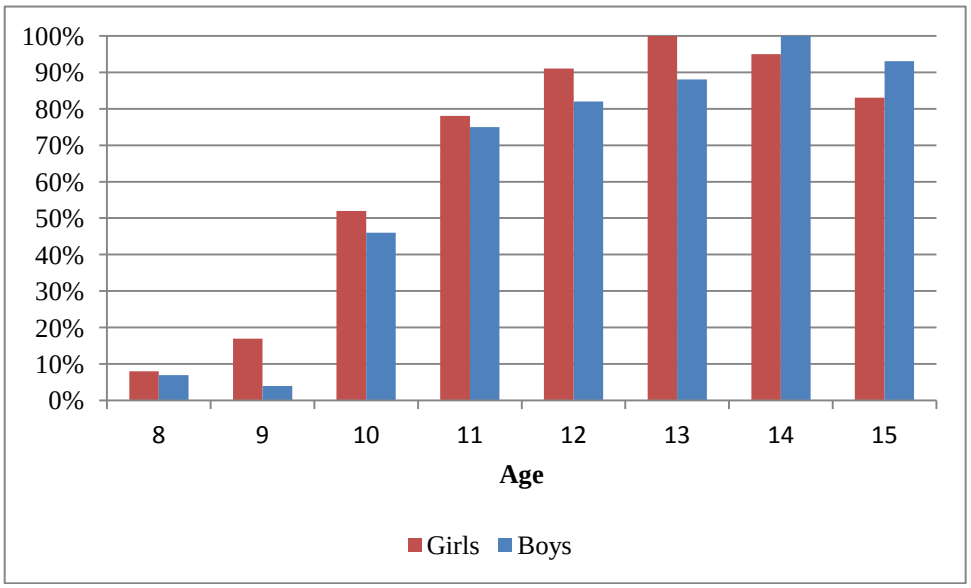

Figure 37a Licence for girls and boys to use public transport, according to the parents

Overall there are no gender differences with regard to boys and girls being allowed to use public transport on their own, according to the parents. But more young girls are allowed to do so than boys

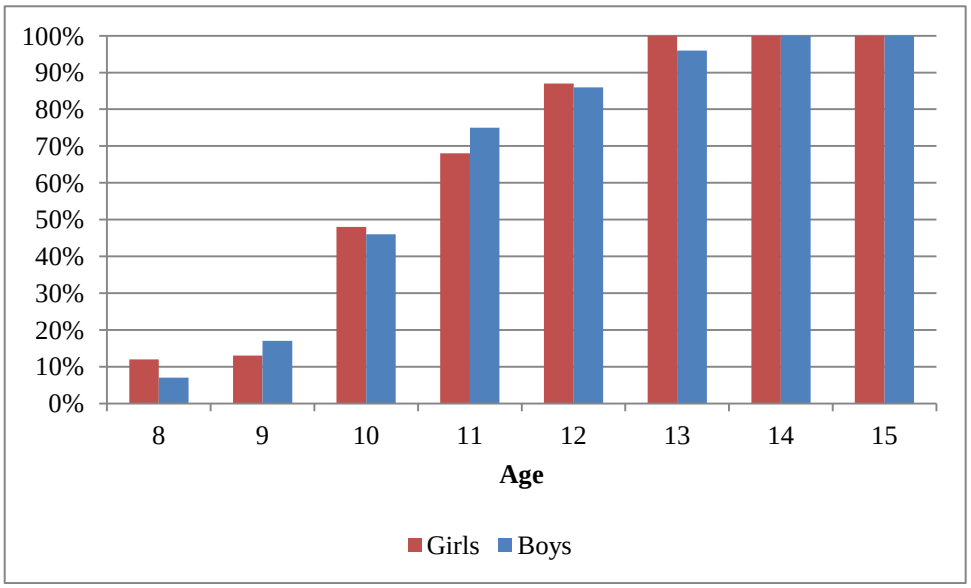

Figure 37b Licence for girls and boys to use public transport, according to the children

Similarly, no direct gender differences can be seen in the children's responses. A number of the oldest children, especially the girls, overestimate their licence to use public transport.

Is there a difference between boys and girls when it comes to being allowed to go to places other than school without an adult?

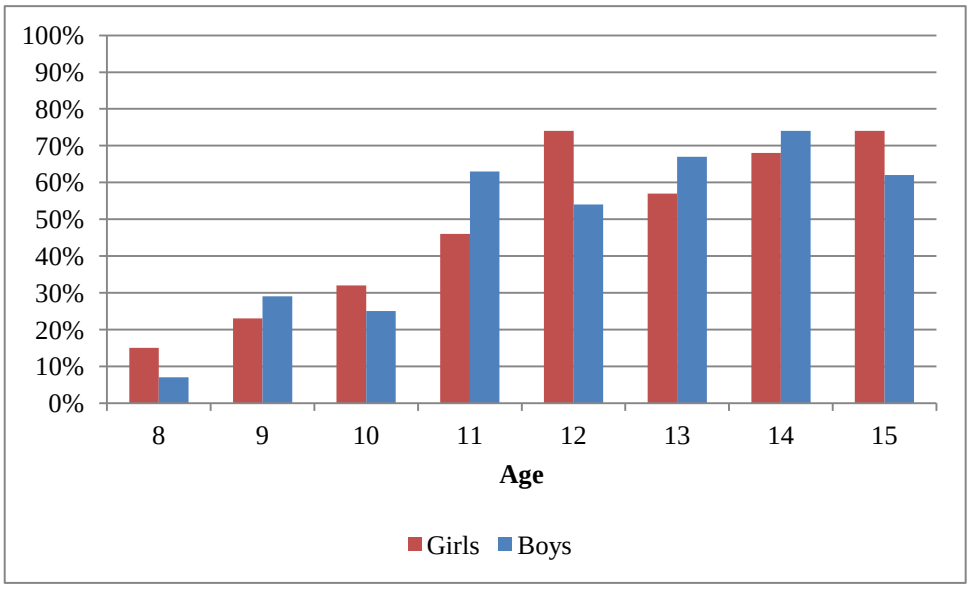

Figure 38 Licence for girls and boys to go to places other than school, according to the parents

Overall there is no difference between boys' and girls' licences. But from the age of eleven more than half the boys are allowed to go to other places within walking distance alone, compared to twelve years of age for the girls, at which age more girls than boys are allowed to do so.

Is there a difference between boys and girls with regard to being allowed out after dark?

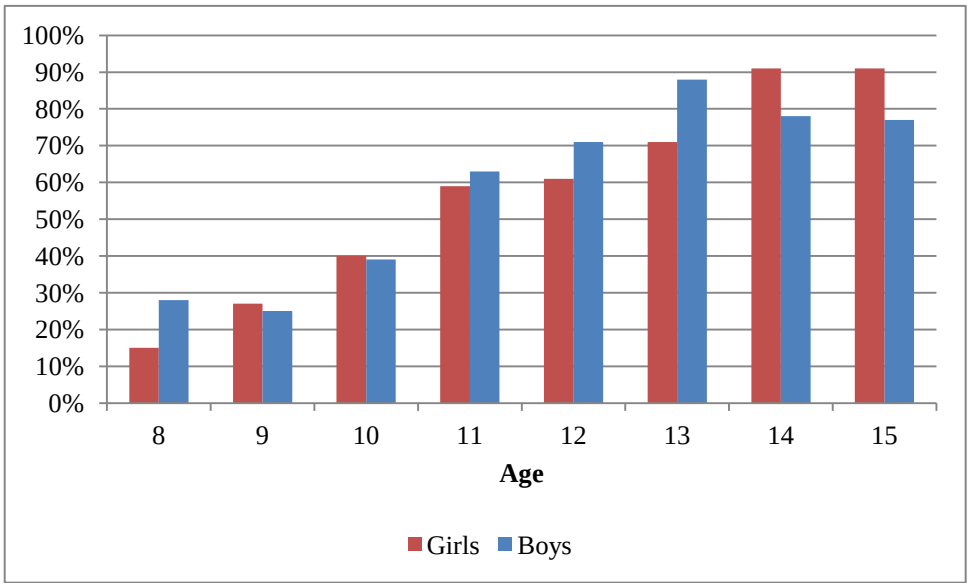

Figure 39 **Licence for girls and boys to go outside after dark, according to the parents**

The parents appear to be somewhat more permissive towards boys than girls when it comes to going out after dark. This is particularly so for the youngest boys. However, parents of older girls are more permissive than parents of older boys.

How do boys and girls of different ages understand the permission to cycle on busy roads and what is the parents' understanding?

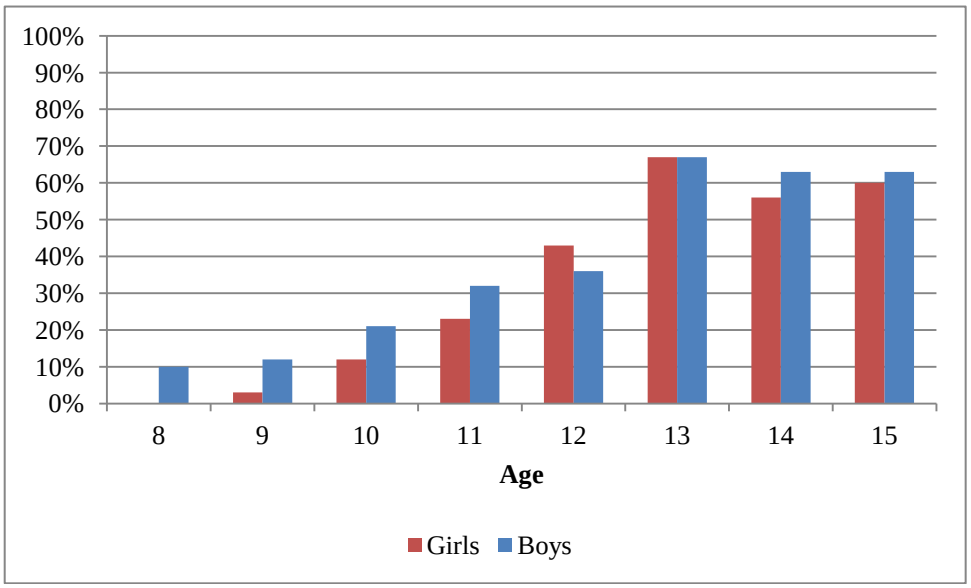

Figure 40a **(Of cycle owners) Licence for girls and boys to cycle on busy roads, according to the parents**

According to the parents, more younger boys than girls are allowed to cycle on busy roads, up to the age of twelve.

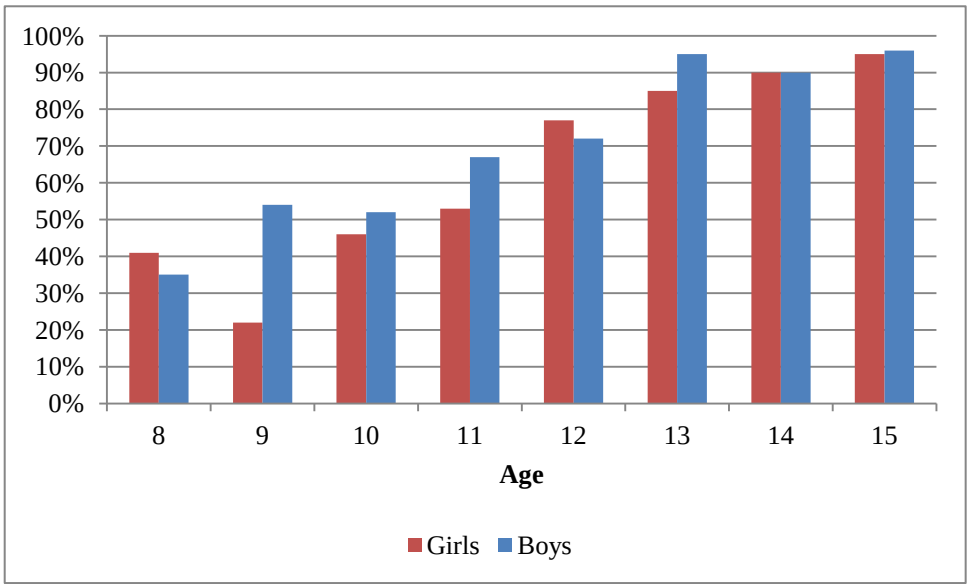

Figure 40b **(Of cycle owners) Licence for girls and boys to cycle on busy roads, according to the children**

The same trend is apparent in the children's answers as the parents', although all the children overestimated the parents' licences, which is perhaps because the question can be understood in a number of different ways (cf. Figure 7a).

Are the children allowed to cycle to places other than school such as parks and friends' homes without an adult to accompany them? How does this vary between boys and girls?

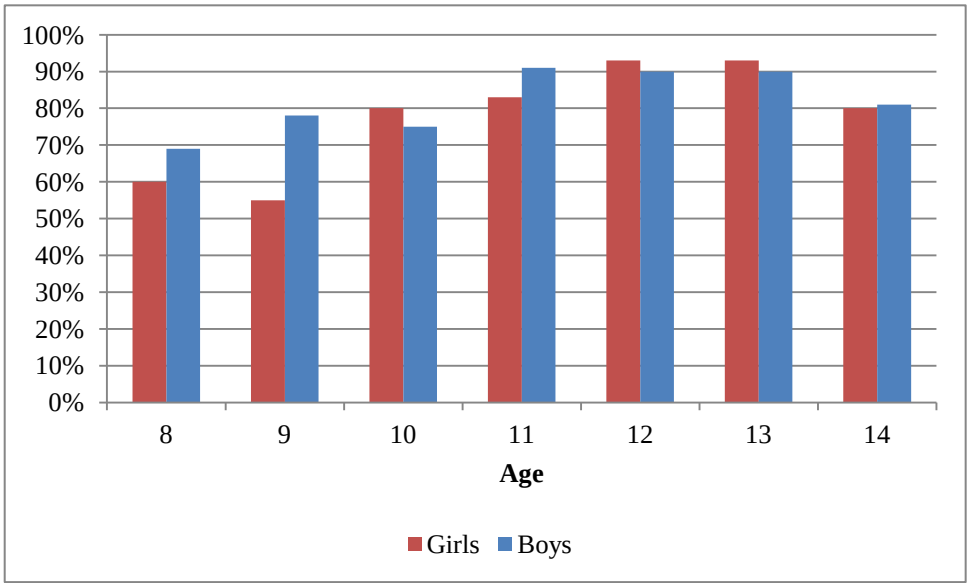

Figure 41 **Licence for girls and boys to cycle to friends or other activities, according to the children**

As can be seen, most children are allowed to cycle to places other than school without an adult to accompany them. This licence increases with age, according to the children themselves. There are no obvious gender differences except among the youngest children, where more boys than girls say that they are allowed to cycle to friends and other activities.

Non-school travel and activities

Which of these activities did the children do this weekend?

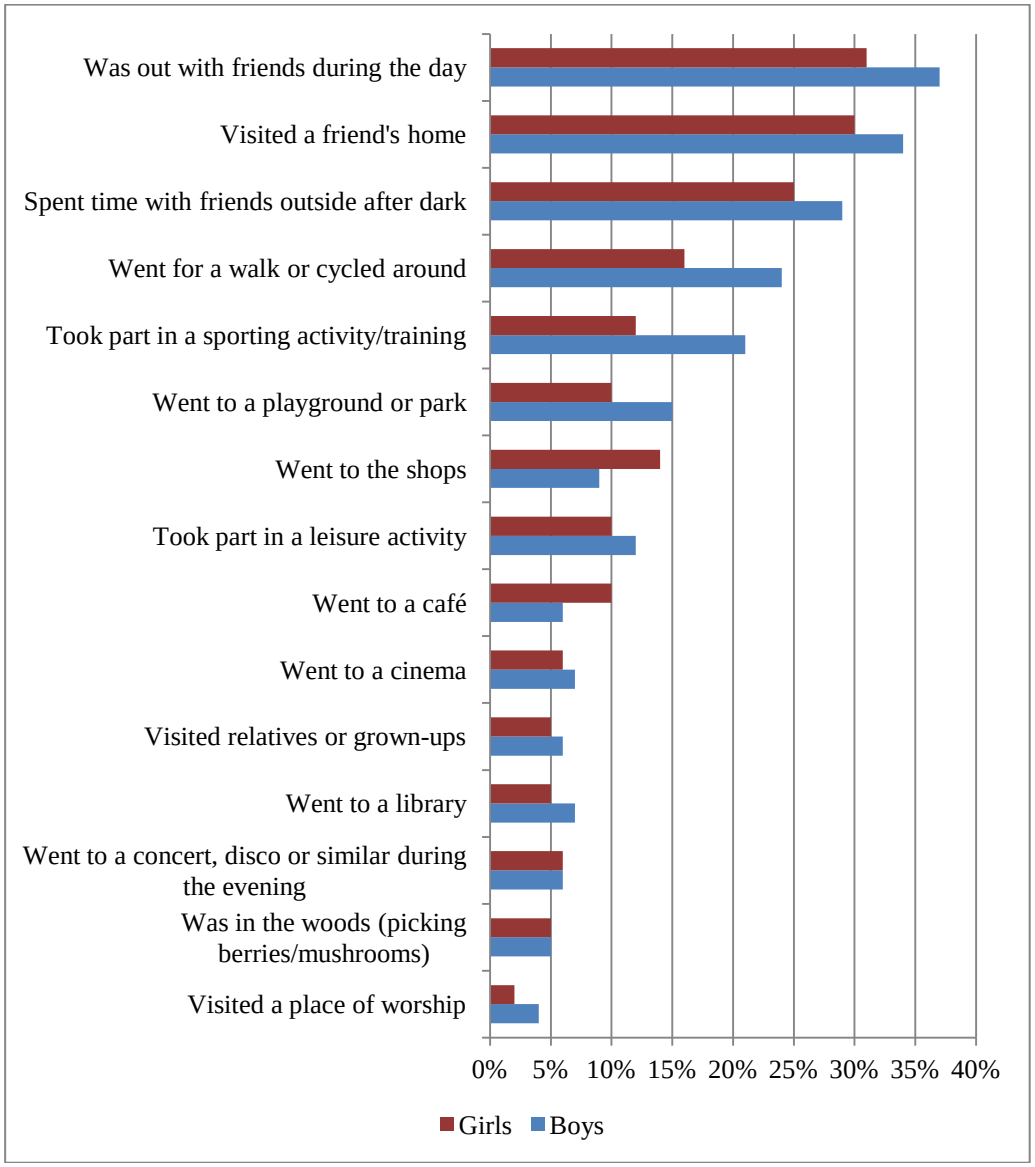

Figure 42a Range and breadth of weekend activities when children are alone or with friends

Slightly more boys than girls say they meet friends, walk or cycle around, take part in a sporting or leisure activity, or go to a play area. Slightly more girls than boys, on the other hand, say they go to the shops or a café. The differences are not great.

Are there any differences between girls and boys when it comes to doing things on one's own compared to doing things with parents?

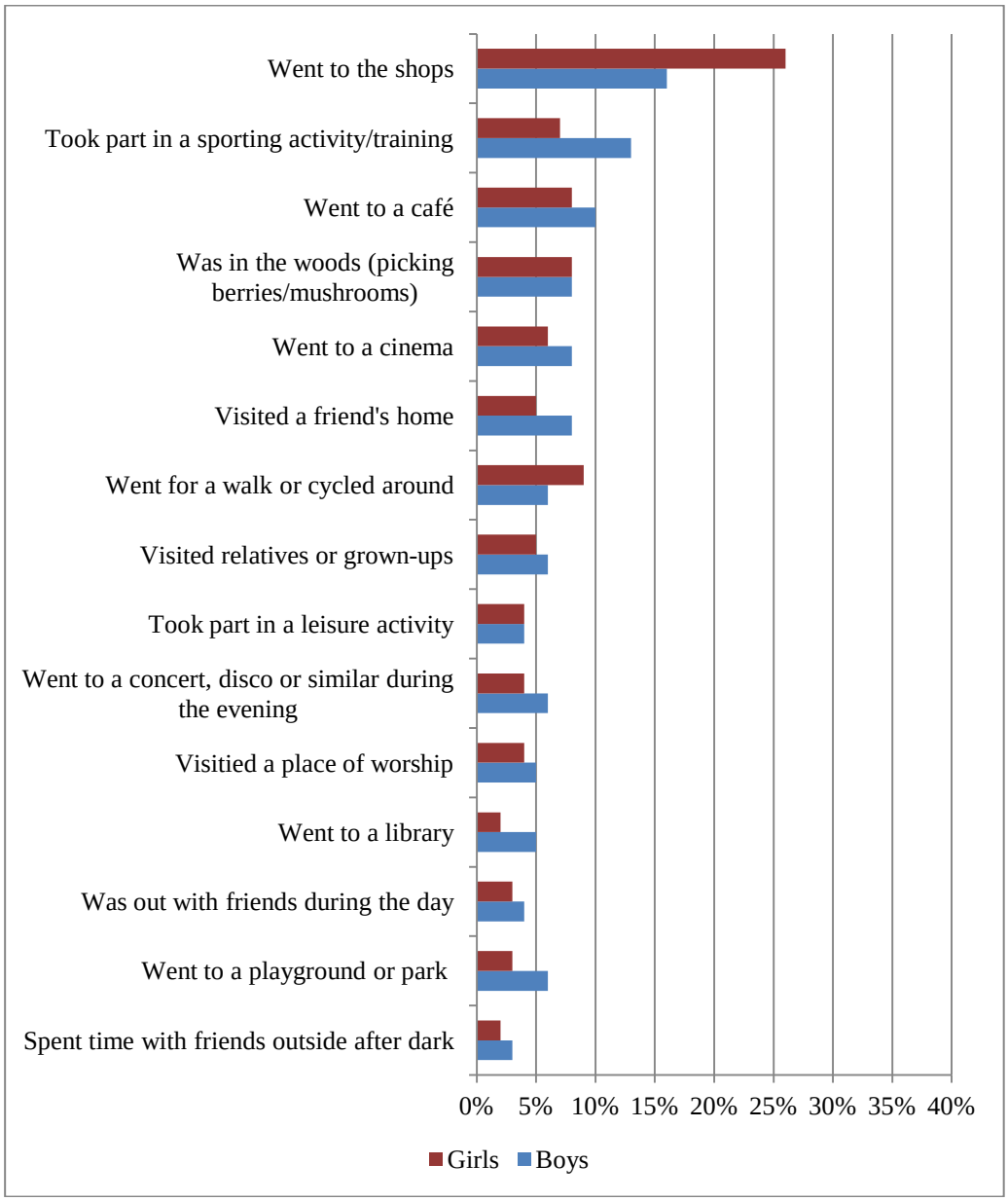

Figure 42b Range and breadth of weekend activities when children are with parents or other adults

A number of children may have chosen both alternatives, that is both together with adults and with other children.

The figures show that fewer children say they take part in these activities together with parents or other adults. The activity that is most common with parents is going shopping, which is more common among girls than boys. Boys participate more than girls in a sporting activity or training both unaccompanied and together with a parent or other adult

How many hours per day do children spend at the computer or TV, according to parents? Are there any differences between girls and boys? Do the parents share the same understanding as the children?

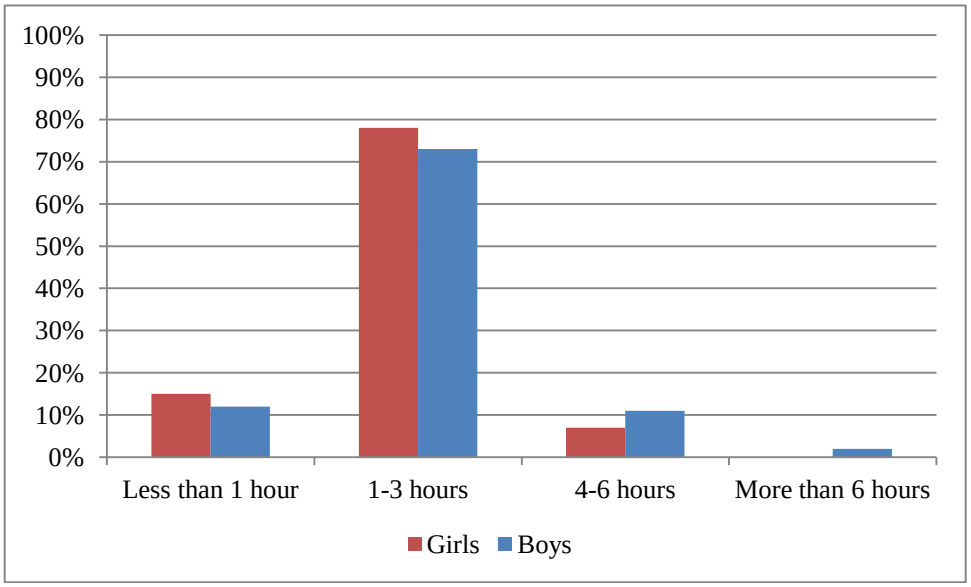

Figure 43a Time spent at the computer or TV by girls and boys, according to the parents

Most parents consider that their children spend a maximum of three hours per day at the computer or TV. A few spend more than three hours, mostly boys

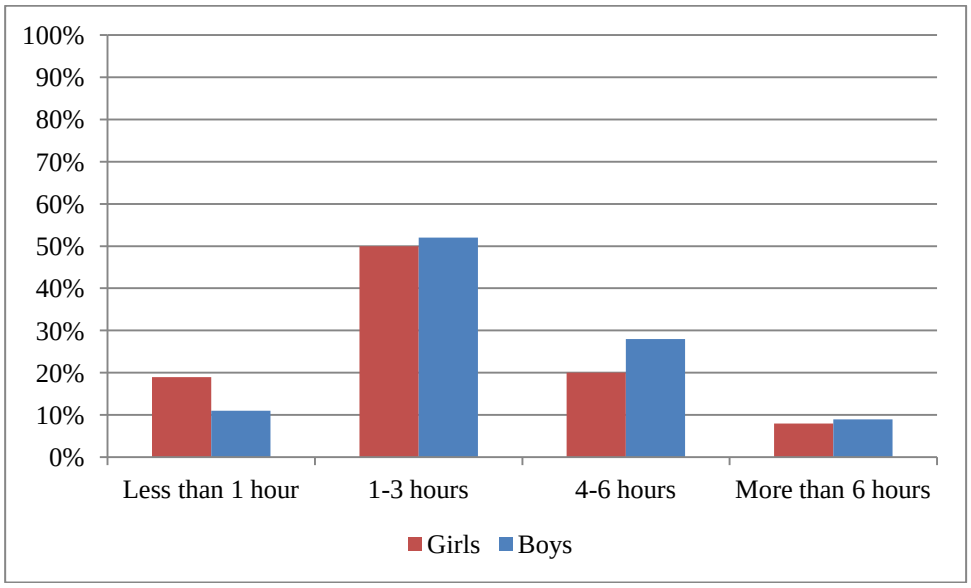

Figure 43b Time spent at the computer or TV by girls and boys, according to the children

The children have a quite different understanding. According to their own responses, a third of them – boys more than girls – spend more than three hours a day at the computer or TV (cf. figures 20a and b).

In *summary*, there are no great differences between boys and girls with regard to parents' licences of independent mobility. Girls have somewhat more licence to cross busy roads on their own, while boys overestimate this licence. Boys have somewhat more licence to go out after dark and younger boys to cycle on busy roads. The children are allowed, according to what they themselves say, to cycle to places other than school without an adult to accompany them. This licence increases with age. There are no obvious gender differences.

At weekends somewhat more boys than girls meet their friends, walk or cycle around, take part in a sporting or leisure activity and go to play areas. Somewhat more girls go to the shops, usually with their parents or other adults. As for sitting at the computer or TV, older boys in particular spend more time doing this than girls. More than a third of boys and more than a quarter of girls say they spend more than three hours a day at the computer or TV.

The impact of car availability

How available is a car and does this affect the children's independent mobility?

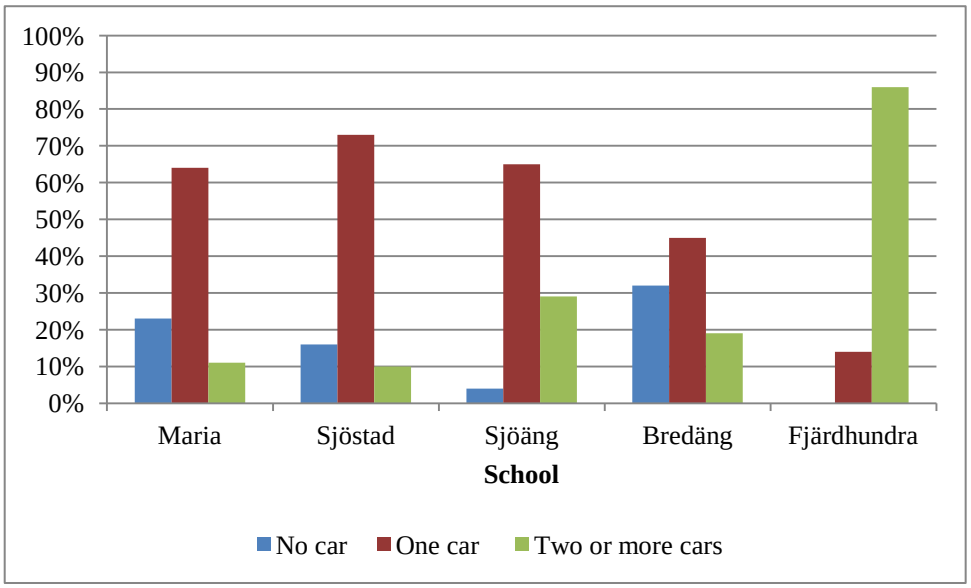

Figure 44 Access to car

A majority of families (86 per cent) have one or more cars. Ownership of two or more cars is most common among the parents of rural *Fjärdhundra*. In the inner-city area around *Maria* School and the new-build area around *Sjöstad* School parents are not so car-dependent. In the suburb *Bredäng* one in three families has no car. This is probably a result of the socio-economic conditions. But one in five families has two or more cars.

Does car ownership vary depending on the children's age?

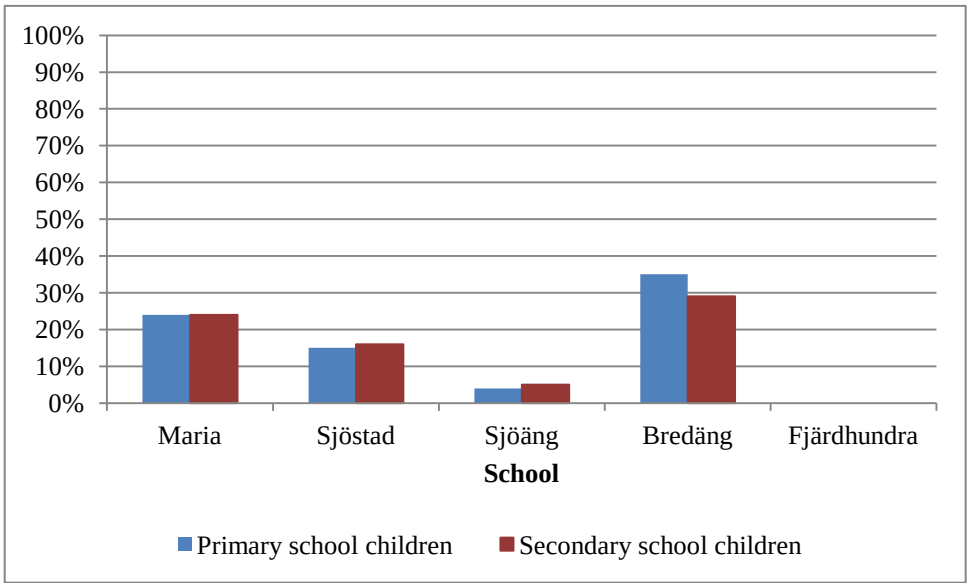

Figure 45 No access to car

There are no great differences in the parents' car ownership relative to the children's age. In *Bredäng* somewhat more parents of primary school children had no access to a car compared with parents of secondary school children.

How does car ownership affect children's mode of transport to school?

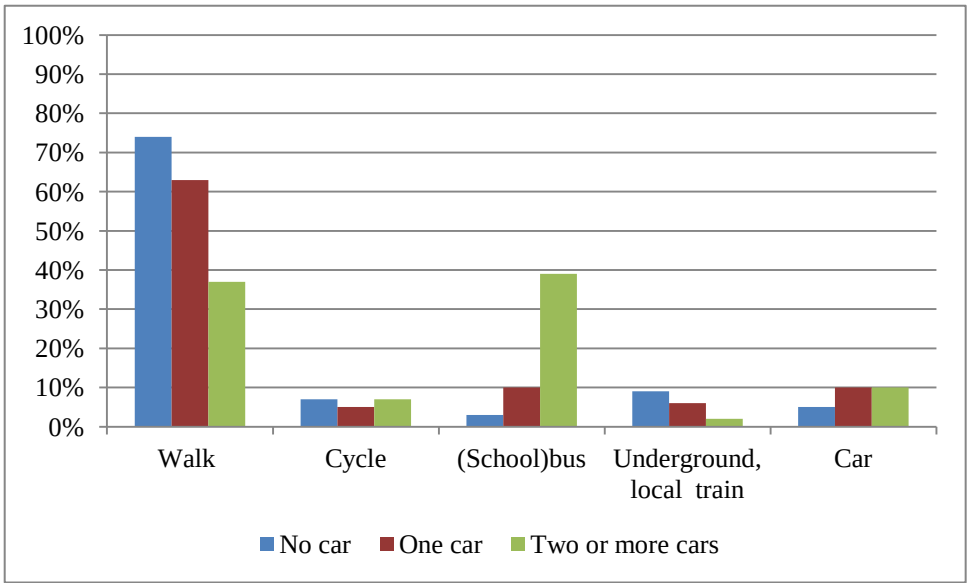

Figure 46 Children's mode of transport to school ”today” and parents' car ownership

Of course, car ownership affects whether a child can be driven to school or not. More children in families that lacked a car walked to school, but five per cent of these children travelled to school by car compared to ten per cent of children in families that owned a car. This may be because the former took the (school) taxi or travelled by car with another adult. Travelling by (school) bus was more common among children in families that had a car and particularly in families that had two or more cars. The reason for this is that it is principally the parents of

children in rural *Fjärdhundra* who are car-dependent and it is mainly these children who travel by (school) bus (cf. table 8a).

In *summary*, most families had access to a car. Car ownership was least common in the inner-city area *Maria* and the suburb *Bredäng*. This is probably because, in the former, car-dependency is not great and, in the latter, socio-economic factors are responsible. There was no great difference between levels of car ownership and children's mode of transport to school – other than that more children in rural *Fjärdhundra*, where car ownership is highest, often took the (school) bus on account of the long distance to school.

The impact of social class

This section deals with the parents' education, their employment status and the family structure.

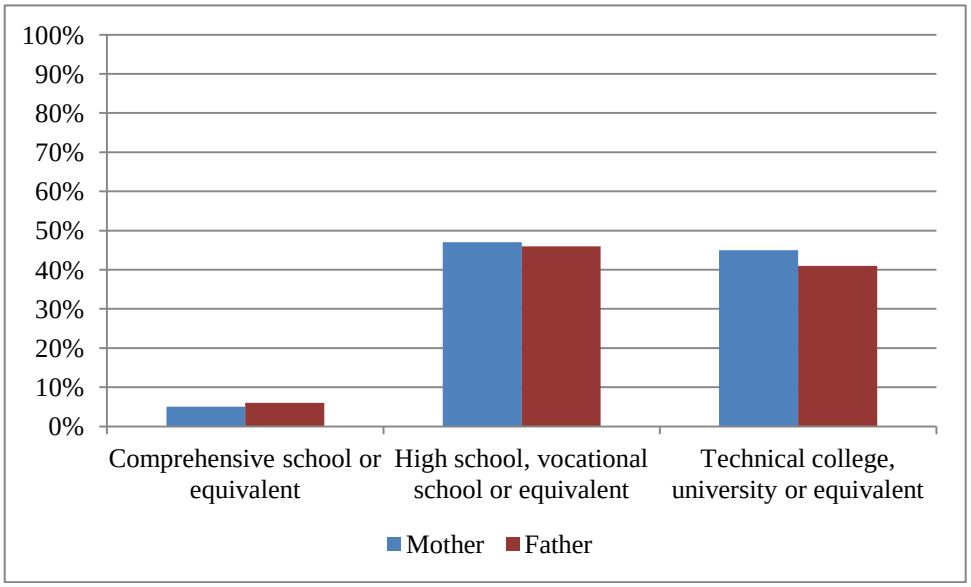

Figure 47a Parents' educational background

The parents' educational background is fairly similar for mothers and fathers. Somewhat more mothers than fathers received higher education.

What is the mothers' educational background in the different areas?

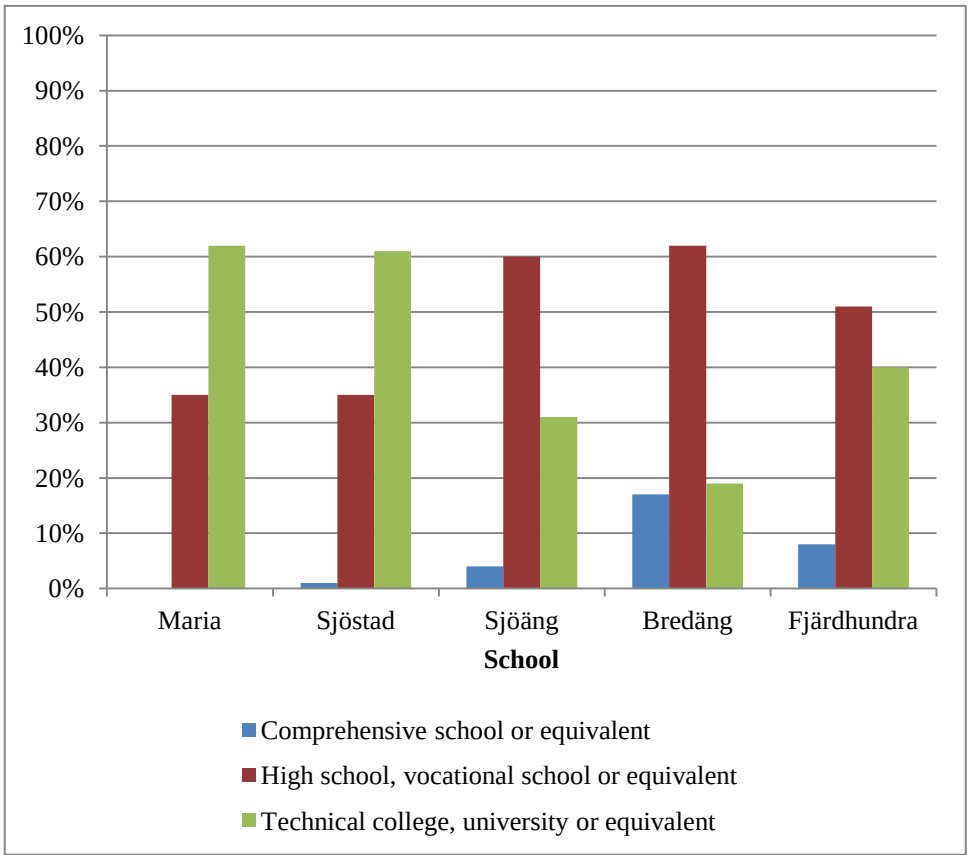

Figure 47b Mothers' educational background in the different areas

More mothers in inner-city Stockholm – the area around *Maria* School and the new-build area around *Sjöstad* School – have a background in higher education than in the other areas. In *Bredäng* less than one in five mothers has had higher education.

What was the employment status of parents in the different areas?

Table 19a Mothers' main occupation

	School					
What is the mother's main occupation?	Maria n=108	Sjöstad n=84	Sjööng n=93	Bredäng n=47	Fjärdhundra n=87	Total N=419
Full-time work	73%	83%	64%	36%	52%	65%
Part-time work	21%	10%	25%	19%	26%	21%
Full-time study	1%	1%	3%	9%	9%	4%
Part-time study	0%	2%	0%	4%	1%	1%
Parental leave	0%	2%	3%	9%	7%	4%
Working at home	0%	0%	1%	13%	0%	2%
Other	1%	1%	2%	4%	5%	2%
Missing data	4%	0%	1%	6%	0%	2%

The majority of mothers work either full-time or part-time. However, employment status varies among the different areas. Full-time work is most common among the mothers in the new-build inner-city area *Sjöstad*. In the inner-city area around *Maria* School approximately

two-thirds of mothers work full-time and around a fifth work part-time. In *Bredäng* the lowest proportion of mothers are in full-time or part-time work; around a fifth work at home or are on parental leave; 13 per cent are involved in full-time or part-time study. In rural *Fjärdhundra* also fewer mothers work full-time.

Table 19b Fathers' main occupation

	School					
What is the fathers' main occupation?	Maria n=108	Sjöstad n=84	Sjöäng n=93	Bredäng n=47	Fjärdhundra n=87	Total N=419
Full-time work	82%	83%	84%	64%	89%	82%
Part-time work	5%	4%	4%	9%	5%	5%
Full-time study	1%	0%	0%	0%	0%	0%
Part-time study	0%	0%	0%	2%	0%	0%
Parental leave	0%	0%	1%	0%	0%	0%
Working at home	0%	1%	0%	0%	0%	0%
Other	6%	6%	4%	11%	6%	6%
Missing data	7%	5%	7%	15%	1%	6%

Among fathers too employment is lowest in *Bredäng.* Missing data is also highest here.

How many people live in the household?

Table 20 Number of people in household

	School					
How many people live in your home including yourself? (Reported by parents)	Maria n=108	Sjöstad n=84	Sjöäng n=93	Bredäng n=47	Fjärdhundra n=87	Total N=419
2 people	8%	6%	3%	6%	8%	6%
3 people	24%	19%	19%	23%	12%	19%
4 people	46%	57%	44%	34%	49%	47%
5 people	11%	13%	17%	9%	16%	14%
6 or more people	2%	1%	10%	17%	12%	7%
Missing data	8%	4%	7%	11%	3%	6%

Around half the families consist of four people in the household, while around two-thirds consist of three to four people. The families in Fjärdhundra, Bredäng and Sjöäng have the greatest number of people (five or more) per household. Few households contain six or more people, the greatest number being in *Bredäng*.

Do the children live with both parents, with both parents alternately, or with just one parent?

Table 21 Family structure

	School					
Does your child live with…	Maria n=108	Sjöstad n=84	Sjöäng n=93	Bredäng n=47	Fjärdhundra n=87	Total N=419
Both parents	74%	75%	83%	81%	78%	78%
Only with mother/father	11%	8%	4%	15%	9%	9%
Alternately with mother and father	12%	14%	11%	4%	7%	10%
Other	2%	1%	2%	0%	5%	2%
Missing data	1%	1%	0%	0%	0%	1%

Most children live with both parents – the greatest number being the children in *Sjööäng* School. Around ten per cent of children live with just one parent and a similar number live alternately with their mother and father. The latter arrangement is most common in the inner-city areas around *Maria* School and *Sjöstad* School.

In *summary*, educational background, employment status and family structure varied among the different areas. The greatest number of parents with a higher educational background and full- or part-time work was in the inner-city areas *Maria* and *Sjöstad*. Households are smaller here than in the other areas, with two-thirds of children living with both parents – a somewhat lower proportion than in the other areas. In *Bredäng* fewer parents have had a higher educational background and full- or part-time employment, and households here also contain the most people.

The impact of areal characteristics

As we have seen, children's independent mobility is affected by their neighbourhood environment. We therefore chose residential areas with different structures. How do these different environments affect parents' licences of independent mobility? This section also describes the parents' attitudes towards a good outdoor environment for children, together with the children's TV and computer activities.

Parents' view of their neighbourhood and attitudes to a good outdoor environment

How do the parents view their residential neighbourhood? What opportunities for play exist?

Table 22 Opportunities for play in the neighbourhood

	School					
Do you have access to outside space(s) where your children can play?	Maria n=108	Sjöstad n=84	Sjööäng n=93	Bredäng n=47	Fjärdhundra n=87	Total N=419
Garden	7%	7%	63%	23%	95%	40%
Park which you can reach without crossing a main road	79%	67%	80%	83%	18%	64%
Park which you can reach by crossing a main road	47%	33%	33%	2%	4%	27%
Quiet residential road/courtyard	58%	58%	34%	32%	14%	40%
Large green spaces or wooded areas that can be reached without crossing any main roads	43%	49%	55%	34%	82%	54%
There is nowhere to play other than by crossing a main road	1%	1%	2%	6%	1%	2%

Many parents have access to a garden: the greatest number is in rural *Fjärdhundra* which largely consists of single-family houses and in *Sjööäng* where there is also a large number of single-family homes. Most people have access to a park except in rural *Fjärdhundra*, which however lies close to large green spaces and wooded areas. Few parents felt there was nowhere to play other than by crossing a main road.

What were the parents' attitudes to traffic environments? Where did they think it was important for children to live? The possible responses were ”very important,” ”quite

important," "neither important nor unimportant" and "completely unimportant." The following relates only to the response "very important."

Table 23 Parents' attitude to good outdoor environments for children

	School					
It's very important to live…	Maria n=108	Sjöstad n=84	Sjöäng n=93	Bredäng n=47	Fjärdhundra n=87	Total N=419
where the child can play outdoors or be outdoors on their own	40%	53%	70%	68%	78%	60%
where the child has clean air	26%	44%	55%	72%	68%	50%
close to friends	56%	57%	56%	47%	25%	48%
close to large green spaces	24%	35%	30%	51%	58%	38%
close to transport links	42%	39%	27%	51%	14%	33%
near the school	28%	32%	28%	55%	18%	30%
near a park/play park	33%	28%	34%	53%	12%	30%
where there is no noise pollution	15%	19%	18%	51%	39%	26%
where there is little or no traffic	11%	22%	27%	55%	27%	25%
close to sports facilities	19%	18%	19%	36%	11%	19%
near shops and leisure facilities	9%	8%	3%	30%	1%	8%

More than half of all parents consider it very important to live in such a way that children can be outdoors and play independently. However, this varies among the different areas and reflects the environment that the parents themselves live in.

In the inner-city area around *Maria* School fewer parents agree with the statement above. Similarly, fewer of these parents consider it is very important to have little or no traffic and clean air, compared with other parents.

The parents around *Sjöstad* School live in a new-build area that lies slightly outside the city centre and has an urban character. A somewhat larger number of these parents think it is important for children to be able to play independently outdoors and have clean air.

The majority of parents from the older suburb around *Sjööäng* School also consider it very important for children to be able to play independently outdoors, to have clean air and to be close to their friends.

In traffic-separated *Bredäng* more than half the parents consider it very important to have clean air and little or no traffic, to be free of noise pollution and to be close to green spaces and play areas as well as transport links and the school.

In rural *Fjärdhundra* the majority of parents consider it very important that children can play independently outdoors, have clean air and be close to large green spaces – but fewer parents stressed the importance of proximity to schools, transport links and friends.

Do parents wish to prioritize cycle paths over road building? They were asked to respond to the following statement: "One should use some of the money currently spent on road-building schemes to construct footpaths and cycle paths."

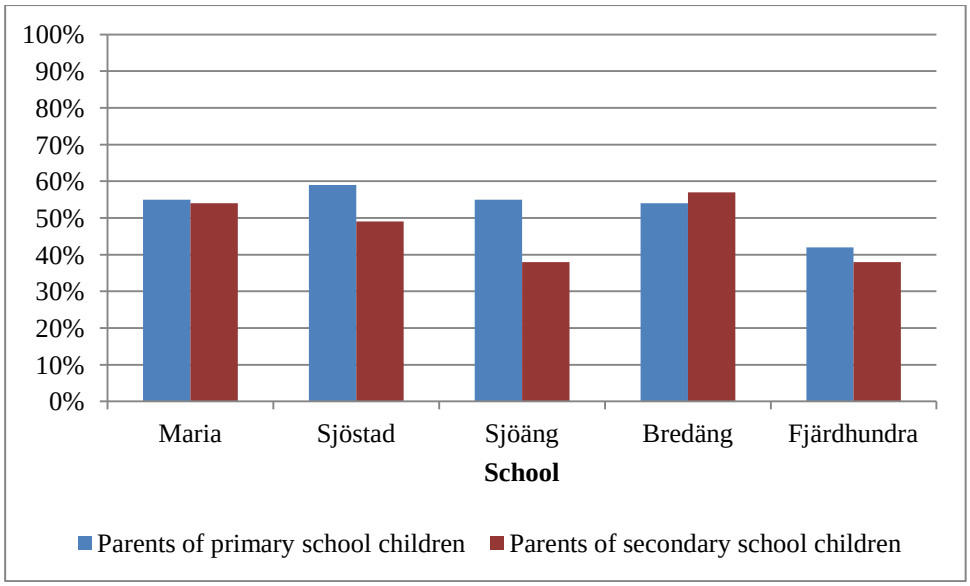

Figure 48 Parents' attitude to cycle paths versus road building

The parents could put a cross against any of five alternatives, from "completely agree" to "completely disagree". The figure above shows the results for "completely agree". Half of all parents completely agreed with the statement; most said either "completely agree" or "partly agree" and only a few completely disagreed. Somewhat fewer parents in *Fjärdhundra* did not completely agree with the statement.

Licences in different areas

How do the schools differ with regard to parents' permission for children to walk home unaccompanied by an adult? Do the parents and children share the same view of this?

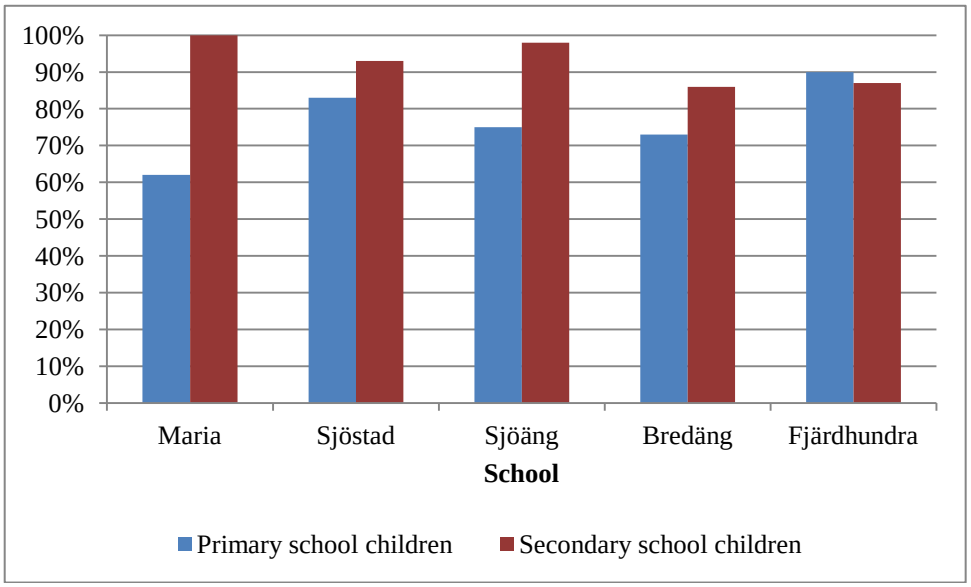

Figure 49a Licence to travel home from school alone in the different areas, according to the parents

According to the parents, around three-quarters of primary school children are allowed to go home unaccompanied by an adult, and nearly all secondary school children with the exception of those in rural *Fjärdhundra*, who generally take the (school) bus or are driven home by car. It is mainly the younger children in the inner-city *Maria* School who are not allowed to go

home alone, whereas all secondary school children are allowed to do so. The fewest children with permission to go home alone are in *Bredäng*.

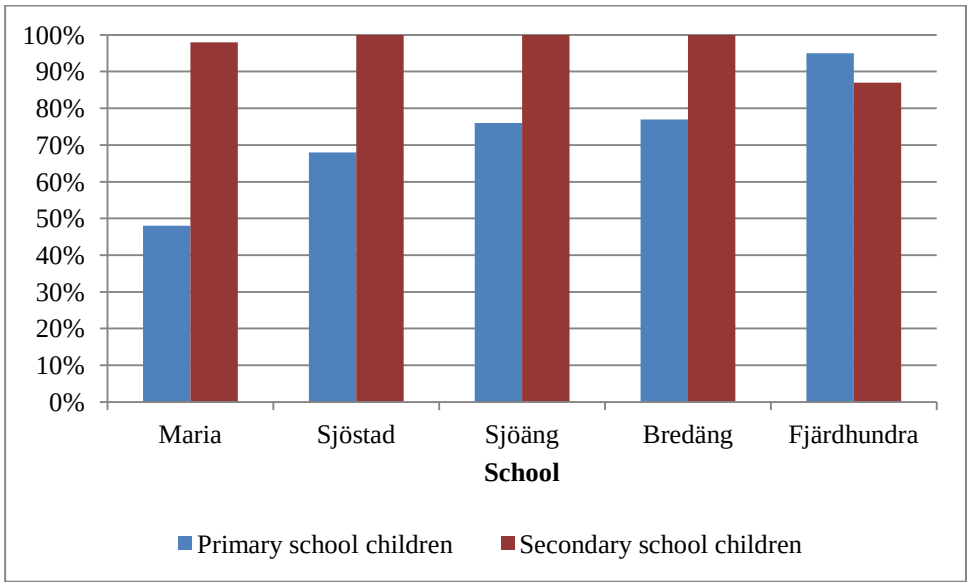

Figure 49b **Licence to travel home from school alone “today” in the different areas, according to the children**

Around one in ten children did not know whether they would be collected from school by an adult. Few children were going home with an adult that was not their parent.

There is generally a close correspondence between the children's responses and the parents'. But according to the children, a good number of them are not going home ”today” without adult company. This is particularly the case for the younger children in *Maria* School and *Sjöstad* School. In *Bredäng* 86 per cent of parents said that older children were allowed to travel home from school alone, but 100 per cent of the children themselves said they were doing so ”today.”

Is there a difference between the children with regard to being allowed to cross busy roads?

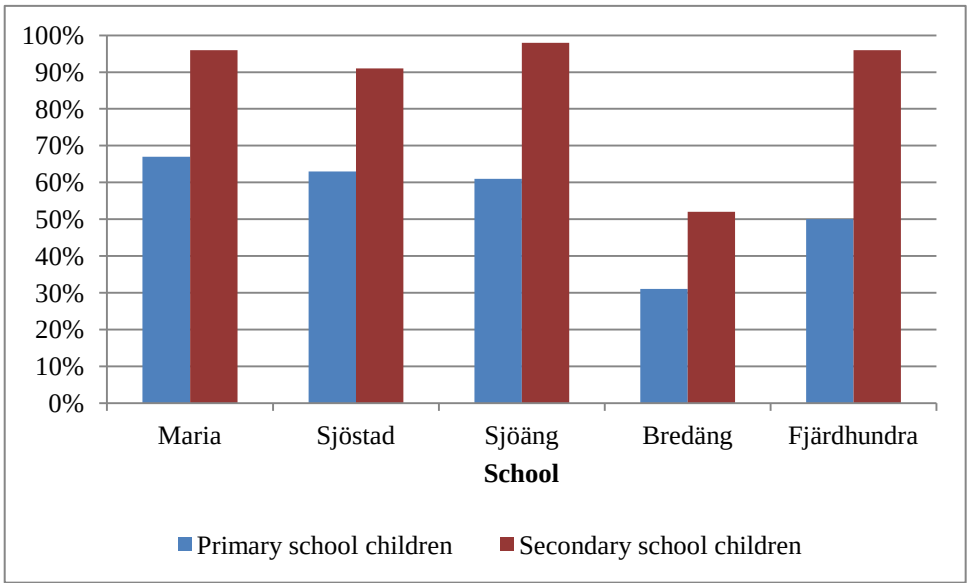

Figure 50a Licence to cross busy roads in the different areas, according to the parents

As shown earlier, the licence to cross busy roads increases with age. This is true of all areas. Nearly all secondary school children are allowed to cross busy roads unaccompanied by an adult. However, this is not the case in traffic-separated *Bredäng*, especially among the older children. This may be because the children here do not normally need to cross a busy road and the roads are very busy.

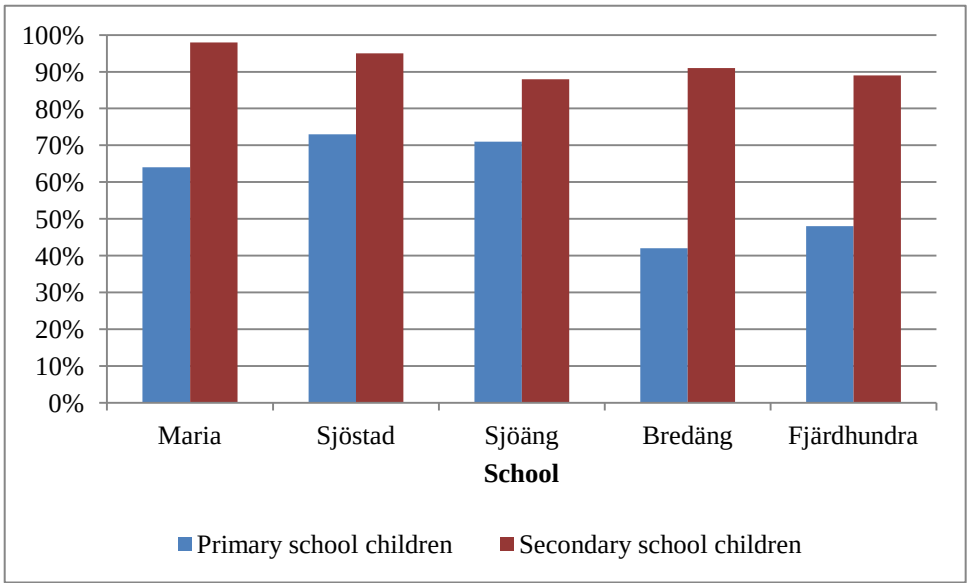

Figure 50b Licence to cross busy roads in the different areas, according to the children

As previously mentioned, children overestimate the licence to cross busy roads. This is particularly true of the older children in *Bredäng*.

Are the children allowed to use public transport on their own?

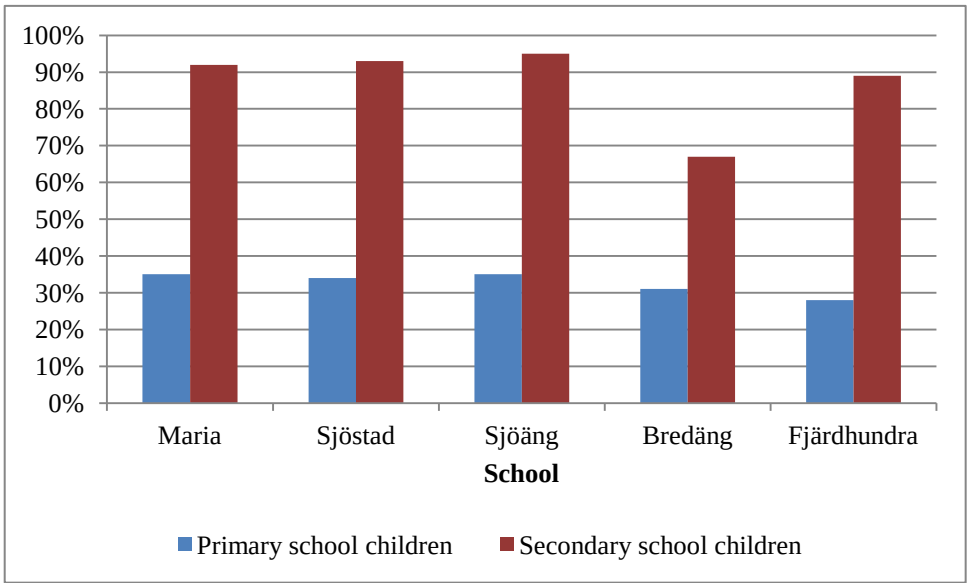

Figure 51a Licence to use public transport in the different areas, according to the parents

A third of the younger children, and nearly all the older children, are allowed to use public transport on their own. The situation is roughly similar in all areas with the exception of *Bredäng*, where only two-thirds of the older children are allowed to do so. The younger children in rural *Fjärdhundra* also have less licence to use public transport on their own, perhaps because they do not need to do so.

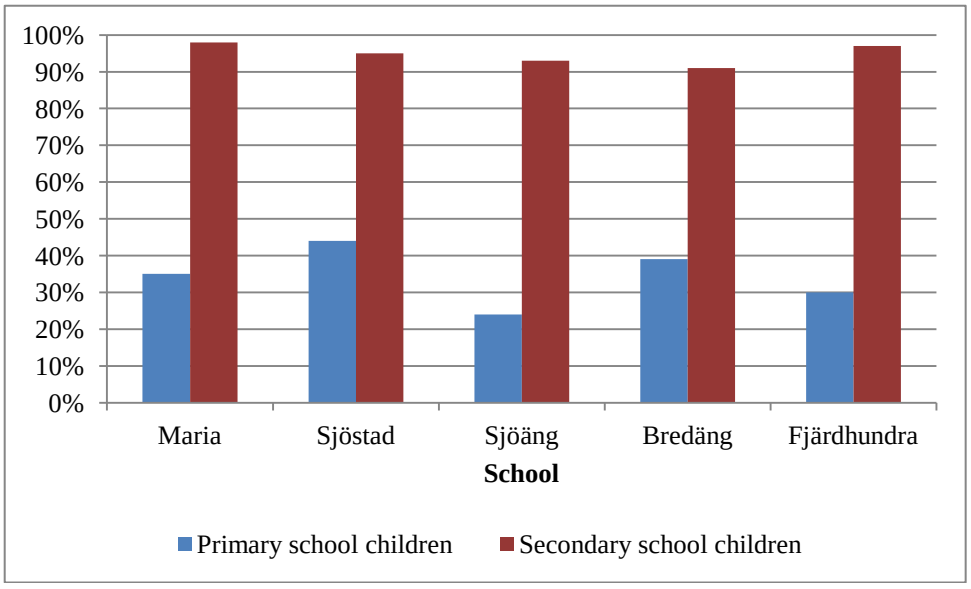

Figure 51b Licence to use public transport in the different areas, according to the children

The children's and adults' responses largely correspond. The older children appear to overestimate their licences – especially in *Bredäng* and to a certain extent in *Fjärdhundra*.

Are the children in the different areas allowed to walk unaccompanied to places other than school?

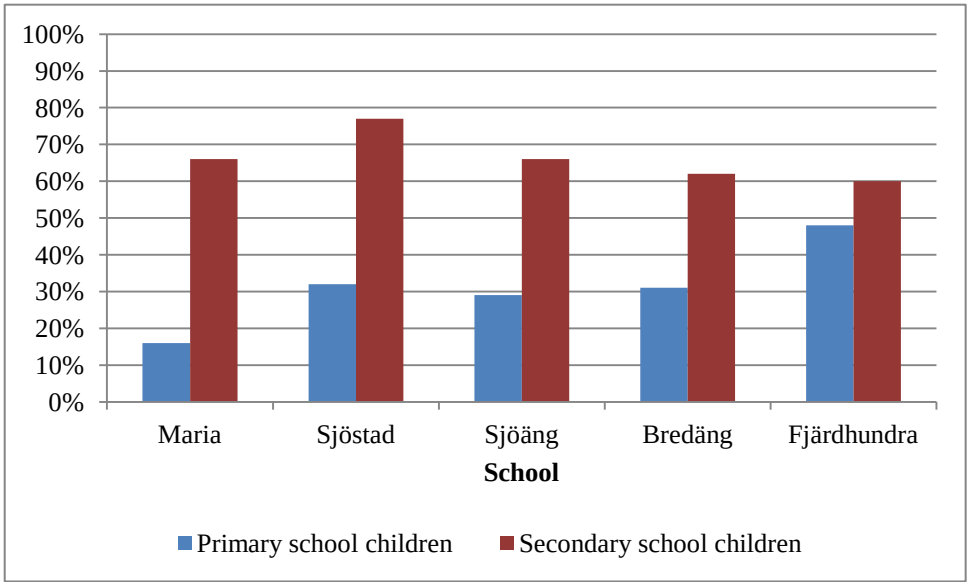

Figure 52 **Licence to go alone to places other than school in the different areas, according to the parents**

Here only the alternative “usually goes alone” has been included. Once again we can see that the younger children are usually accompanied to places. There is a great deal of variation between primary school children from the inner-city area around *Maria* School and rural *Fjärdhundra*. Overall half the children are allowed to go out alone – most commonly in the new-build ”densified” area around *Sjöstad* School, where most older children are allowed to do so. It is least common among the younger children from *Maria* School, situated in inner-city Stockholm.

Is there a difference between children from the different areas with regard to being outside after dark?

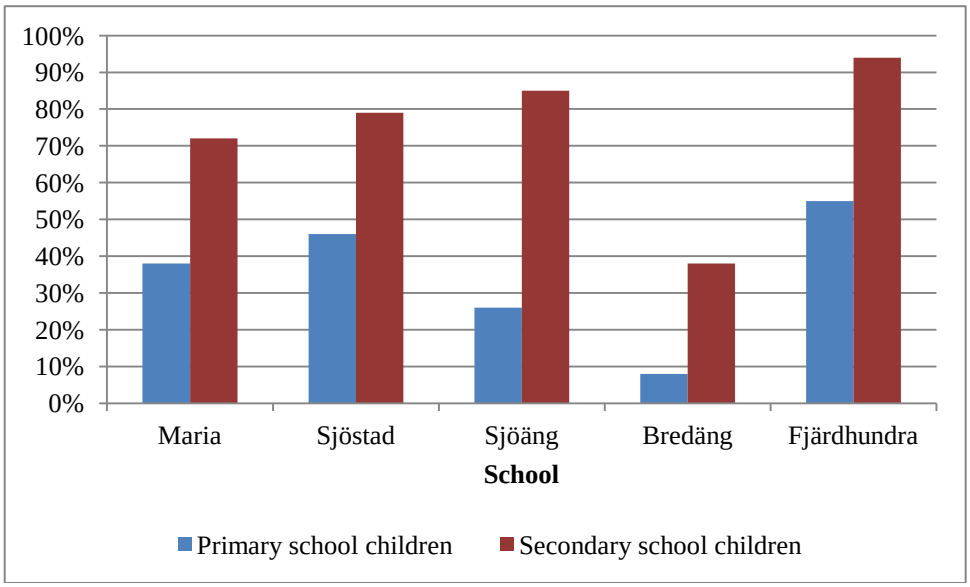

Figure 53 **Licence to go outside after dark in the different areas, according to the parents**

The parents were asked: “Do you allow your child to be outside on their own in the evenings in September/October when it is dark?” Again we can see that the older children are allowed out after dark to a significantly greater extent than the younger children. However, the children in multi-ethnic *Bredäng* are allowed to do this much less – something that is also true of the older children. Nearly all the parents of the older children in rural *Fjärdhundra* said their children could go out after dark.

Are children in the different areas allowed to cycle on busy roads?

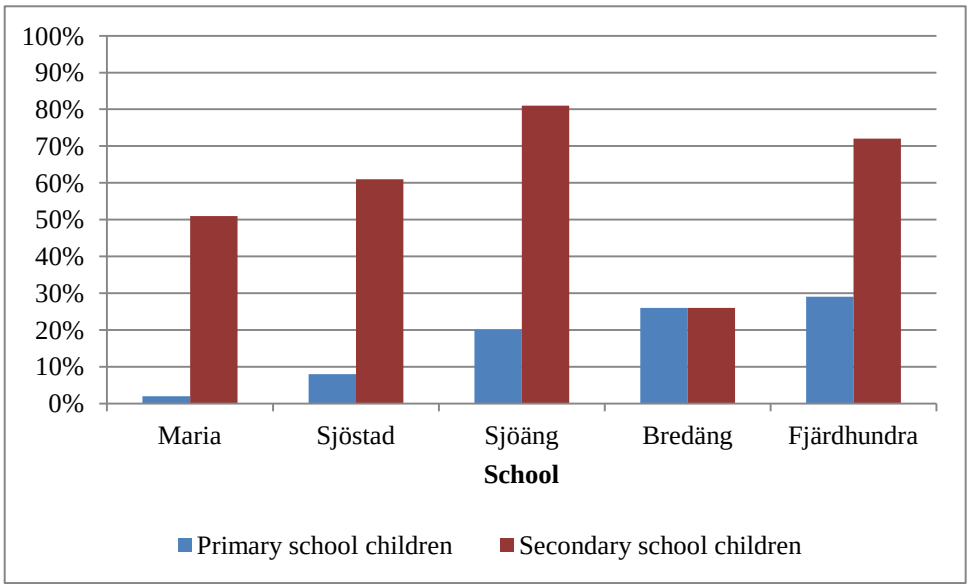

Figure 54a **(Of cycle owners) Licence to cycle on busy roads alone in different areas, according to the parents**

Again it should be pointed out that this question can be understood in different ways. In rural *Fjärdhundra* more children are allowed to cycle on busy roads. The area consists of detached houses with relatively light traffic and is bordered by trunk roads that tend not to be used by cyclists. Similarly around *Sjööäng* School, which lies in a suburb close to Stockholm and consists mostly of detached houses with relatively light traffic where the main roads are not used by cyclists. The inner-city schools in *Maria* and *Sjöstad* are bordered by urban traffic. Traffic-separated *Bredäng* is equipped with cycle paths so that as a rule one does not need to cross busy roads. As before, few younger children have permission to cycle on busy roads, especially in the inner-city areas around *Maria* School and *Sjöstad* School.

How did the children themselves answer this question?

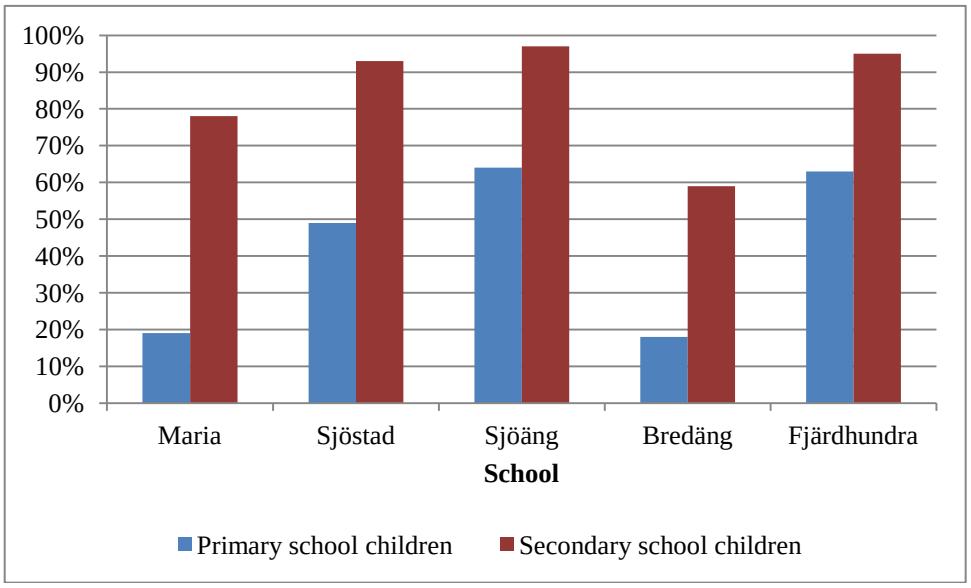

Figure 54b **(Of cycle owners) Licence to cycle on busy roads alone in different areas, according to the children**

Although the children, like the adults, state that older children have a greater licence to cycle on busy roads, they completely overestimate the extent of the licence. An exception is the younger children in *Bredäng*, where cycle ownership among the children is also lowest (73 per cent) according to the parents.

Are the children allowed to cycle on their own to friends and other activities?

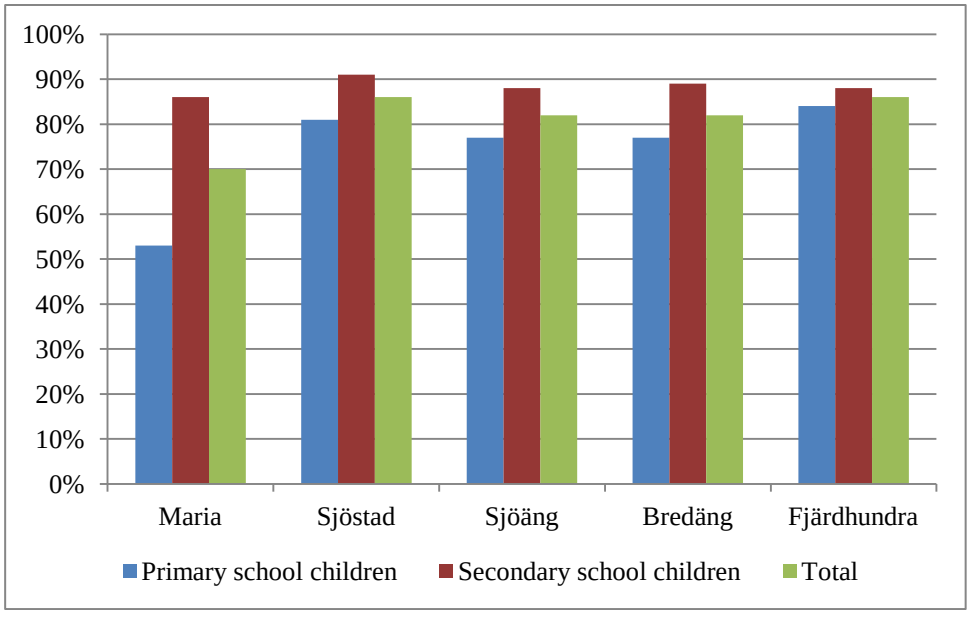

Figure 55 **Licence to cycle to friends or other activities in the different areas, according to the children**

Unsurprisingly, the children in the inner-city area around *Maria* School cycle to other places and to friends' homes to a lesser extent than the children in the other areas do. And the

younger children do so consistently less than the older children do. This of course also depends on where the friends live.

How much did the children cycle in general? They were asked the following question: “How many times do you cycle per week in September/October?”

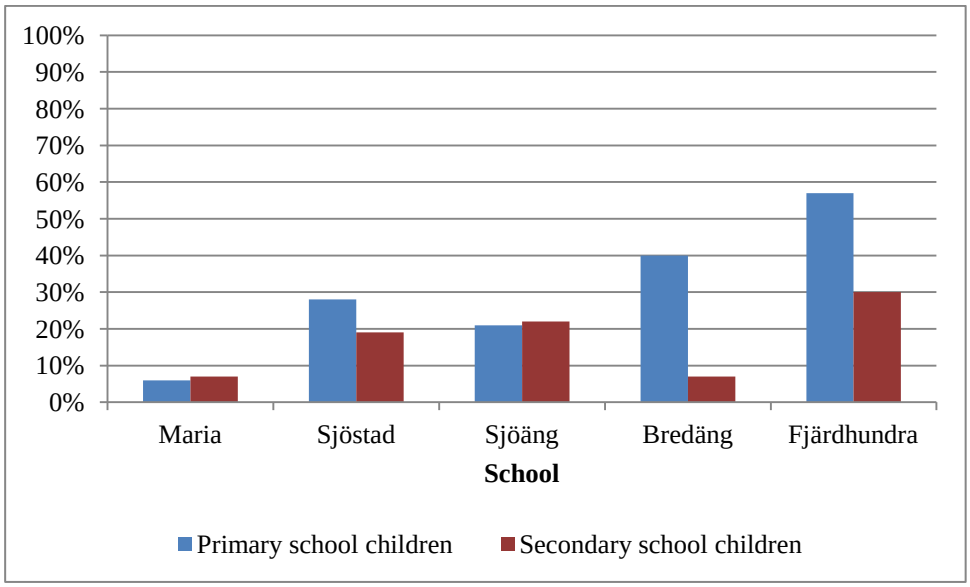

Figure 56 **(Of cycle owners) Children who cycle more than three times a week in the different areas**

The children in inner-city *Maria* cycle significantly less than the other children – probably due to the lack of connected cycle paths. The area where most children cycle more than three times a week is rural *Fjärdhundra*. Younger children in the traffic-separated suburb *Bredäng* also cycle more frequently than others.

How long do the children spend at the computer or TV in the different areas?

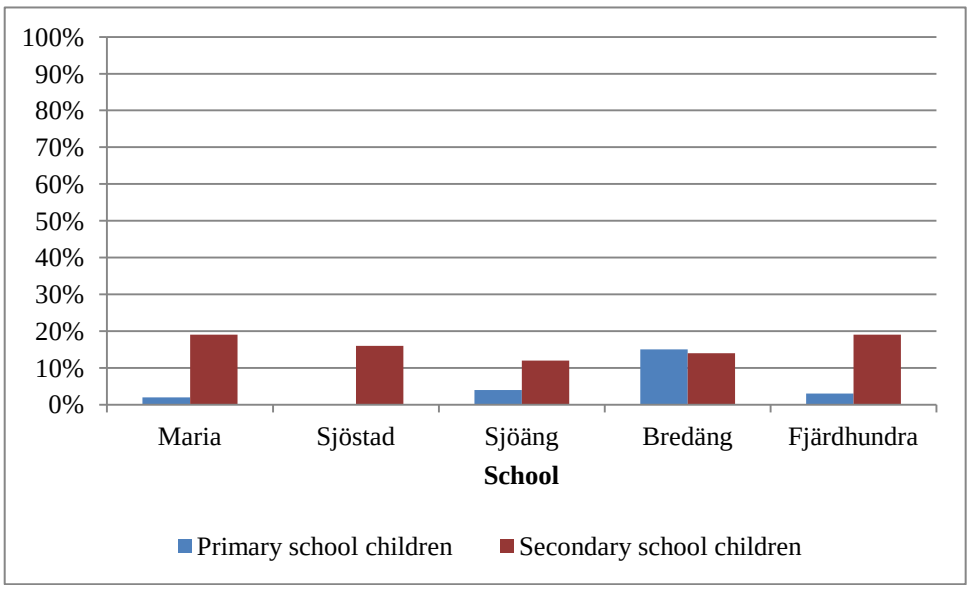

Figure 57a **More than three hours a day spent at the computer or TV in the different areas, according to the parents**

According to the parents in *Bredäng*, a greater number of their children spend more than three hours a day at the computer or TV, compared to what the parents in the other areas report. The lowest numbers are for the younger children in inner-city *Maria* and *Sjöstad.*

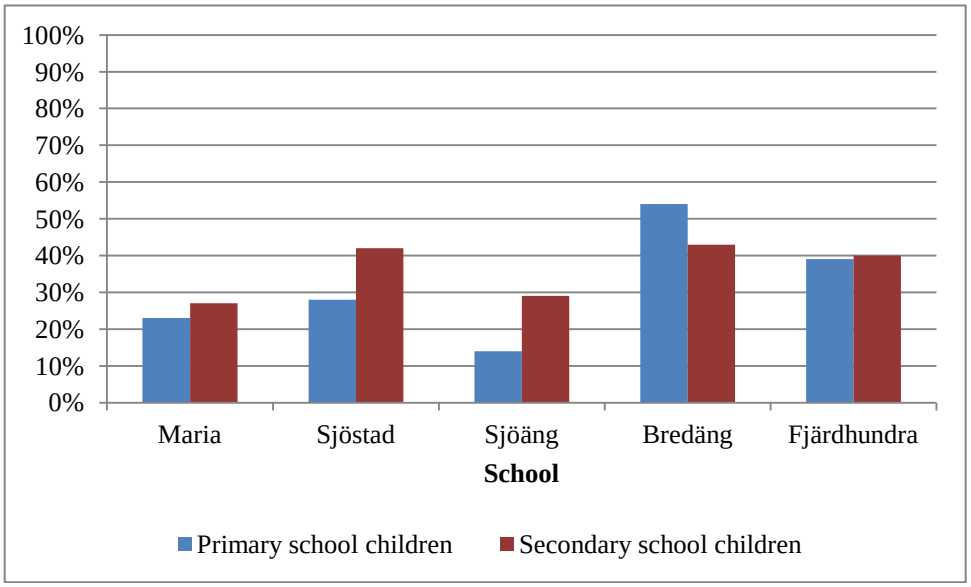

Figure 57b More than three hours a day spent at the computer or TV in the different areas, according to the children

In all areas more of the children themselves said they spend over three hours a day at the computer or TV compared with responses by the parents – the largest number being in *Bredäng*, where half of all children gave this response compared to just 15 per cent of the parents. The smallest number was among the youngest children in *Sjööng* School.

In *summary*, the different schools were chosen on account of their different characters, social as well as physical, and this is reflected in the children's independent mobility. Rural *Fjärdhundra* and the area around *Sjööng* School consist mostly of detached dwellings with light through-traffic and are surrounded by larger roads. *Maria* School is situated in a typical inner-city area and *Sjöstad* School in a new-build area of urban character lying immediately adjacent to the inner-city itself. *Bredäng* is an area from the 1960-70s with multi-storey dwellings and traffic separation, inhabited mainly by immigrants.

Attitudes towards good play environments for children vary between the different areas and reflect each area's own character. For example, although most adults consider it very important for children to be able to play independently outdoors, fewer parents in the inner-city areas (*Maria* and *Sjöstad*) considered it to be so. It was the parents in rural *Fjärdhundra* – a sparsely-populated area – who considered it to be most important. On the other hand, fewer of these parents thought proximity to friends was very important. Around half of these parents, and similar number in *Bredäng*, consider that proximity to large green spaces is very important – something given less emphasis by parents in the inner-city area around *Maria* School. Half the parents in *Bredäng* consider that proximity to play areas is very important, compared to around one in ten parents in *Fjärdhundra*. Fewer parents in *Fjärdhundra* also consider it very important to prioritize cycle paths over road building. People in this rural area are car-dependent and many families have two or more cars.

The children in traffic-separated *Bredäng* have more limited licences of independent mobility than children in the other areas. Fewer of these children are allowed to cross busy roads on their own, to go on their own to places other than school, to go outside after dark, to travel home from school without an adult, to cycle on busy roads or to use public transport – although the responses of these children, as for all the children, show that they overestimate these licences. Both parents and children are more worried about the danger from adults than from traffic. The parents in *Bredäng* appear to be more over-protective than those in other areas, which may be because people here are more worried about personal safety. The traffic-separation also means that the children do not need to cross busy roads. A greater number of children in this area spend more than three hours a day in front of the computer or TV.

The younger children in inner-city *Maria* also have a more limited licence of independent mobility. This is principally in relation to going on their own to places other than school, walking home from school alone and cycling on busy roads. This inner-city area is characterized by heavy traffic.

How parents travelled as children

Most parents were between 30-44 years of age – around 75 per cent of mothers and 60 per cent of fathers. Few were under the age of 30 and the rest were 45 or older. Around 70 per cent of mothers and 20 per cent of fathers answered the questionnaire, and 5 per cent mother and father together.

How did the parents themselves usually travel to school when they were 8-9 years old and was their mode of transport different from their children's?

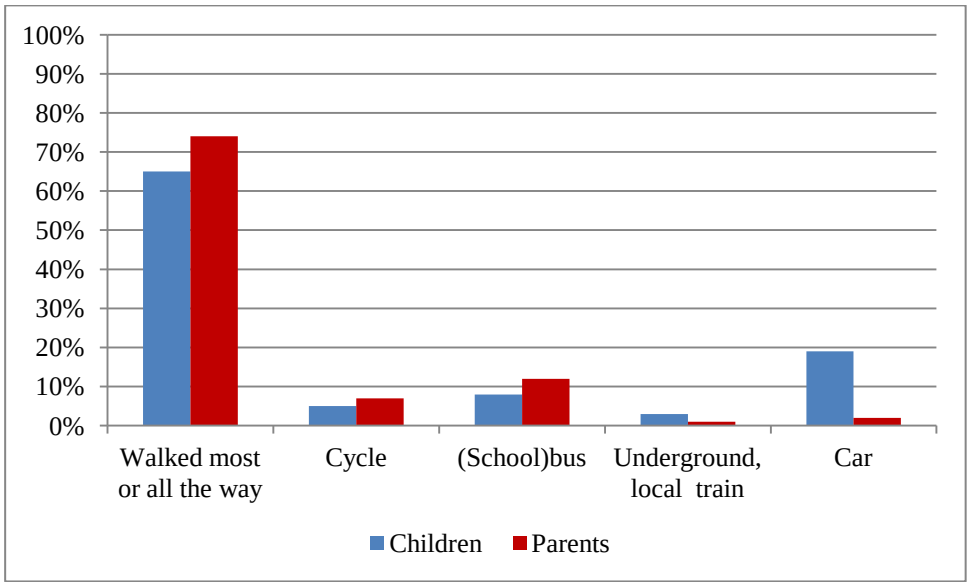

Figure 58a Parents' and their own children's mode of transport to school

A greater number of parents walked to school when they were 8-9 years old compared to the number of children who walked to school “today”. More of the children also travelled to school by car.

How did car travel vary in the different areas?

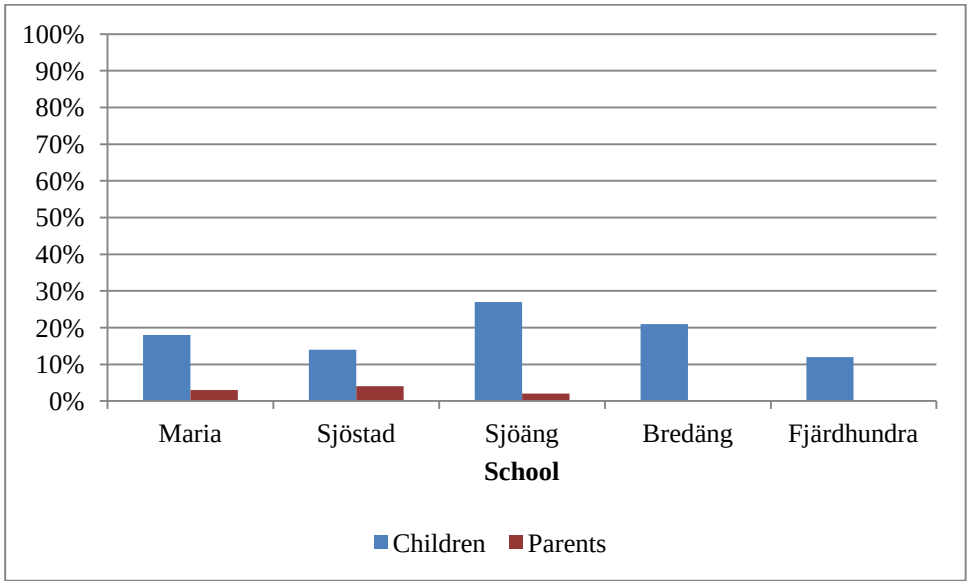

Figure 58b Car travel to school by parents, compared to children, aged 8-9

Differences in car travel to school are considerable in all areas but especially among the children in Sjööng School.

How far did the parents have to travel to school compared with their children?

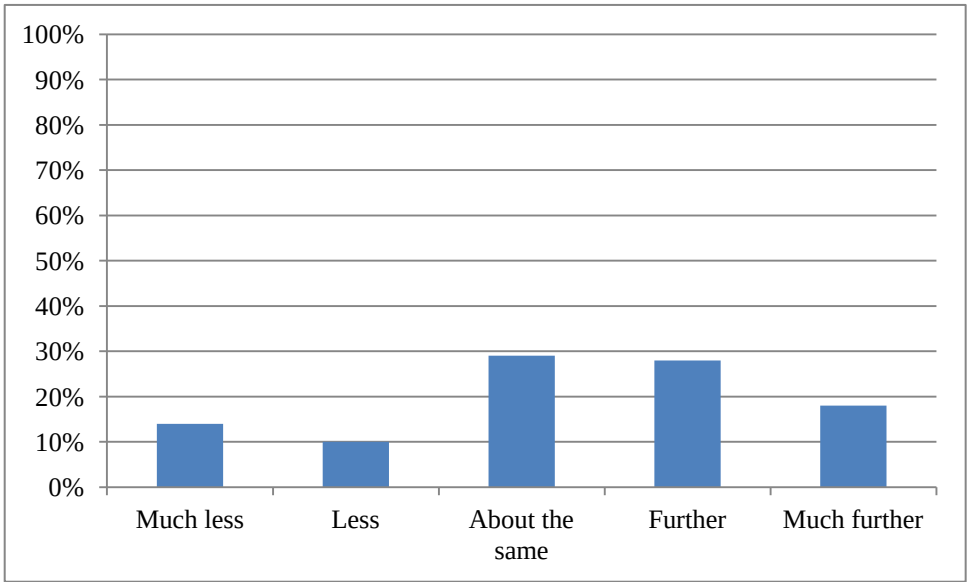

Figure 59 Distance to school for the parents compared to their own children

Around a quarter of the parents had a shorter distance to travel to school than their children and around half the parents had a longer distance.

What were the variations among the different areas? Which parents had further to travel than their children?

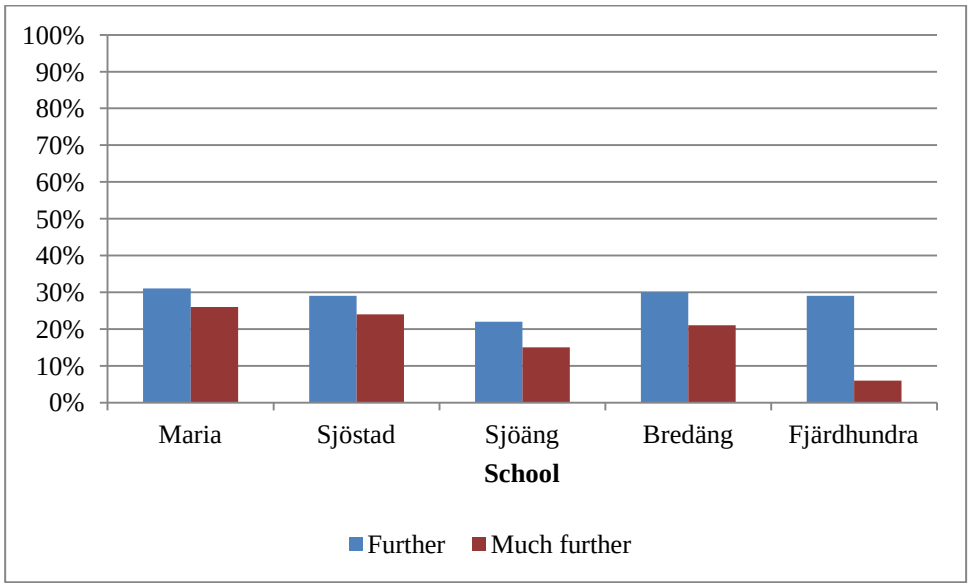

Figure 60 **Parents with a greater distance to school compared with their own children's distance to school**

It was principally the parents of children in inner-city *Maria* and *Sjöstad* who had much further to travel to school when they were children. The fewest parents who had much further to travel as children were in rural *Fjärdhundra.*

In *summary*, the children's parents walked to school to a greater extent and went by car to a lesser extent than their children do. Half the parents had further to travel to school when they themselves were children and a quarter had less far to travel. It was especially the parents of children in *Fjärdhundra* who had the shorter journey.

Summary and comments on the Swedish 2010 surveys

This section gives a summary of, and commentary on, the results from questionnaire studies of parents and their children aged 8-15. Interviews with teachers and school principals are recorded in order to cast further light on children’s independent mobility.

Licences of independent mobility

In this study, in which children and their parents answered a questionnaire about licenses of independent mobility, clear age differences are apparent. Licence to go home from school alone, to go to other places within walking distance, to go out after dark, to cross busy roads and to use public transport, all increase with the child's age. Most children are allowed to do these things from around the age of eleven. However, this is not the case when it comes to cycling on busy roads, where the majority of children are not allowed to do so until the age of thirteen. Among the children themselves, half think they are allowed to do so at the age of ten. The reason the children overestimate this parental licence may be that they understand “busy roads” differently from the parents.

Licence to cycle to friends' homes and other activities also increases with age: according to the children themselves; two-thirds of them are allowed to do these things at the age of eight and 86 per cent at the age of eleven. This is a higher proportion than those who are allowed to cycle on busy roads – again according to the children themselves.

There are no great differences between boys and girls with regard to parents' licences of independent mobility. Girls have somewhat more licence to cross busy roads on their own, while boys overestimate this licence. Boys have somewhat more licence to go out after dark and younger boys to cycle on busy roads.

The journey to and from school

A distinction has been drawn between primary and secondary schoolchildren. In Sweden this corresponds to the distinction between children in Year Zero (6 years old) to Year Five (11 years old), and children in Year Six (12 years old) to Year Nine (15 years old). This study includes only children from Year Two (8 years old) to Year Nine.

The most common ways of travelling to school, according to the *parents*, are either on foot (64 per cent) or on the (school) bus (19 per cent). A greater number of younger children walk (73 per cent) or go by car (6 per cent) compared with older children (55 per cent and 3 per cent respectively). More parents of older children have two or more cars but more younger children are driven to school.

There is a difference between what parents understand as the usual mode of transport to school and the mode used by children ”today”. Fewer children walked to school ”today” and more – particularly among the younger children – went by car. This implies that the children are not always driven to school and they do not need to be driven to school. This is apparent in the difference between the children who travelled to school by car “today” and those who will return by another means. The correspondence between how the children go to school and how they return home is considerable except for those children who travel to school by car. Almost half (45 per cent) of these children will ”walk home today,” a fifth will take the bus or other public transport and only around a quarter will also return home by car.

More than half the children wished to walk or cycle to school – most among primary school children. However, more than half the children would prefer another mode of transport to the one they came to school by ”today”. Around half the children walked to school ”today” and just over a third gave this as their preferred option. On the other hand, one in five children said they would prefer to cycle but only five per cent actually did so. The teachers also believed that cycling had decreased. In the schools under investigation there is no age limit for cycling. The teachers thought that, for example in multi-occupancy buildings, the bicycle may be kept in the basement and it may be time-consuming to fetch it; the child may also be worried that the bike could be damaged or destroyed. The schools have cycle racks but not all of them have protection from the rain.

The children who travelled by car were the least satisfied with their mode of transport: 30 per cent prefer it but almost just as many would prefer to cycle and one in five would prefer to walk. This may also point to the fact that the children would have liked the school to be situated within walking or cycling distance. Most of the children, except for those in traffic-separated *Bredäng* and rural *Fjärdhundra* (where many children take the school bus), have to cross a good many roads in order to get to school.

In interviews with teachers it appeared there is a problem with children being driven to school. This is especially so in *Sjööäng* School, which has a large catchment area. The school has around 600 pupils. Current studies indicate that 11 per cent of all pupils in the school were driven to school "today" (20 per cent of primary school children). This means there are around 60 cars coming to the school in the mornings, which causes chaos when there is insufficient room for the cars to pull in. The teachers in this school believe parents feel it is safer to drive their children. The children who live far away must cross several roads and even if there is a footbridge the children will want to go the shortest route, in other words across the road. But several of the teachers who were interviewed also thought that children walk less far on their own today than in the 1970s, when they could walk several kilometres. In addition, they thought there are some children who could walk rather than be driven. The reason they were driven was thought to be that the parents drive their children when they themselves are on their way to work and they want to make sure their children get to school on time. Only a small percentage of parents were driven to school when they themselves were aged 8-9.

Most children walk to school alone or with a friend. More older (57 per cent) than younger (27 per cent) children walk to school alone. Around a third of primary school children are accompanied to school by an adult compared with just a few per cent of secondary school children. The younger children usually walk with a parent or are driven to school, while the older children travel by car or public transport where there are accompanying adults.

Two-thirds of the children get to school within 15 minutes. The children who walk or travel by car have the shortest journey time, while those who take the (school) bus or other public transport spend longer getting to school.

Around 20 per cent of the parents chose a different school to the one they were assigned. The mode of transport for those children whose parents chose a different school varies insofar as fewer of these children walk to school and more use public transport, resulting in a longer journey time.

Non-school travel and activities

At weekends children spend time with friends either indoors or outdoors, without an adult. The majority of children are accompanied by an adult when they go to the shops, visit relatives or other adults, or go to a café or church or the woods. Somewhat more boys than girls said they meet friends, walk or cycle about, take part in sporting or leisure activities and visit play areas. Girls more often go shopping, which usually happens with parents or other adults.

Half the children are not accompanied by an adult when they visit friends or go to other activities. The rest of the children are accompanied by an adult on approximately three round trips a week. 30 per cent of primary school children are usually accompanied by an adult to places within walking distance, compared to just a few per cent of secondary school children. But this figure varies for a third of all children. The most common mode of transport used by parents when they accompany their children to places other than school is by car.

A competing demand on the time spent by children outdoors is computer and TV use. Children – particularly older children – spend a lot of time indoors in front of the computer or TV. According to the children themselves, a third of boys and a quarter of girls are high users

– that is, more than three hours a day. The parents underestimate the time spent by their children in front of the computer TV – most of all those with children who are high users.

Perception of safety and the local neighbourhood

Almost all children (93 per cent) feel very safe or fairly safe when they are outdoors in their local neighbourhood without an adult, and only a few (2 per cent) say they are not allowed outdoors on their own More secondary school children stated that they feel very safe, and more boys than girls. Few children are worried about traffic compared to those who are worried about strangers – 40 per cent of the younger children express anxiety about strangers and a quarter of older children. Boys are less worried than girls. Three-quarters of the older boys and half the younger boys are not worried at all. The younger girls are more worried about getting lost, bullying and traffic, compared with the younger boys. These are things that few older children, girls or boys, are worried about.

The interviewed teachers confirmed that the children are worried about strangers but not about traffic. In the inner-city area *Maria* it sometimes happens that a group of youngsters sit in the school playground and drink beer, and homeless people sometimes hang out there too. There are no locked doors in any of the schools except during the evenings.

The parents are worried about traffic. Nearly one in five parents is very worried that their child might have an accident when crossing a busy road. Parents of younger children are more worried than parents of older children. A quarter of parents with primary school children are very worried and nearly 40 per cent are quite worried. (Around 60 per cent of the primary school children are allowed to cross busy roads). Boys, especially the younger ones, appear to overestimate this licence more than girls. More parents of young boys are very worried, compared with parents of young girls. Few parents are not worried at all. Traffic is also the main reason for parents collecting or having previously collected their children from school.

In the inner-city schools *Maria* and *Sjöstad* the teachers also confirmed that the traffic around the school is chaotic. This is particularly the case in the new-build area Sjöstad, where buses, cars and trolley buses use the street outside the school. Especially in the mornings when the children are starting school, there is heavy through-traffic and queues.

The impact of areal characteristics

The schools were chosen on account of their different characters, social as well as physical, and this is reflected in the nature of the children's independent mobility. *Maria* School is situated in a typical inner-city area and *Sjöstad* School in a new-build area of urban character lying immediately adjacent to the inner-city itself. *Sjööäng* School consists mostly of detached dwellings with light through-traffic and is surrounded by larger roads. *Bredäng* is an area from the 1960-70s with multi-storey dwellings and traffic separation, inhabited mainly by immigrants. Rural *Fjärdhundra* in the municipality of Enköping, 90 kilometres from Stockholm, is a small community, but the school has a large catchment area from different villages and small towns (see section *The areas surveyed*).

Attitudes towards *good play environments* for children vary between the different areas and reflect each area's unique character. For example, although most adults consider it very important for children to be able to play independently outdoors, fewer parents in the inner-city areas considered it to be so. It was the parents in rural Fjärdhundra – a sparsely-populated area – who considered it to be most important. Most of these families have access to a garden, green spaces and wooded areas. On the other hand, fewer of these parents thought proximity

to friends was very important, which was also the case for these country-dwelling children. Around half of these parents, and a similar number in Bredäng, consider that proximity to large green spaces is very important – something given less emphasis by the parents in the inner-city area around Maria School. In Bredäng there are plenty of play parks that children can reach without having to cross main roads. Half the parents in Bredäng considered that proximity to play parks was very important compared to around one in ten parents in Fjärdhundra. Fewer parents in Fjärdhundra also consider it very important to prioritize cycle paths over road building. People in this rural area are car-dependent and most families have two or more cars.

The children in traffic-separated Bredäng have more limited *licences of independent mobility* than children in the other areas. Fewer of these children are allowed to cross busy roads on their own, to go on their own to places other than school, to go outside after dark, to travel home from school without an adult, to cycle on busy roads or to use public transport – although the responses of these children, as for all the children, show that they overestimate this licence. On the other hand more younger children in this area, and likewise in rural Fjärdhundra, stated that they cycle more than three times a week – 57 per cent of primary school children in Fjärdhundra and 40 per cent in Bredäng compared to just 6 percent in inner-city Maria.

The younger children in inner-city Maria also have a more limited licence of independent mobility. This is principally in relation to going on their own to places other than school, walking home from school alone, cycling on busy roads and cycling to friends and other activities. This inner-city area is characterized by heavy traffic. The principal reason why parents here collect, or have collected, their children from school is – as in the other Stockholm areas – anxiety about traffic and concern that their child is, or was, too small.

Even though the children from Maria School and Bredäng School have limited licences of independent mobility, it is principally these children who *walked to school ”today”*. These are also the areas where the greatest numbers of families are without access to a car.

Three-quarters of the children in Fjärdhundra School, and a third of the children in Sjöäng School, travel to school by *public transport or by car*, compared to approximately a quarter of the children in the other areas. In all the areas except Bredäng fewer older children walk to school compared with younger children. *Cycling* – at least during September/October – is uncommon in all areas.

Although the parents in traffic-separated Bredäng place most restrictions on children's independent mobility, nevertheless the majority of these children get to school unaccompanied by an adult – the same is true for the children in Fjärdhundra School. In the latter case this is because most children there take the school bus. According to the teacher interviewed, they may have an hour's bus journey. Of the primary school children in Bredäng and Fjärdhundra, 80 per cent *got to school unaccompanied by an adult* ”today”. In Sjöstad and Sjöäng the figure was around 60 per cent and in Maria, where the school is situated next to a busy road, around 50 per cent.

The extent to which children feel very *safe in their local neighbourhood* also varies between the different areas. Two-thirds of children in the new-build inner-city area around Sjöstad School and the rural area around Fjärdhundra School feel very safe, compared to roughly half the children in the inner-city area around Maria School and the multi-ethnic suburb Bredäng.

What are children worried about when they are outdoors on their own or with friends? They are not worried about traffic but a third of them are worried about strangers. Anxiety about this is greatest in Bredäng and the inner-city area around Maria School.

Both parents and children in Bredäng are more worried about the danger from adults than from traffic. This was not the case, however, with regard to the parents' anxiety when their children cross a busy road. More than half the parents here stated that they are very worried in this respect, compared to only around 15 per cent in the other areas. The reason for this may be that in traffic-separated Bredäng the children do not need to cross busy roads, while the roads that surround the area are very busy. A further reason may be that parents in the other areas have got used to traffic and accepted it. In interviews with teachers in the non-traffic-separated inner-city areas it became apparent that these children have different habits and want to be able to cope with traffic. The children are allowed to accustom themselves to traffic already from pre-school age. The teachers maintained that it is important not to over-protect children; rather, they themselves must check whether the traffic lights are green. “Children think nothing will happen to them if they're being helped the whole time. We say that no-one else is keeping an eye on you.”

In Sjöäng School, which consists largely of single-family housing with relatively light traffic, the teachers said that children who grow up in town are better-equipped in traffic because “there it's a steady stream of traffic, whereas here you get a car coming every now and then and so it's a surprise.”

A Swedish-born teacher who lives with her child of school age in traffic-separated Bredäng was very satisfied with the traffic separation there. There are tunnels so one doesn't need to cross roads. But unfortunately the area is not functionally separated, so the tunnels can entail detours with the consequence that children prefer to cross a road with heavy traffic. This particular teacher was completely opposed to the idea of accustoming children to traffic: “you can get run over, can't you?”

The parents' main reason for collecting their children from school was anxiety about traffic – this was the case in all the areas except for traffic-separated Bredäng. Nearly half the parents gave their reason for collecting their children as danger from other adults. In Fjärdhundra, where more than half the children took the school bus to school, one in five of their parents gave as their reason that the school was situated too far away.

The parents in Bredäng appear, though, to be more over-protective than parents in other areas, perhaps because people here are more worried about personal safety. This was confirmed in the interview with a teacher who considered that many immigrant parents feel greater anxiety than Swedish parents. There are twenty nationalities represented in Bredäng School. The teacher described the children as “very ambitious and the parents want what's best for their child”. The parents often live in overcrowded conditions and many work in the taxi business and healthcare. According to the teacher, Swedish families do not seek to apply to Bredäng School; rather, it is immigrants who live in even more densely concentrated immigrant areas south of Stockholm inner city. She also considered that parents in general are more anxious today than previously. “Many people don't like to be outdoors after dark around here. You read something and get scared.” A greater number of the Bredäng children spend more than three hours a day in front of the computer or TV – half the children gave this response, while

significantly fewer parents did so. This under-estimation on the parents' part holds true in all areas.

Rural Fjärdhundra has the greatest number of children who are allowed to be outdoors after dark – more than half of primary school children and nearly all secondary school children. Only two per cent of the parents gave “danger from adults” as a reason for collecting, or having collected, their children from school, although a quarter of the children gave this response – nonetheless a lower figure than in the other areas. The sense of personal safety among parents of children in Fjärdhundra School is greater than in other areas. The head teacher of the school reported in an interview that few parents are unemployed. “But there are too few immigrant pupils – sadly. We need a more multicultural school!”

To summarize:

- Licences to independent mobility increase with age
- More than half the children walk to school, a few cycle
- More children were driven to school ”today” than stated by parents when naming the usual mode of transport
- Half the children who were driven to school “today” walk home, one in five takes the (school) bus
- More than half the children wish to walk or cycle to school – most among primary school children
- Around a third of the children who are driven to school are happy with the arrangement – 30 per cent would rather cycle, 20 per cent would rather walk
- A third of primary school children, but few secondary school children, are accompanied to school by an adult
- Two-thirds of the children get to school within 15 minutes
- A third of boys and a quarter of girls spend more than three hours a day in front of the computer or TV – parents underestimate these figures
- Almost all children feel safe when outdoors in their own neighbourhood without an adult. Few children are worried about traffic, more about strangers
- Parents are worried about traffic – the main reason they collect their children from school
- Attitudes towards good play environments for children reflect each area's unique character
- Both parents and children in traffic-separated and multi-ethnic Bredäng are more worried about the danger from adults than from traffic
- The younger children in inner-city Maria also have more limited licences of independent mobility, owing to traffic dangers
- Among primary school children in traffic-separated Bredäng 80 per cent went to school unaccompanied by an adult ”today” and in inner-city Maria around 50 per cent

Discussion and conclusions

In this section the results from the questionnaire studies of children and parents are discussed. Current studies are related to earlier studies from Sweden. The results are placed in the context of theoretical concepts within developmental- and environmental psychology.

Environmental psychology offers – as do modern theories of developmental psychology – an interactive/transactional perspective on the interaction between individuals and their environments, stressing the dynamic character of this exchange. The individual is both subject and object – a producer of society and simultaneously a product of it. In other words, children are affected by and influence their environment and thereby become active participants in society. The legal instruments today to strengthen the active role of children in society (e.g. children's participation) are the UN Convention of Children's Rights (UNCRC) and Agenda 21.

Moreover, it is not only the children's immediate environments that are significant for their development but also those surroundings and more peripheral environments with which they have no direct contact, as for example different municipal conditions, the parents' employment situations, social networks, media as well as different ideological, political and economic values and relationships existing in a given culture or subculture (Bronfenbrenner, 1979).

One example of the media's effect on children's independent mobility is the concept of stranger danger. In recent decades the media has related extensively how children have been molested by adults. Notwithstanding the fact that this happens most often within families, the fear of strangers has increased among both children and adults when children are outdoors. In earlier studies where children were interviewed about their outdoor activities (Björklid, 1994, 2001), the children seldom mentioned stranger danger but rather the fear of traffic. In current studies it is usually stranger danger rather than traffic that worries children.

The ecological approaches in psychology treat the environment both as objective phenomenon and subjective constructions (cf. Bonnes and Secchiaroli, 1995: Bronfenbrenner 1979). In the study of environments, then, it is not only objective factors or relationships that are relevant but also how these are interpreted by the individual. Thus, children and adults experience traffic from quite different viewpoints. Children understand complex traffic situations and react to them in different ways to adults. In our current studies the children are not anxious about traffic, though their parents are. Traffic is the principal reason why the children are collected from school, and one in five parents is very worried that their child might have an accident when crossing a busy road. The parental licences do not always correspond with the children's understanding of these licences.

Research into children and traffic has often been restricted to the risk factors relating to accidents and injuries. Safety is one aspect of children's outdoor and traffic environment, but other important aspects include the environment's significance for children's health and for their physical and social development. Understood from a holistic perspective, it is all these factors together which create and shape the developmental environment of children. That the environment should be safe and free from accident risks is of course obvious and necessary – but it is far from enough. However, a shift in emphasis has occurred, both within Sweden and internationally, towards research with a more environmental-psychological slant in which

greater stress is placed on the opportunities for changing the environment, in other words research which studies children's physical surroundings as developmental environments.

Children’s outdoor environment – a developmental environment

Most children today live in big cities and in urban regions. Since 2005 Sweden has been the EU-country with the greatest increase in the size of its cities. Big cities are the driving forces for economic and social dynamic development but at the same time they create environmental problems because of intensified energy consumption, pollution, traffic, heavy infrastructure and overcrowding. One serious consequence of this ongoing urban development for children is the restricted access to space (cf. Hörschelmann and van Blerk, 2012). Children prefer to play close to their home, in their own local environment. But they also want access to the whole urban environment with all the variety that exists there and not just designated play areas. Children want to play a part in society and not be shut off from adult life (Björklid, 2010).

Opportunities for children to use and appropriate their physical surroundings have long-term consequences for them, since it is here that they learn about the environment, themselves, their social attachments and society. In many senses and for many years during childhood, children are dependent on the environment as well as on their parents and families. When this dependence can be articulated by children themselves, they have an opportunity to communicate their experiences and knowledge, and to be heard as children, with a right to a voice of their own.

Children develop by playing and exploring in their local environment.

Children's need for out-door play is well documented (cf. Spencer and Blades, 2006). Children develop by acquiring knowledge. They acquire this knowledge, in part, by independently exploring their own neighbourhood and by means of play. In their play, children are able to command the surrounding world according to their own desires and needs. In other words, the outdoor environment is a constant source of environmental learning. Play is pleasure-seeking. Play is also a *challenge* - a feeling of being master of one's environment, both physically and mentally. But a challenge is not the same thing as *realistic danger*. Traffic in children's local environment implies uncalculated risks. The traffic environment is created by adults in order to increase their mobility. For children traffic is a complicated, ever-changing environment which often infringes upon their territory. The demand for space for traffic is in competition with children's play areas and school- and leisure-routes.

Through play children also learn how to cooperate, to develop the emotions of care and tenderness, and to give vent to and control their aggressions. The right to play and the right to a stimulating, developmentally appropriate environment have been oriented for years in the UNCRC.

How are children playing outdoors? Very shortly one can answer the question with: Children play everywhere, regardless of whether the space in question has been designed for play or not. Even, for example, walking or cycling to school involves a certain play-element. Paths should therefore be designed so as to encourage exploratory activity and to increase home-range while of course not neglecting safety requirements. Children are naturally playful and carry this playfulness with them even in traffic.

In one interview study (Björklid, 1994) of children and their school routes an 8 year old-boy responded as follows:

> If you run to school it takes five minutes, but if you take it easy and look around you and find rubber bands and so on, then it takes fifteen minutes.

And a girl, 8 years old:

> I walk with a friend. We usually dream about what we'd like to do. You forget about everything then – even the traffic.

But not all children walk or cycle to school without adult company. Around 60 per cent of primary school children in our current studies walked to school “today” – around half of these were accompanied by an adult.

Increased traffic and the expansion of the road system have led to relentless competition with children's play areas and the roads they take to school and use in their leisure time. By planning for motoring and motorists, society forces children to take risks which their parents worry over – a conflict which they are obliged to live with and which becomes a part of their daily lives.

An extended concept of risk

As mentioned earlier, the design of the future built environment should not be determined exclusively by the desire to minimize accident risks. This is self-evident but certainly not a sufficient motivation. Outdoor environments must also add to the quality of life in the broad sense of the word, by being safe, healthy and stimulating for children's development

Measuring road safety simply by accident statistics does not provide a reliable picture. Another measure of how accessible or dangerous a road is, can be provided by the number of children who can walk to school unaccompanied or how well one knows the neighbours across the street (Hillman, Adams, Whitelegg, 1990).

The risk-concept also includes health problems on account of emissions and noise etc. Air pollutants from traffic, damage children's lungs for life, even at relatively low levels. Clear links have been found between asthma and increased air pollution. Road traffic is the main source of the dangerous substances and the damage they cause is not one that vanishes or diminishes with age (Bellander, 2006). This is also something that affects children – for example the fear of getting asthma when emission levels are high (Björklid 1994). In current studies 90 per cent of parents considered it was important for children to live somewhere with clean air, 75 per cent that it should be free of noise pollution and 70 per cent that there should be little or no traffic. Evidently parents place greater importance on clean air than on traffic reduction.

Physical activity

It is especially important to pay attention to children's need of physical activity. The Swedish National Institute of Public Health (2011) considers that children should be physically active for at least one hour a day. In childhood the habits of physical activity are established that set a template for the rest of one's life. Reports show that children’s health deteriorates, they become overweight and they move around too little. The reduction in physical activity among

children risks leading to an increase in for example type-2 diabetes, brittle bones, obesity and depression (Faskunger, 2008).

The responsibility is often placed on children themselves, with the implication that it is children who should adapt. The most important resource, however, is what the outdoor environment in the children's neighbourhoods and in other public spaces can offer.

The outdoor environment is one of children's developmental environments – an informal learning environment. Playing hide-and-seek or skipping rope, hanging and climbing, kicking a ball, building and constructing, or just riding around on a bike or skateboarding or roller-skating – these are excellent ways for children to explore their surroundings and learn how things work. Especially outdoors, children's play and movement are so interconnected that one may say that every movement is play and all play is movement.

Physical activity provides protection against a number of common illnesses. Low- or medium-intensity physical activity that children themselves can control is most meaningful when it has the greatest chance of being lasting. Spontaneous physical activity reduces both the number of injuries and the risk of stress. Children move about almost continuously and in this way improve their muscle strength, coordination, balance and speed. Moreover, movement is important not only for children's physical development but also for their social and personal development.

It is principally computer usage that competes for children's time with outdoor activities. Sweden is the country with the highest broadband coverage within the EU. Computer usage has increased markedly within the last decade. Children aged 11-15 play computer games for 1-2 hours a day on average, with 28 per cent playing for three hours or more (The Swedish Media Council, 2010).

In our current studies we found that parents underestimated the time spent by children in front of the TV or computer. According to the parents, only one in ten children fell into the highest category of use – that is, more than three hours a day – whereas according to the children themselves this figure was one in three.

In former times children spent the greater part of their leisure time outdoors in spontaneous play and other activities. Studies from the 1960s (Sandels, 1975) show that children under two years of age spent an average of two hours outdoors during the spring; children aged 2-4 spent four hours; and children aged 4-8 spent six hours. 80 per cent of the pre-school children (aged 2-6) were outside on their own or together with friends of the same age. The children who were together with adults were those under two years of age. In more than a quarter of cases children aged 3-4 were observed in dangerous traffic locations such as roadways, pavements and parking places. They mostly played alone outdoors while being supervised by their mothers from windows or balconies. 5- and 6-year-olds were supervised less and half of them were observed in dangerous traffic location. Studies from the 1970s show that children in the age range 4-12 spent 3-5 hours a day outdoors and 75 per cent of children aged 4-6 played outdoors alone in their residential neighbourhood (Björklid 1982). Back then childcare facilities were less well-established than today. Virtually all pre-school children today attend a nursery or pre-school.

The number of children injured or killed in traffic accidents has decreased dramatically since the 1960s. There are several reasons for this:

- Increased childcare facilities
- Parents' risk awareness. Young children are not left unsupervised
- Traffic measures in the form of speed limit reductions, footpaths and cycle paths
- Lorries no longer delivering goods in the courtyards
- Children spending time at the TV or computer
  (Swedish Transport Administration, 2012b)

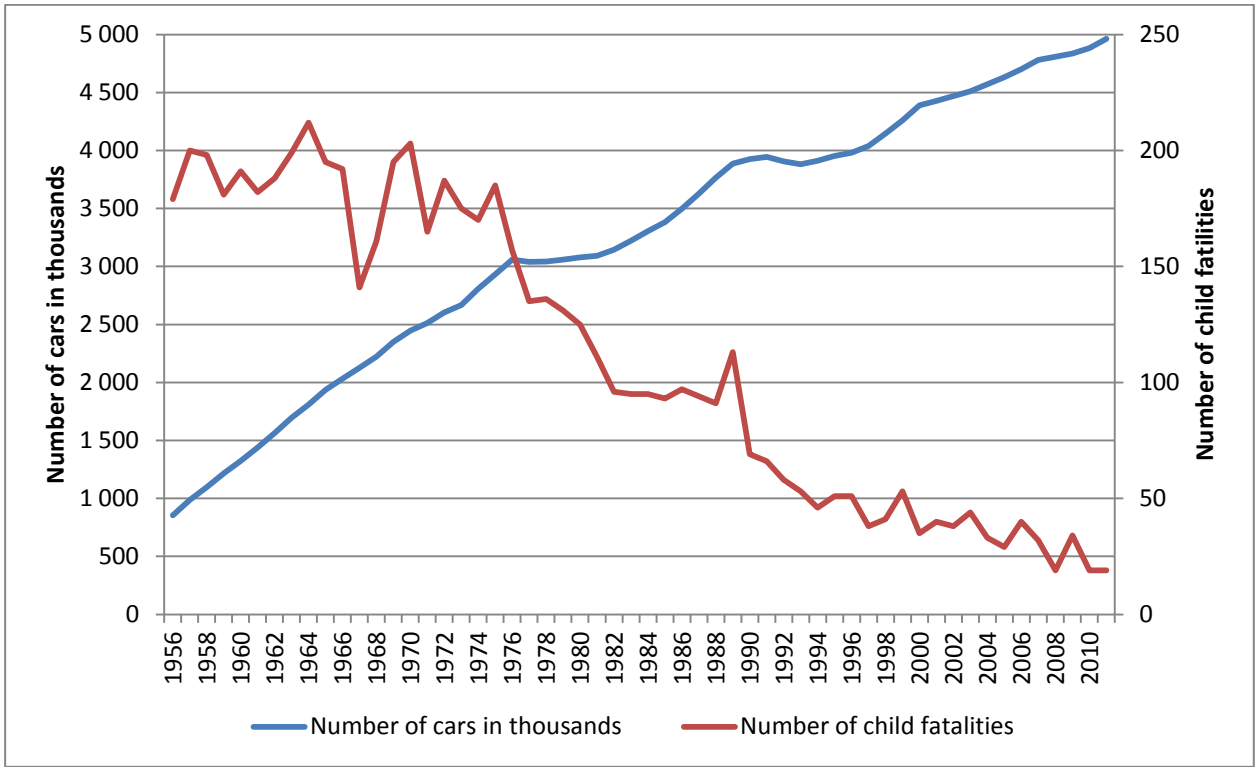

Figure 61 **Number of cars and number of child fatalities in traffic between 1956-2010**

The importance of friends

Play and recreation requires not only a place where this can take place but also the opportunity to take part in it with others. Meeting places must also be accessible. Cele (2006) shows in a study that 12-year-old children in suburban areas spent more time outdoors on their own and were more familiar with the area compared to inner-city children. Moreover, there was no need to decide in advance where they should meet; rather, there were meeting places where one spontaneously bumped into other children. One of the conclusions of earlier studies (Björklid, 1982) was the recommendation that one should plan for meeting places which happens in play parks with play-leaders. These staffed play areas were unique to Sweden in that they occurred both in residential areas and in school playgrounds. The results showed that this initiative was very important both for encouraging variety in play and for encouraging boys and girls of different ages to play together. Staffed play parks still exist today but in significantly smaller numbers than before. They can also encourage adult activities and thereby strengthen a neighbourhood's social network.

In current studies most children (80 per cent), according to their own testimony, were allowed to cycle to friends and other activities. Fewer children were allowed to do this in the inner-

city area Maria. We also found that, according to the parents, only around a third (30 per cent) of primary school children usually walked unaccompanied to places other than school when these were within walking distance. This figure varied between the different areas, from just 16 per cent of primary school children in the inner city area Maria compared to almost half (48 per cent) of primary school children in rural Fjärdhundra. It is important that not only school routes are made safe but also children's leisure routes, for example to friends and other activities.

Environmental psychology – an interdisciplinary field of research

It is principally within the research area of environmental psychology that children's interaction with the physical environment, especially the outdoor environment, has been studied. Environmental Psychology/Environmental Social Science is an interdisciplinary field of research which emphasizes the cultural, social and societal importance of the physical environment for children's learning and development (cf. Bonnes and Secchiaroli, 1995).

Environmental psychology begins from an interactional perspective. Interaction is regarded as a dynamic exchange between the individual and the environment, in which people both affect and are affected by their environment. People find themselves in a state of dialectical tension with their environment. The individual develops by seeking out experiences and knowledge of the environment, social as well as physical. They explore it, test it and alter it. At the same time the environment directly affects the individual by setting conditions and boundaries for individual action. This effect varies in accordance with the individual's own qualities. The environment is not experienced in the same way by everyone, rather each of us “constructs” our own surrounding world.

Originally environmental psychologists had more of a pragmatic than a theoretical base. Above all they tried to identify practical solutions for planners and architects. Today there is also theory- and concept-development with the aid of psychological concepts that have been linked to physical environmental factors.

Environmental stress

Stress is produced by an inadequate fit between what people need and are capable of and what the environment allows and requires (Selye 1956/1976). Environmental stress is a process whereby physical conditions in the environment threaten an individual's well-being and cause a stress reaction. Within environmental psychology emphasis has been placed on the interactional view of stress (Veitch and Arkkelin, 1995). This entails an interplay between environmental conditions and the individual ability to deal with stress, and is a rapidly and urgently expanding area within environmental psychology.

The rapid growth of an urban society has brought with it numerous associated factors that people must adapt to. How environmental stress presents itself and how people deal with stressful physical environments are important areas of research within environmental psychology. *Traffic-environment stress* may be defined as stress caused by factors in the traffic environment that produce stress reactions (Björklid, 1997).

The results from questionnaire studies (Björklid, 2002, 2004) found differences in levels of anxiety between parents in districts with traffic and those in traffic-separated areas. The parental anxiety related to a lack of care on the part of both children and drivers. The parents

considered that the best outdoor environment for children was a traffic-free one. They were aware of those places where traffic dangers existed and wished to make changes to the environment, but did not know how to go about this and had no previous experience in this respect. A number felt demoralized on account of the authorities' lack of action. It should be pointed out that the parents' risk perception is not an hysterical over-reaction but a reasonable response to what is happening on neighbourhood roads. The children live dangerously and the parents are worried. This creates a conflict which parents in areas with traffic are forced to live with and which becomes a part of their daily lives.

Different types of reaction can occur, from attempts to change the traffic environment to individual responses in the form of decisions to drive their children or to let them stay indoors or to move out of the area. Stress that leads to constructive responses can be good for the development of children and their competences – e.g. attempts to improve the traffic environment. Stress reactions that mean children are over-protected or their independent mobility is restricted can obviously entail that their exposure to health risks and accident risks is reduced – which is a positive thing from a safety point of view – but the same measures can have an inhibiting effect on their physical, social and psychological development. Stress that neither children nor adults can find an adequate response to, can lead to destructiveness and high-level tension or can be turned inwards to become passivity and learned helplessness.

One of the central dimensions of our previous projects has been an emphasis, within the context of children's upbringing, on the *anxiety and fear* resulting from steadily increasing traffic (Björklid, 1997, 2002, 2004, 2010). By planning for motoring and motorists, society forces children to take risks which their parents worry over - a conflict which they are obliged to live with and which becomes a part of their daily lives.

In an interview study (Björklid, 1994) of around a hundred schoolchildren (aged 8, 11 and 14), approximately half stated that they were afraid of cars or traffic. Children in traffic-integrated areas experienced the traffic environment as more dangerous than those in traffic-separated areas. The fear and anxiety was due to environmental factors. First of all, rules are not followed. The children gave examples of motorists who drove through red lights, cyclists and moped riders who drove in pedestrianized areas, and drivers who drove into residential play areas. Secondly, the children became anxious when their view was obstructed, for example because snow had not been cleared properly or hedges not trimmed properly. Noise and exhaust emissions were a third source of fear and anxiety. Finally, having been involved in a road accident or near-accident also caused anxiety.

Children tend to blame themselves, a tendency which fits in with their natural attitude to authority. When the children spoke about accidents or near-accidents involving themselves or others, they repeatedly stressed that it was their own fault and that "you only have yourself to blame". As a result the children were unwilling to talk about these incidents to their parents, who consequently were unaware of certain hidden traffic dangers.

> When I was five and was cycling, a man nearly drove into me because I wasn't paying attention. Really it was him that didn't see me, but I didn't see him either. I was just going to cycle across the road and up onto the pavement – there were cars parked there. I didn't dare tell my dad about it. (Boy aged 8)

Parents experience anxiety for their children in traffic environments – an anxiety and stress which becomes a part of their daily life and which they are forced to deal with and live with. This anxiety and fear relates not only to the risk of physical accidents but also to air emissions, noise pollution, the delimiting of children's outdoor environments, restrictions on their mobility, isolation from other children and adults, the increased need for parental supervision and control, and so on.

Parents impose limits on children's mobility. Such measures are critical for the development of children's spatial awareness and spatial activity since parental restrictions are highly significant in determining how children make use of their surroundings (Torell, 1990). It also has implications for the ability of the environment to promote proper social and physical development in children. Parents are torn between protecting their children from traffic and giving them the freedom to explore their local environment on their own, to engage in stimulating environmental experiences and thus to develop. In parental questionnaire studies in four districts in Stockholm and suburbs (Björklid, 1997), one in three parents felt that they themselves as children had greater opportunities for getting to places and friends. A similar proportion also felt it was safer in the past with regard to both traffic and other dangers.

This is confirmed by the aforementioned studies. The questionnaires uptake was 85 per cent (Spolander, 1981), 71 per cent (Swedish Road Administration, 2009) and 62 per cent (Swedish Transport Administration 2012). Parents' assessment of how safe the roads are for children walking to different destinations has changed since the 1980s, with fewer parents today who consider these roads to be completely safe.

Table 24 Parents' evaluation of their child's traffic environment on the way to different activities

	Parents with 7-9-year-old children		
Parents consider the traffic environment is completely safe for children to walk to...	1981 N = 1485	2009 N = 558	2012 N = 577
School	22%	16%	14%
Friends	30%	13%	21%
Play areas	40%	24%	21%
Green spaces	45%	31%	35%
Sport grounds	15%	7%	8%
Shops	16%	7%	7%
Library	11%	7%	6%
Indoor swimming,/pool/bathing place	6%	3%	3%
Cinema	3%	1%	2%

There are large differences between the responses from 1981 and 2009, and fewer differences from 2009 to 2012.

In our current studies we found that half of all parents were worried that their child might be injured in a traffic accident when crossing a busy road. This was most noticeable in traffic-separated Bredäng, where over half the parents were *very* worried. More than half of these children – and naturally more younger than older children – were not allowed to cross busy roads. In the other, traffic-integrated areas, and particularly in the inner-city areas with a large number of through-roads, only around one in ten parents was very worried. Virtually all secondary school children, and more than half (around 60 per cent) of primary school children, were allowed to cross busy roads. The explanation for this may be that parents adapt to the environment in which they live. The children themselves overestimated these licences in all areas.

Recent years have seen a densification of inner-city Stockholm and its suburbs. Traffic has increased during this period as more families want to live in inner-city areas. This may have affected parents' attitudes to children's outdoor environment.

In a 1994 questionnaire study of approximately a thousand parents with 6-12-year-old children in different areas of inner-city Stockholm and its suburbs, questions were asked about the parents' attitude to children's outdoor environments. The questionnaire uptake was 73 per cent (Björklid, 1997). This was repeated in the current study.

Table 25 Parents' attitude to good outdoor environments for children

Parents of primary school children		
It's very important to live…	1994 N=687	2010 N=213
where the child can play outdoors or be outdoors on their own	80%	60%
where the child has clean air	80%	50%
close to friends	62%	48%
close to large green spaces	59%	38%
close to transport links	44%	33%
near the school	65%	30%
where there is little or no traffic	62%	25%

Although the areas were not the same, and the children's ages were slightly different (6-12 years compared to 8-11 years), we can see a clear difference here. The biggest difference between the parents' views in 1994 and 2010 is the emphasis placed on little traffic in their local environment, near to the school, having clean air and children being able to play outdoors on their own. Our current studies show that significantly more parents of children in the traffic-separated suburb consider these aspects very important, compared with parents in the inner-city area.

On the other hand, attitudes in favour of extending cycle paths seem to have increased somewhat. Another attitudinal question read: "One should use some of the money currently spent on road-building schemes to construct footpaths and cycle paths". In Spolander's (1985) study from 1981, 37 per cent of parents said they "completely agree" with this and in current studies the figure is 53 per cent among parents of primary school children. In other words, attitudes towards prioritizing footpaths and cycle paths seem to have strengthened since the 1980s. Once again it should be pointed out that the 1981 material relates to parents of 7-9-year-old children, whereas current questionnaire studies relate to parents of 8-11 year-old children.

Environmental aesthetic

Another concept within environmental psychology is environmental aesthetics. Cold et al (2001) has collected together environmental research on the subject of aesthetics and well-being. An overview of the literature shows that environmental aesthetics are an integral part of people-environment interaction. Even if at a conscious level we can accept, for example, an institutional environment or children's outdoor environment with little environmental or aesthetic value, such an environment can still make us feel uncomfortable, depressed or worthless because no one has had the will or power to care about it and therefore to care about us and our well-being and health.

In earlier studies of children's outdoor environment, the children themselves have stated how much they appreciate clean environments and are critical of graffiti and things that are broken or ugly (Björklid, 2010).

Affordance

The perceptual psychologist James Gibson (1979) has developed the concept of *affordance*. In environmental psychology this refers to the opportunities that are present in an environment and apprehended by a recipient, encompassing both environmental and individual factors and therefore being transactional. Many individual qualities, along with social and cultural rules and practices, regulate which affordances can be used and when, where and how this can happen. In addition the environment comprises both social and cultural as well as physical qualities. This means that affordances are not the same for everyone.

Many affordances exist in the outdoor physical environment in suburban *Bredäng*. The area is traffic-separated and there are plenty of green spaces and play areas. This was also something that the parents placed value on as a component of a good outdoor environment for children. More parents in this area considered it was important for children to live where there is clean air, no noise pollution and little or no traffic, and where it is close to green spaces, the school and play parks. In spite of this, factors in the social environment created problems which meant that these affordances were not always made use of.

In suburban *Bredäng*, the majority of respondents (80 per cent) agreed with the statement that “some young people and adults in the area make you afraid to let your children play outdoors”. Significantly fewer people in the other areas agreed with this statement. A similarly high proportion of parents in Bredäng did not allow their children to be outdoors after dark, especially so among parents of younger children, while significantly more parents in the other areas allowed this. In addition, the danger from other adults was the main reason that children in this area were collected from school. Furthermore, it was in this area that the greatest number of children spent more than three hours a day in front of the TV or computer. Significantly more children than adults gave this answer in all areas.

Place identity

The physical environment is important not just for reasons of development but also for how young people create an identity for themselves in relation to place. In recent decades concepts such as place-identity and place-attachment have been given prominence within environmental psychological research and concept-development (Proshansky et al, 1995; Bonnes and Secchiaroli, 1995; Twigger-Ross and Uzzel, 1996).

Individuals have an emotional attachment to special places and environments – one ascribes an identity to places. Place-identity also relates to experiences of places that are meaningful to the individual's identity. The influence of living environments in the planning process makes it possible to develop a personal identity based on one's connection to a place since childhood (Alparone and Risotto, 2001). The loading of place-identity depends on all the qualities of the physical environment including its more specific qualities such as accessible spaces, aesthetic features, lighting, air quality, noise etc. However, place-identity is not merely a function of the place's own qualities but also of what people say about the place and what they do there.

The 1960s and 1970s saw a rapid development of the suburbs in Sweden. Although the areas were traffic-separated and contained plenty of play areas, the housing consisted of large-scale

high-rise tower blocks with poor-quality, shopping centres and few employment opportunities in the area. These districts were heavily criticized and those who were able to move to other residential areas did so. Today these areas are inhabited mostly by immigrant and low-income families. On the other hand, both children and parents are happy with the traffic-separation – the children can walk unaccompanied to their schools and friends. This is not the case in the traffic-integrated areas. This is something we observed in a number of the studies we carried out. The parents in traffic-separated areas are also more positively disposed towards a car-free neighbourhood than the parents who have no experience of this (Björklid, 1997, 2004). One such area is Bredäng.

Environmental competence

Another important concept within current research is environmental competence. Characteristically, the person with good environmental competence is able to interact effectively with their surroundings and see that it makes a difference how she acts – both in the current situation and in future situations through being prepared for so-called proactive action (Fraijo-Sing et al, 2010).

Environmental competence develops through exploratory activities and interaction with the environment, maintained R.W. White as long ago as 1959. Competence consists of the abilities and skills that enable individuals to act effectively and successfully and to find solutions to genuine problems and everyday challenges. The interaction between children and their social, cultural and physical environment that takes place today will have repercussions on society in the future in terms of sustainable development. One of the requisites for children to acquire their own environmental competence is that they have the opportunity to visit and use different places on their own. Their environmental competence is facilitated partly through the affordances offered by the physical environment and partly through parental licences for, and restrictions on, their use of the local environment.

Distance and mode of transport to school

Besides the physical form of the traffic environment, there is the parents' view of its importance for children's independent mobility. What is the situation in Sweden in this regard and has there been a change over time? As mentioned previously, every three years the Swedish Road Administration has carried out questionnaire studies aimed at 2800 parents of children aged 6-15. The study from 2009 shows that nearly two-thirds (65 per cent) of children live less than two kilometres from their school.

According to the study, 15 per cent of children aged 6-15 were *driven* to school during summertime, and 21 per cent during wintertime. The most common reason given by parents for driving their children was that it was practical for the family – that is, parents were on their way to work, the child was going to after-school club, siblings were being dropped off at the same time, it felt safer or the child was too young to walk alone. One in five parents gave the reason as traffic danger. In summertime 12 per cent of the children who lived less than one kilometre from the school were driven there by parents – in the winter the figure was 22 per cent (Swedish Road Administration, 2009).

In our earlier studies (Björklid, 2002) the reason given by parents living in areas of single-family housing for driving their children to school was that there wasn’t sufficient space along the side of the road for children to walk on. The reason so many children were driven to school was that the parents used the car to drive to work or to the station. Time was short, it was slightly too far to walk, parents were driving their younger children to the day nursery or

child-minder. Parents of small children today lead busy lives in which time is limited. One of the mothers in our study explained why she drove her child to school in a speed-restricted area in the following way:

> There are two younger siblings who have to be dropped off at the same time at the day nursery near the school. It's a matter of finding a practical solution. I drive the children for reasons of safety, lack of time, and the fact that it's on my way to work (I need the car for my job).

Cycling to school is subject to seasonal variation. Twice as many children cycle to and from school during the summer half of the year (32 per cent) compared with the winter (15 per cent). The use of private cars and buses, and walking, increase during wintertime (Swedish Road Administration, 2009).

In current studies significantly fewer children (5 per cent) cycled to school. This may be a result of the time-frame (September-October) when the studies were carried out. One in five children would have liked to cycle to school. Few parents of primary school children (15 per cent) stated that their child was allowed to cycle on busy roads, whereas nearly half the children (44 per cent) stated that they had such permission; there is, however, room for different interpretations of the term "busy roads." Nearly all children possessed a bicycle, and 80 per cent of these reported that they were allowed to cycle to friends and leisure activities. Around 25 per cent of the children cycled more than three times a week, more among the primary school children than the secondary school children. This may be because the younger children use their bike not just as a means of transport but also as play equipment.

Local authorities in Sweden are responsible for arranging free *school transport* with regard to the length of the route, the traffic conditions, the functional impairment of pupils or some other special circumstance. However, this right does not apply to pupils who choose to attend another school than the one the local authority would have placed them in or who attend schools of another local authority. The Swedish Road Administration's 2009 investigation showed that 19 per cent of children aged 6-15 are entitled to school transport.

The number of children in independent schools has increased with time. In the 2001/02 school year the figure was 4,8 per cent, which had increased to 11.9 per cent in the 2010/11 school year. Around 80 per cent of pupils go to the school designated by the local authority. But the tendency of fewer children to go to the designated school means that fewer pupils are able to travel to and from school on their own.

The following table shows differences among children aged 6-15 years in the Swedish Road Administration's 2009 study.

Table 26 Children who walk and cycle to an assigned state school, other state school or independent school.

Mode of transport to school				
Season	Mode	Assigned school	Other state school	Independent school
Summer	Walk	37%	17%	25%
Summer	Cycle	33%	23%	31%
Winter	Walk	47%	22%	30%
Winter	Cycle	16%	10%	14%

As the above table shows, there is a difference in mode of transport depending on the choice of school.

Reneland (1998) used GIS methods to compare school roads in 45 Swedish towns. He found that the distance to school for 7-12-year-old schoolchildren increased between 1980 and 1995 in large towns as well as in small ones.

Our current studies show that around 80 per cent of children attend the designated school, but this varied between the different areas. In the Stockholm schools more parents had chosen another school. It was also less common there for the children to walk or cycle to school. According to parents, the most common modes of transport to the designated school were on foot (70 per cent), whereas this response was given by only around half (44 per cent) of the parents of children who did not attend the designated school.

Licence to go to different activities unaccompanied by an adult

When we compare studies from 2009 carried out by Spolander (1985), the Swedish Road Administration (2009) and the Swedish Transport Administration (2012) we see that parental licences have decreased not just with regard to walking to school unaccompanied by an adult, but also walking unaccompanied to other places such as friends' homes, play areas and green spaces, sport grounds, shops, the library, swimming baths and cinemas. Comparisons carried out in 2012 by the Swedish Transport Administration show no great differences between 2009 and 2012, except in relation to visiting green spaces on one's own, which has increased somewhat. This may be on account of the access to green spaces in the different areas investigated.

Table 27 Parental licences allowing children to go to different activities

	Parents with 7-9-year-old children		
Is the child allowed to walk unaccompanied by an adult to...	1981 N = 1485	2009 N = 558	2012 N = 577
School	94%	46%	46%
Friends	98%	63%	67%
Play areas	98%	63%	61%
Green spaces	96%	58%	67%
Sport grounds	72%	21%	24%
Shops	82%	23%	24%
Library	60%	15%	13%
Indoor swimming, pool/bathing place	36%	7%	7%
Cinema	34%	2%	3%

The differences from the 1980s may also be due to the fact that parents have become more safety-conscious. Although less than half of the 1981 parents regarded the traffic environment on the way to school, friends, play areas and green spaces as completely safe, nonetheless virtually all the children were allowed to walk to these places without an adult to accompany them. The discrepancies between safety assessments and parental licences were significantly less during the first decade of this century (see table 24).

As mentioned in the introduction, studies from the 1990s show that parental licences vary with the character of the school route and where children live. In a traffic-separated suburb 95 per cent of children aged 7-9 were allowed to get to school unaccompanied by an adult, and in an inner-city area only half the children were allowed to go unaccompanied (Björklid, 1997).

A similar proportion is found when the children themselves are questioned (Heurlin-Norinder, 1997), as in our current studies. In the inner-city area half of the primary school children travelled to school unaccompanied by an adult “today”, and in traffic-separated *Bredäng* around 80 per cent of children did this.

In current studies we found that around three quarters of primary school children (76 per cent) had permission to walk home from school alone but only around half (57 per cent) were allowed to cross busy roads and significantly fewer to cycle on busy roads (15 per cent). The children themselves overestimate these licenses, which may also be true of their understanding of “busy roads.” Another possibility is that the school route for these children was fairly safe.

The studies mentioned above also show that parental licences in relation to cycling to different areas have decreased during the last thirty years.

Table 28 Parental licences allowing children to go to different activities

Parents with 7-9-year-old children			
Is the child allowed to cycle unaccompanied by an adult to...	1981 N = 1485	2009 N = 558	2012 N = 577
School	45%	27%	33%
Friends	92%	53%	57%
Play areas	88%	54%	54%
Green spaces	87%	53%	59%
Sport grounds	58%	20%	21%
Shops	65%	16%	19%
Library	45%	12%	10%
Indoor swimming, pool/bathing place	29%	5%	6%
Cinema	19%	1%	1%

There are no great differences during the last three years. However, we can see that somewhat more children aged 7-9 are allowed to cycle to school without an adult to accompany them and this is particularly so among the 9-year-olds. In 2009, 40 per cent of parents said they allowed their 9-year-old child to cycle to school unaccompanied, whereas 55 per cent of parents gave this response in 2012.

Environmental Education

Environmental education has developed out of environmental psychology. In UK and also in Sweden work has been done with environmental education, in which children themselves study their local environment and provide information about it. The teacher's role is to act as a link between children and planners. The adults can teach the children to put their knowledge in a context and can in turn learn from the children by listening to their points of view. Children's participation in decisions about their environment is a pre-condition for their understanding of democracy as a social structure. It aids the development not only of children and young people but also of society itself, provided that children's and young people's views are respected.

Pedagogical aspects of the local environment are represented in the national curriculum by studies in the local community where children employ investigative working methods so as to utilize their rights of expression. This is directly connected to pupil participation, something stressed in both the national curriculum and the UNCRC. Learning takes place through the pupils actively participating in and trying to change their local community in different ways

that are relevant for them. The aim is to stimulate the pupils' interest and develop their ability to improve their local environment and thereby make use of their future right to civil participation. The Swedish Road Administration's *Explore and Learning in the local community* project provides examples of this. The Department of Education, Stockholm University has carried out questionnaire studies and case studies in a number of schools that took part in the project (Qvarsell, Dovelius and Eriksson, 1998). The empirical material provides examples of both pupil participation in school and children's involvement in, and opportunities for insight into, the civil decision-making process. The researchers point out that the pupils seem to have had the chance to learn the democratic process through being part of a democratic structure, through having practised their influence and participated in attempts to change the local community, instead of simply learning about democracy. According to the teachers, the project had contributed to the children's learning, partly because the children paid more attention to events in their local community, and partly because it increased their responsibility-taking and their will to become involved in decision-making. The children were received well and were treated with respect and interest, when they went out in the community. This does not necessarily imply that they succeeded in getting through their demands for changes or that the local decision-making apparatus was especially fast. Learning about traffic can mean that one faces new questions. Studies of the traffic environment, for example a particular road, raised questions about democracy. When the children discovered a danger in the traffic environment, they wanted to change it. This led to issues and information about who was responsible for the traffic environment and who made decisions about it. And this in turn could lead to questions about transport needs and accessibility from a historical perspective.

As mentioned in the introduction, as long ago as the 1960s discussions began about whether children should be trained to adapt to the traffic environment or whether it was traffic that should be adapted to suit children through different environmental measures (cf. Sandels, 1975). A comprehensive research collection (Duperrex, Roberts and Bunn, 2006) shows that no link has been found between this training of children in traffic and a reduction in the numbers of injured children.

Children's ability to cope with increased traffic has created a need for new content and methods in studies of traffic issues in school. In research, along with the Swedish Road Administration and The Swedish National Agency for Education, has stressed that traditional road-safety education aimed at behavioural training and traffic rules has a limited effect on children's road safety. Therefore the school's road-safety work should be directed towards studies in the local environment, with the aim of developing the pupils' insights into how society is constructed and how the traffic system works. The school's work with traffic, environment and social planning should principally be about giving the pupils civic and ecological understanding and knowledge of how we build a long-term sustainable transport system and society. The concept of road-safety education should therefore be replaced with studies in traffic, environment and social planning (Gummesson, 2007).

Sweden has one of the lowest child fatality rates of any country. From the 1970s onwards, it is 0-14-year-old children who have seen the greatest reduction in the numbers killed in road accidents compared with other age groups. This is a result of the active efforts made to separate children and cars. Norms were established based on research recommending that play areas should not only be accessible by footpath and cycle path but should also be situated within the neighbourhood itself. These standards are no longer present in planning law and building law.

In Odense, Denmark's third largest city, a project was carried out between 1986-1999 looking at 104 school roads and the traffic-environment measures that were subsequently taken A “before” and “after” assessment showed that the total number of accidents fell by 18 per cent and pedestrians in particular benefited, with a 58 per cent drop in the number of injuries (Jensen 2006).

In Gothenburg too, Sweden's second largest city, physical measures have been taken to reduce the speed of vehicles and separate unprotected road users from traffic. The number of cyclists injured in these places fell by 61 per cent, and the number of pedestrians injured by 37 per cent, during the period 1990-2000 (Thulin and Nilsson, 2004).

Several researchers point out that crossings with physical speed restrictions are necessary for children's safety. Vehicles should not exceed 30 km/h on crossings that are regularly used by children (Johansson, 2004). Research shows that changes to the traffic environment in the form of speed-damping environmental measures are the most effective way of preventing accidents to children as pedestrians (Gummesson, 2007 for overview).

Parents have views about the environment and want to change it so as to make it safer for children and young people. This is evident from several questionnaire studies (Björklid, 1997, 2004, 2010) where parents also made detailed suggestions about possible measures and some drew sketches. Underpasses and supervised crossing places were appreciated – but should be positioned so that they do not require a detour to use them. They should also be clean and well-lit. One problem that parents constantly returned to was high speeds and they suggested environmental measures to reduce speeds. Most parents considered that a “car-free” environment was the best for children to grow up in. In current studies it was the parents who lived in the traffic-separated area who were more positive to this idea than those who lived in the areas with traffic.

Sustainable development

With the aid of interactional/transactional concepts such as those above, environmental psychologists continue to develop theoretical tools for analysing and finding solutions to current social problems.

Children and young people provide an important way in from the point of view of sustainability. A sustainable society must offer children and young people opportunities for individual development based on influence and participation. Children not only have special needs, which are different from those of adults, but also the right to have those needs met.

Sustainable development has to a large extent dealt with environmental questions from a natural science viewpoint. Today one of the most productive principles in work on sustainable development is that economic, social and ecological processes are interconnected and should be considered from a holistic point of view. This perspective deals in particular with dilemmas, moral standpoints and social relations and the conflicts that arise from them. Conflicts related to sustainable development may be due to open conflicts of interest – for example the priority given to motor traffic over pedestrians in urban environments, with the result that the experience and enjoyment of place is impaired (Björklid, 2004). But conflicts can also arise from different ways of understanding, using and appreciating the physical environment.

This conflict perspective is obvious from the child's point of view, since their perspective is different from adults'. There is already a considerable literature that suggests that the ways in which children and young people experience and interpret space is likely to be very different from those of adults (e.g. Matthew and Tucker, 2006). Nor are children's needs and rights in the physical environment directly quantifiable, so they cannot be measured in terms of economic benefits.

A safe and developmental physical environment is a pre-requisite for the physical health and mental well-being of everyone – but it has a fundamental significance for children insofar as the physical environment creates spaces for children's development (e.g. Clark and Uzzel, 2006), their identity (cf. Twigger-Ross and Uzzel, 1996) and their integration into society (Bronfenbrenner, 1979). What places provide is not only important for the child's here-and-now but also for their long-term personal cognitive and emotional development.

What is sustainability from the viewpoint of environmental psychology and a child-centred approach? We know that children's local environment has a considerable effect on their living conditions and on how they see their environment (e.g. Spencer and Blades, 2006). This is true not least for children's independent mobility. Mobility restrictions can also affect the development of emotional bonds between children and the natural environment (Kong, 2000), and can have consequences for the child's development of spatial skills (Risotto and Giuliani, 2006) and their sense of responsibility for the environment (Palmberg and Kuru, 2000).

It is not just the physical environment that creates opportunities for, and limitations on, children's independent mobility and use of the environment. This also depends on parents' understanding, their living conditions and the restrictions they impose.

Parents' lifestyles and living conditions also affect children's independent mobility insofar as children are increasingly driven to different places and activities compared to former times (cf. also Karsten 2005). The nature of childhood has changed from one that is child-centred to one that is over-controlled and over-structured by adults (Risotto and Giuliani, 2006). Children have become increasingly dependent on adults and no longer possess the "street smarts" which previous generations of children utilized to move around and grow up in cities (Francis and Lorenzo, 2006).

Learning in sustainable development

In the year 2000 a UN declaration was made by world leaders and governments in which one of the goals is that education in sustainable development should be incorporated in all education, the so-called *Decade for Education for Sustainable Development*. The decade in question is that between 2005 and 2014.

Education around these questions aims to develop an ability to reflect and act both locally and globally while paying attention to the needs of future generations. A key strand is the idea of the individual's participation and responsibility in the local and global discourses relating to future issues. Education and learning in sustainable development aims not only to teach children about the subject but also to equip them for active citizenship within a sustainable future. One example of this is the aforementioned project *Exploring and Learning in the Local Community.*

Children's citizenship and active participation can have a number of different implications. While the UNCRC expresses a rights-perspective as an end in itself, the national curriculum

emphasizes a utilitarian aspect which connects it to the school's responsibility to encourage children's citizenship in adult life.

From the point of view of environmental and developmental psychology, sustainable development requires that children acquire their own experience of the physical environment -- taking into account their age and particular social and cultural circumstances – and are thereby allowed to build their own understanding and appreciation of the importance of the physical environment for themselves and other people as well as for animals and plants. Children's environmental experience, and the value it has, are linked to fundamental aspects of sustainable development. It is therefore necessary to have an understanding of children's environmental experience and the value children assign to their local environment. It is also necessary that children have opportunities to communicate their knowledge. This knowledge is relevant for e.g. town-planning and for institutions that affect children's everyday lives such as school, after-school clubs and health care for children and young people.

Child impact analyses

Modern society restricts children's everyday lives. Increased road traffic has reduced children's independent mobility in several ways, particularly with regard to their play areas and their school and leisure routes, something which in turn affects their health and development (cf. Hillman et al. 1990; Björklid, 1997; Prezza et al. 2001; Kyttä 2004; Fotel and Thomsen, 2004; Karsten, 2005;). The UNCRC and Agenda 21 are invoked in today's call for a child-centred perspective and children's right to participate. Children are regarded as knowledge-producers and bearers of different competencies (James and Prout, 1990).

The UN Committee for the Rights of the Child in Geneva recommends that all countries which ratified the UNCRC should carry out child-impact analyses on all decisions affecting children. Children's and young people's influence and participation in traffic planning and town planning should be encouraged, something which is already happening in certain local authority areas, and the Swedish Transport Administration is carrying out child-impact analyses in connection with road-building schemes. Children and young people should be consulted and kept informed so that their views can be taken into account before decisions are reached.

Children's perspectives and child-centred perspectives

Today child-centred views and children's rights of influence are stressed, often with reference to the UNCRC and Agenda 21. It should be noted, however, that the child-centred perspective is not synonymous with the child's perspective. The child's perspective means that children themselves have made their own contribution. A child-centred perspective is constructed not by the child but by an advocate of the child, with a focus on trying to improve children's living conditions and looking after their best interests. How are these two perspectives expressed and differentiated with regard to views of child-friendly cities?

In our research about 100 people answered a questionnaire and described how they envisaged a child-friendly city (Björklid and Nordström, 2012). Teachers in three schools in inner-city Stockholm and outer-city areas distributed the questionnaire to 52 pupils aged 11 or 12. In addition 42 teachers, student teachers and planners answered the same questionnaire. Follow-up interviews were carried out with 13 children (eight girls and five boys) and five town planners (four women and one man). The results show that the children's and the

professionals' views of child-friendly cities are similar. (It should be mentioned that the professionals chosen for the study had a child-centred perspective.)

Both groups stressed the importance of reduced or no traffic, access to public spaces, green areas and meeting places. The children also pointed to factors that create anxiety and discomfort, such as the presence of alcoholics and drug users in their neighbourhood. Both children and adults stressed safety and security in their descriptions of a child-friendly city. They gave many concrete examples of how they wanted to reduce the traffic and reduce speeds in a child-friendly city.

One girl described her idea of a child-friendly city:

> *There wouldn't be any cars near the city. There would be lots of plants. There would be things to play with such as swings and so on. It would feel fresh to be there. There would always be children there playing. You would share with others. If possible, cars would be solar-powered. You wouldn't need to lock doors against thieves and so on. And* all *children and adults would be happy.*

And a boy wrote:

> *There would be only footpaths and no roads. You would go to a good school. You would have a good environment and good food. Anyone who started fighting would have to leave the city. You would be allowed only environmentally friendly things. There would be a big park. You would have a good prime minister who obeyed. Teachers would be there and would give lessons. There would be only good things around you.*

An interview with a town planner:

> *Car traffic on the city's terms, in other words roads constructed as city spaces, not as transport routes; mixed traffic with the priority for unprotected road-users; carefully constructed crossing places; invitations to walk and cycle; not noisy, safe with regard to traffic. Children should be able to walk, cycle and run instead of being driven.*

Another town planner said:

> *A 12-year-old should be able to move independently about large parts of the city and feel safe. It's a matter of being able to* discover, *being able to* understand *how the city works.*

Participation includes both formal and informal dimensions. For children, these dimensions are interdependent. Informal participation involves freedom to move about and explore natural and built environments, to gather with others, and to observe and try out roles in public places. In order that participation should not lead to pseudo-democracy it is important that children be given an input into matters which they have direct knowledge and experience of. The first step towards participating in the changing of one's own local environment is to acquire knowledge of it – which is something that children do when they are given the opportunity to move about freely and safely outdoors and to explore their local environment

through play. Through children's participation in their local environment in this informal sense, they come to understand issues discussed in the formal arena of environmental planning, such as traffic flow, green spaces, watersheds, crime or 'eyes on the street'. These issues become grounded in local realities for them, and they gain experience that they can later contribute to formal processes of community decision-making (Heft and Chawla, 2006).

With regard to the UNCRC, the focus these days is on children's rights of influence. Having a child-centred perspective means that the adult regards the child as an expert on his or her own situation. But in the final analysis it is the adult who, based on their adult knowledge, experience and viewpoint, must make decisions and take responsibility for those decisions. Children are experts on their own surroundings and have rights of influence over their own local neighbourhood – they are knowledge-producers. But they also need to have the right to be protected by society so that they are allowed to be children – that is, to play in and explore their local environment and their town or city in conditions that are safe and promote their development.

Environmental and developmental psychologists should provide town planners and decision-makers with knowledge about what a child-centred perspective in connection with children's outdoor environment entails. Working together with children can provide this knowledge. A further way is to carry out research and collaborate across disciplinary boundaries.

Children's interest in the environment is clearly strong and their orientation to the world is dependent on physical experience and sensory impressions. Engagement with the environment, which starts early in life during the first formative years and continues to be emotionally important later in life, is decisive for the individual as well as for society's commitment to care for the environment. People with a child-centred perspective on the environment – parents, teachers and others – are important for supporting the development of environmental engagement in children and for sustaining that engagement during growth and upbringing. They are also potentially important in being a communicative bridge between children and society at large.

Summarizing our views on children, traffic and the local community, we would stress first of all that road safety must be seen in a *holistic* perspective. This is particularly important with regard to children. That the environment should be safe and accident-free is obvious – but it is far from sufficient. Children are the principal users of the local environment. The outdoor environment is also their developmental environment. Other risk factors include psycho-social problems and health problems on account of exhaust emissions etc.

The second point we would stress is the risk of *negative adaptation*. There is a risk that parents and children see it as self-evident that one can no longer walk or cycle even short distances to school. As a result children miss out on the spontaneous activity that cycling or walking to school involves. The danger is that both children and adults adapt to an environment that is harmful in the long term for health and quality of life. Children who are driven to and from school and elsewhere are deprived not only of physical activity but also of play, informal learning and environmental competence. In the short term people can adapt to almost anything. But we must be aware of the long-term costs of adapting to harmful environmental conditions. We do not realize until too late what the consequences of this may be for our quality of life, and so simply accommodate ourselves to something which is

harmful to us. This may also explain why we sometimes feel a sense of inertia when it comes to pressing for changes.

Thirdly and finally, one way in which we can avoid simply adapting to harmful environmental conditions is to make use of our right to *citizen participation*. This is something that must gradually be learned and here the school has an important role to perform. This is made clear also in the national curriculum and UNCRC. But in order that participation should not lead to pseudo-democracy, it is important that children be given an input into matters which they have direct knowledge and experience of. And this is the case with regard to their local environment. The first step towards participation is to acquire knowledge of one's surroundings – in other words, by being allowed to play and move about freely and safely outdoors and to explore one's local environment.

Continuing research

For a long time now research into children's road safety has been predicated on the idea that the outdoor environment is also a developmental environment. This has been the case both in Sweden and in other countries. When the pioneering British study “One False Move...” (Hillman et al. 1990) pointed out that children's independent mobility had decreased drastically over the previous twenty years – from the 1970s to the 1990s – comparable studies were carried out in other countries. In Sweden questionnaire studies of parents were also carried out, looking at children's school journeys, beginning in 2000 and thereafter every three years. One limitation of these studies was that only the parents answered the questionnaire and not the children themselves. Nor was it possible to study the actual or objective school routes. An additional limitation was that it was principally the parents' knowledge of school routes that was collected and not of other, leisure routes (The Swedish Transport Administration, 2012b).

There is a lack of knowledge about *children's leisure journeys*. Studies show that twice as many children are driven to leisure activities compared with those who are driven to school. There is no national picture of how and why so many children are driven to and from leisure activities. What measures are required to increase the opportunities for children to travel to and from such activities independently?

The same applies to *children with physical disabilities*. Studies have shown that children's outdoor environment entails numerous restrictions on physically disabled children. What measures are required to improve access for these children?

A *choice of schools* means that many children attend a different school to the one that lies within their neighbourhood. In rural areas the number of schools has decreased and children travel to school by school bus. In Sweden a model for inventorying bus stops has been developed, which should also be used by local authorities. What measures and prioritizations should be adopted?

In conjunction with *child-impact analyses*, children's routes from home to school are being studied. Many schools carry out such studies as part of their road safety work. How can these methods be developed further? How can child-impact studies of accessibility in children's outdoor environment be developed? Which measures are prioritized? How is dialogue between decision-makers and children created?

The *air pollution* situation in our built-up areas has increasingly been presented as a serious health risk to people in general and children in particular. How are children affected by air pollution and noise pollution? Atmospheric pollution can increase the risk of reduced lung capacity. Traffic noise can contribute to sleep disturbances and reduced attention spans in children. A clear connection has been observed between asthma and increased air emissions, while other studies have linked traffic pollution with cancer and with colds In the UNCRC stress is placed on children's right "to enjoy the best attainable health". In this respect too traffic in children's local environment constitutes a risk factor.

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Appendix 1 Questionnaires

HOW YOU GET ABOUT
A questionnaire for children and young people 7 to 15 years old

- Please answer all questions as best you can – there are no right or wrong answers.
- We will not know who filled in this questionnaire, only the class it was completed in.
- Please ask if you have any questions.

1) How did you get to school this morning?
(Only tick <u>one</u> box)

☐  Walked most of the way

☐  Cycled

☐  Bus

☐  Underground, local train or train

☐  Car

☐ Other: ……

2) Who did you travel to school with *<u>this morning</u>*?
(Tick as many boxes as you need)

☐ Travelled on my own

☐ Parent

☐ Another adult

☐ Older child / teenager

☐ Child of same age or younger

3) How long did it take you to travel to school *<u>this morning</u>*?
(Only tick <u>one</u> box)

☐ Less than 5 minutes

☐ 5 to 15 minutes

☐ 16 to 30 minutes

☐ 31 to 45 minutes

☐ 46 minutes or more

☐ Don’ know

4) How will you go home *today*?
(Only tick one box)

- ☐  Walk most of the way
- ☐  Cycled
- ☐  Bus
- ☐  Underground, local train or train
- ☐  Car
- ☐ Other: ……
- ☐ Don't' know

5) Who will you travel home with *today*?
(Tick as many boxes as you need)

- ☐ Travelling home alone
- ☐ Parent
- ☐ Another adult
- ☐ Older child / teenager
- ☐ Child of same age or younger
- ☐ Don't' know

6) How would you *like* to be able to travel to and from school?
(Only tick one box)

- ☐  Walk most of the way
- ☐  Cycled
- ☐  Bus
- ☐  Underground, local train or train
- ☐  Car
- ☐ Other: ……
- ☐ Don't' know

7a) Are you allowed to cross busy main roads without an adult to accompany you?

☐ YES *(Please go to ⇨ Question* **7**c*)*

☐ NO

7b) Would you like to be allowed to do so?

☐ YES *(Please go to ⇨ Question* **8a***)*

☐ NO *(Please go to ⇨ Question* **8a***)*

7c) How old were you when you first crossed busy main roads without an adult to accompany you?

☐ Age

8a) Do you have a bicycle?

☐ YES

☐ NO *(Please go to ⇨ Question* **9***)*

8b) Are you allowed to cycle without an adult to accompany you, for example to friends or other activities?

☐ YES

☐ NO

8c) Are you allowed to cycle on busy roads by your parents?

☐ YES

☐ NO

8d) How many times do you cycle per week in September/October?

☐ Once a week or less

☐ One or two days a week

☐ Three or more days a week

☐ One or two days a week

☐ Three or more days a week

☐ Once a week or less

8d) How many times do you cycle per week in September/October?

9) Are you allowed to travel without an adult on the bus, underground train or local train during your free time (in other words, apart from to and from school)?

- ☐ Yes
- ☐ No

10) How much time do you spend in front of the computer or TV each day?

- ☐ Less than 1 hour
- ☐ 1-3 hours
- ☐ 4-6 hours
- ☐ More than 6 hours

11) Which of these activities did you do this weekend?

	On your own or with a friend	*With a parent or other adult*
Visited a friends' home	☐	☐
Visited relatives or grown-ups	☐	☐
Took part in a leisure activity (*Scouts, Youth club, played in a band)*	☐	☐
Went to the shops	☐	☐
Went to a library	☐	☐
Went to a cinema	☐	☐
Spent time with friends outside after dark	☐	☐
Was out with friends during the day	☐	☐
Went to a playground or park	☐	☐
Took part in a sporting activity/training	☐	☐
Went for a walk or cycled around	☐	☐
Went to a concert, disco or similar during the evening	☐	☐
Visited a place of worship	☐	☐
Went to a café	☐	☐
Was in the woods (picking berries/mushrooms walking)	☐	☐

12a) **How safe do you feel *on your own* in your local neighbourhood?**
(Only tick one box)

☐ Very safe

☐ Fairly safe

☐ Not very safe

☐ Not at all safe

12b) When you are outside without an adult are you worried by any of the following?
(Tick as many boxes as you need)

- ☐ Traffic
- ☐ Getting lost
- ☐ Bullying
- ☐ Strangers
- ☐ Not allowed out on my own
- ☐ No none of these worry me

12c) Is there anything else you are worried about when you are outside *on your own or with friends*?

Please write in:……..

……

……

13) How old are you?

- ☐ 7 years
- ☐ 8 years
- ☐ 9 years
- ☐ 10 years
- ☐ 11 years
- ☐ 12 years
- ☐ 13 years
- ☐ 14 years
- ☐ 15 years
- ☐ 16 years

14) Are you...?

a Girl ☐

a Boy ☐

Thank you very much for your help ☺

HOW YOUR CHILD GETS ABOUT

Questions for the father, mother or carer of a child 7 to 15 years old

THE FOLLOWING QUESTIONS ARE ABOUT YOUR CHILD

- This form should take about ten minutes to complete.
- Please only answer in relation to the child who gave you this form – do not answer about any other children in your household.
- Please answer the questions honestly and as best you can.
- Your answers will be made anonymous and will be kept confidential.

Coming home from school

1a) Does your child travel home from school alone?

☐ YES - **When did you first let them travel home from school alone?**

☐ Age

☐ NO - **At what age will you be likely to let your child travel home from school alone?**

1b) How many days a week is your child typically collected from school by an adult?

(Please insert number)

☐ times each week

1c) What are your *main* reasons for picking your child up from school (even if you no longer do)?
(Please tick no more than three boxes)

☐	**1.** Opportunity to spend time with my child	☐	**7.** Fear of bullying by other children
☐	**2.** Opportunity for exercise or to get out of house	☐	**8.** Opportunities to meet teachers and other adults
☐	**3.** Concern about traffic danger	☐	**9.** On the way to do other errands such as shopping, fetching siblings etc.
☐	**4.** Child unreliable or too young	☐	**10** School too far away
☐	**5.** On the way from work	☐	**11.** Other, please write in:
☐	**6.** Danger from adults		

1d) **How long would it typically take <u>you</u> to get to your child's school?**
(Insert a time however large or small, or tick 'Don't know / Not applicable')

On foot		*minutes*	or	☐ Don't know / Not applicable
By car		*minutes*	or	☐ Don't know / Not applicable
Public transport		*minutes*	or	☐ Don't know / Not applicable

1 e **How does your child most frequently get to school?**

☐ Walk most of the way

☐ Cycle

☐ Bus

☐ Underground, local train or train

☐ Car

☐ Other: ……..

1 f) **How safe or unsafe in terms of traffic do you think your child's school route is?**

☐ Very safe

☐ Fairly safe

☐ Neither safe nor unsafe

☐ Fairly unsafe

☐ Very unsafe

☐ Don't know

1g) **The child attends …**

☐ The local school that is closest were we live

☐ another local school

1h) **What is the main reason for your child attending this school?**

(Tick as many as you need)

☐	1. No places available at nearest school
☐	2. Want my child to go to this school
☐	3. Moved home after child started at school
☐	4. Better transport links or because it means no travelling
☐	5. Other, *please write in:*

Other journeys

2a) **When going to places other than school that are *within walking distance*, is your child taken there or allowed to go alone?**

☐ Usually goes alone *(Please go to ⇨ Question* **3***)*

☐ Usually taken

☐ Varies

2b) **What is the approximate number of round trips made *each week* to accompany your child, *excluding the journey to school?***
(For example to and from the swimming pool, sport training, friends. Travelling to the swimming pool and then home again would count as one round trip)

☐ Round trips each week

2c) **What is the method of travel most frequently used on these trips?**
(Tick as many as you need)

☐ Walk most or all of the way

☐ Cycle

☐ Local bus

☐ Underground or train

☐ Car

☐ Other: ……

Crossing roads

3) Do you allow your child to cross busy streets without an adult to accompany them?

***Please note**: this question is included for all parents of children aged between 7 and 15 years old. Please answer even if the answer seems obvious.*

☐ YES **What age was your child first allowed to do so?**

☐ Age

☐ NO **What age do you think you will allow your child to do so?**

☐ Age

Going out after dark

4a) Do you allow your child to be outside on their own in the evenings in September/October when it is dark?

☐ YES *(Please go to ⇨ Question* **5**)

☐ NO

4b) If NO, what is the main reason your child is not allowed to go out *alone* after dark?

Please write in:……..

……

Cycling

5) Do you allow your child to cycle on busy streets without an adult to accompany him/her?

☐ Does not own a bicycle

☐ YES - **At what age was your child first allowed to cycle on main roads alone?**

☐ Age

☐ NO - **At what age do you think you will allow your child to cycle on main roads alone?**

☐ Age

Bus, underground train local train or train

6) Do you allow your child to travel by bus, train or underground train without an adult to accompany them (apart from journeys to and from school)?

Yes, by bus, underground train or local train from the age of ___ years

No, but when he/she is ___ years old he/she will be allowed to travel by bus, underground train or local train

7) Do you allow your child to travel by train, local train or underground train without an adult to accompany them (apart from journeys to and from school)?

Yes, by bus from the age of ___ years *[bus isn't mentioned in the question]*

No, but when he/she is ___ years old he/she will be allowed to travel by bus *[as above]*

Yes, by underground and/or local train from the age of ___ years

No, but when he/she is ___ years old he/she will be allowed to travel by underground or local train

Yes, by train from the age of ___ years

No, but when he/she is ___ years old he/she will be allowed to travel by train

Mobile Phones

8a) Does your child have a mobile phone?

☐ YES

☐ NO (*Please go to* ⇨ *Question* 9)

8b) If YES, does this give you more confidence about letting your child go out *alone*?

☐ YES

☐ NO

☐ Child does not go out alone

TV and computers

9) How much time does your child spend in front of the computer and TV each day?

- ☐ Less than 1 hour
- ☐ 1-3 hours
- ☐ 4-6 hours
- ☐ More than 6 hours

Traffic

10) Are you worried that your child may be involved in a road accident when he/she crosses a busy main street?

- ☐ Yes, very worried
- ☐ Yes, quite worried
- ☐ No, not particularly worried
- ☐ No not worried at all
- ☐ Don't know

The following questions are about you

11a) When you were a child aged 8 or 9, how did you usually travel to school?
(Only tick one box)

- ☐ Walked most or all the way
- ☐ Cycled
- ☐ Bus
- ☐ Local bus or train or underground
- ☐ Car
- ☐ Other. Please write in: ……

11b) How did the distance you had to travel to *primary* school compare with the distance your child has to travel to *primary* school?

Much less	Less	About the same	Further	Much further
☐	☐	☐	☐	☐

11c) At about what age were you allowed to get about on your own?

☐ Age

12 To what extent do you agree or disagree with the following two statements? Put a cross in the box which best matches your opinion.

	Agree strongly	Agree	Neither agree nor disagree	Disagree	Disagree strongly
10a) Most adults who live in the neighbourhood look out for other people's children in the area	☐	☐	☐	☐	☐
10b) Some young people and adults in the area make you afraid to let your children play outdoors	☐	☐	☐	☐	☐

13) How important or unimportant do you think it is for your child to live...

	Very important	Quite important	Neither/ nor	Fairly unimportant	Completely unimportant
11a) …where there is little or no traffic	☐	☐	☐	☐	☐
11b) …where the child has clean air	☐	☐	☐	☐	☐
11c) …where there is no noise pollution	☐	☐	☐	☐	☐
11d) …where the child can play outdoors or be outdoors on their own	☐	☐	☐	☐	☐
11e) …near the school	☐	☐	☐	☐	☐
11f) …near a park/play park	☐	☐	☐	☐	☐
11g) …close to large green spaces	☐	☐	☐	☐	☐
11h) …near shops and leisure facilities	☐	☐	☐	☐	☐
11i) …close to friends	☐	☐	☐	☐	☐
11j) …close to sports facilities	☐	☐	☐	☐	☐
11 k) ... close to transport links	☐	☐	☐	☐	☐

14) One should use some of the money currently spent on road-building schemes to construct footpaths and cycle paths (put a cross against the statement that best describes your view)

☐ Completely agree

☐ Partly agree

☐ Don't really agree

☐ Completely disagree

☐ Have no opinion

Your household

15a) Does your household have regular use of a car (including car share)?

☐ No ☐ Yes, ***1*** car ☐ Yes, ***2*** or more cars

15b) How many adults in your household, *including yourself*, have a full driving licence?

☐ Number

16) How many people live in your home, *including yourself?*

☐ Children aged 10 years or less
☐ Children aged 11 to 15 years
☐ Everyone else aged 16 or more
☐ **TOTAL**

17) Do you live in a…

☐ Rented flat
☐ Owner-occupied flat
☐ House (terraced, semi detached or detached)
☐ Other. . . . . .

18) Do you have access to outside space(s) where your children can play?
(Please tick all the relevant boxes)

☐	**1.** Garden
☐	**2.** Park which you can reach without crossing a main road
☐	**3.** Park you reach by crossing a main road
☐	**4.** Quiet residential road/courtyard
☐	**5.** Large green spaces or wooded areas that can be reached without crossing any main roads

☐	**6.** There is nowhere to play other than by crossing a main road
☐	**7.** There are places to play that can be reached by crossing a main road
☐	**8.** Other please write in:

19) Please write in your postcode

20) Who answered this questionnaire?

- ☐ Mother
- ☐ Father
- ☐ Mother and father together
- ☐ Someone else, namely . . . . . .

21) How old are the child's parents?

	Mother's age	Father's age
Under 30	☐	☐
30 to 44	☐	☐
45 or older	☐	☐

22) Does your child live with…

- ☐ Both parents
- ☐ Only with mother/father
- ☐ Alternately with mother and father
- ☐ Other

23a) Which form of education is the highest that the parents have completed?

	Mother	Father
Comprehensive school or equivalent	☐	☐
High school, vocational school or equivalent	☐	☐
Technical college, university or equivalent	☐	☐

23b) **What is the parents' main occupation?**

	Father	Mother
Full-time work	☐	☐
Part-time work	☐	☐
Full-time study	☐	☐
Part-time study	☐	☐
Parental leave	☐	☐
Working at home	☐	☐
Other	☐	☐

Thank you very much for your help ☺

Appendix 2 Tables

Tables

The six licences of independent mobility

Table 1 Licence to travel home from school alone

Reported by	Primary school children n=213	Secondary school children n=206	**Total N=419**
parents	76%	94%	**85%**
children	71%	97%	**84%**

Table 2 Licence to cross busy roads

Reported by	Primary school children n=213	Secondary school children n=206	**Total N=419**
parents	57%	91%	**74%**
children	62%	93%	**77%**

Table 3 Licence to use public transport

Reported by	Primary school children n=213	Secondary school children n=206	**Total N=419**
parents	33%	90%	**61%**
children	33%	96%	**64%**

Table 4 Licence to go to places other than school and to go outside after dark

When going to places other than school that are within walking distance, is your child taken there or allowed to go alone?	Primary school children n=213	Secondary school children n=206	**Total N=419**
Usually goes alone	30%	66%	**48%**
Usually taken	30%	3%	**17%**
Varies	39%	27%	**33%**
Allowed going out after dark	36%	78%	**57%**

Table 5a Cycle owners

Reported by	Primary school children n=213	Secondary school children n=206	**Total N=419**
parents	87%	89%	**88%**
children	95%	89%	**92%**

Table 5b (Of cycle owners) Licence to cycle on busy roads

Reported by	Primary school children	Secondary school children	**Total**
parents	15%	62%	**38%**
children	44%	87%	**58%**

Table 5c Licence to cycle to friends or other activities

.			
Reported by	Primary school children n=213	Secondary school children n=206	**Total N=419**
children	72%	88%	**80%**

The journey to and from school

Table 6a Primary school children's transport modes to school

.		
To school	Most frequently to school, reported by parents n=213	To school "today", reported by children n=213
Walk	73%	63%
Cycle	5%	5%
(School) bus	12%	12%
Underground, local train	1%	2%
Car	6%	15%
Other	2%	1%
Missing data	1%	3%

Table 6b Secondary school children's transport modes to school

.		
To school?	Most frequently to school, reported by parents n=206	To school "today" reported by children n=206
Walk	55%	50%
Cycle	5%	7%
(School) bus	27%	25%
Underground, local train	7%	8%
Car	3%	4%
Other	3%	4%
Missing data	1%	2%

Table 7 Household access to cars

Does your household have regular use of a car (including car share)?	Primary school children n=213	Secondary school children n=206	**Total** **N=419**
No	14%	14%	**14%**
Yes, one car	56%	51%	**53%**
Yes, two or more cars	28%	35%	**31%**
Missing data	2%	1%	**1%**

Table 8 Preferred mode to school

.			
How would you like to be able to travel to and from school?	Primary school children n=403	Secondary school children n=394	**Total** **N=797**
Walk	33%	37%	**35%**
Cycle	29%	13%	**21%**
(School) bus	8%	12%	**10%**
Underground, local train	6%	9%	**7%**
Car	14%	18%	**16%**
Other	8%	9%	**8%**
Missing data	3%	3%	**3%**

Table 9 Accompaniment to school

.			
Who did you travel to school with this morning?	Primary school children n=403	Secondary school children n=394	**Total N=797**
Travelled on my own	27%	57%	**42%**
Child of same age or younger	38%	31%	**34%**
Older child/teenager	16%	11%	**13%**
Parent	35%	6%	**21%**
Another adult	1%	2%	**2%**

Table 10a Primary school children's mode of transport and accompaniment to school

Who did you travel to school with this morning?					
How did you get to school this morning?	Travelled on my own n=109	Child of same age or younger n=151	Older child/teenager n=64	Parent n=140	Another adult n=5
Walked	71%	62%	53%	47%	40%
Cycled	10%	3%	5%	5%	0%
(School) bus	8%	18%	27%	1%	0%
Underground, local train	3%	1%	3%	6%	0%
Car	4%	14%	13%	39%	40%
Other	5%	1%	0%	1%	20%
Missing data	0%	1%	0%	1%	0%

Table 10b Secondary school children's mode of transport and accompaniment to school

Who did you travel to school with this morning?					
How did you get to school this morning?	Travelled on my own n=225	Child of same age or younger n=120	Older child/teenager n=43	Parent n=25	Another adult n=7
Walked	60%	44%	26%	20%	0%
Cycled	6%	3%	2%	4%	0%
(School) bus	16%	41%	58%	8%	57%
Underground, local train	12%	5%	5%	12%	14%
Car	1%	3%	5%	52%	14%
Other	4%	4%	5%	0%	14%
Missing data	1%	0%	0%	4%	0%

Table 11 Journey time to school according to the children

How long did it take you to travel to school this morning?	Primary school children n=403	Secondary school children n=394	**Total N=797**
Less than 5 minutes	27%	20%	**23%**
5-15 minutes	40%	46%	**43%**
16-30 minutes	6%	23%	**14%**
31-45 minutes	2%	5%	**3%**
46 minutes or more	1%	2%	**2%**
Don't know	22%	2%	**12%**
Missing data	3%	2%	**3%**

Table 12a Journey time to school by different modes of transport according to the parents

How long would it typically take you to get to your child's school?	On foot n=311	By car n=230	Public transport n=230
1- 5 minutes	31%	62%	25%
6-10 minutes	40%	26%	27%
11-20 minutes	17%	10%	19%
21- 30 minutes	4%	1%	20%
More than 30 minutes	8%	1%	10%

Table 12b Journey time to school by different modes of transport according to the children

	How did you get to school this morning?							
How long did it take you to travel to school this morning?	Walked n=441	Cycled n=43	(School) bus n=138	Underground, local train n=52	Car n=83	Missing data n=17	Other n=23	**Total N=797**
Less than 5 minutes	30%	21%	4%	10%	30%	6%	17%	**23%**
5-15 minutes	51%	49%	30%	25%	41%	24%	30%	**43%**
16-30 minutes	8%	2%	32%	35%	4%	6%	44%	**14%**
31-45 minutes	0%	0%	13%	12%	0%	0%	0%	**3%**
46 minutes or more	1%	0%	4%	12%	0%	0%	0%	**2%**
Don't know	9%	26%	14%	6%	25%	6%	8%	**12%**
Missing data	1%	2%	3%	2%	0%	58%	0%	**3%**

Table 13 Choice of school

	School					
The assigned school	Maria n=108	Sjöstad n=84	Sjöäng n=93	Bredäng n=47	Fjärdhundra n=87	**Total N=419**
Primary school children	82%	90%	77%	85%	98%	**85%**
Secondary school children	60%	67%	44%	95%	96%	**70%**
Total	**71%**	**79%**	**62%**	**89%**	**97%**	**78%**

Table 14 The usual mode of transport to school and choice of school

How does your child most frequently get to school?	Assigned school n=326	Other school n=88
Walk	70%	44%
Cycle	4%	9%
(School) bus	16%	30%
Underground, local train	1%	14%
Car	5%	1%
Other	3%	1%
Missing data	0%	1%

Non-school travel and activities

Table 15 Range and breadth of weekend activities

Which of these activities did you do this weekend?		
	On your own or with another young person N=797	With a parent or other adult N=797
Visited a friend's home	32%	7%
Was out with friends during the day	34%	4%
Spent time with friends outside after dark	27%	3%
Visited relatives or grown-ups	6%	18%
Went for a walk or cycled around	20%	7%
Took part in a sport activity/training	17%	10%
Went to a playground, park or playing fields	13%	4%
Took part in a leisure activity (Scouts, Youth club, played in a band)	11%	5%
Went to the shops	12%	20%
Went to a café	8%	9%
Went to a library	6%	4%
Went to a cinema	7%	7%
Went to a concert, disco or similar during the evening	6%	5%
Was in the woods (picking berries/mushrooms	5%	8%
Visited a place of worship	3%	5%

Table 16 Number of journeys

.			
What is the approximate number of round trips made each week to accompany your child, excluding the journey to school?	Primary school children n= 203	Secondary school children n=206	**Total N=419**
No round trips	36%	68%	**53%**
1 round trip	10%	11%	**1%**
2 round trips	24%	7%	**15%**
3 round trips	17%	8%	**13%**
4 round trips	5%	4%	**5%**
5 round trips	4%	1%	**3%**
6 or more round trips	5%	1%	**2%**
Missing data	1%	1%	**1%**

Table 17a Time spent at the computer or TV according to the parents

How much time does your child spend in front of the computer and TV each day?	Primary school children n=213	Secondary school children n=206	**Total N=419**
Less than 1 hour	21%	6%	**14%**
1-3 hours	75%	76%	**75%**
4-6 hours	3%	15%	**9%**
More than 6 hours	1%	2%	**1%**
Missing data	1%	2%	**1%**

Table 17b Time spent at the computer or TV according to the children

How much time do you spend in front of the computer or TV each day?	Primary school children n=213	Secondary school children n=206	**Total N=419**
Less than 1 hour	20%	11%	**16%**
1-3 hours	49%	52%	**51%**
4-6 hours	20%	27%	**24%**
More than 6 hours	8%	8%	**8%**
Missing data	3%	1%	**2%**

Perception of safety and local area

Table 18a Primary school children's safety in their local neighbourhood

	School					
How safe do you feel on your own in your local neighbourhood?	Maria n=96	Sjöstad n =82	Sjöäng n=88	Bredäng n=70	Fjärdhundra n=67	**Total N=403**
Very safe	40%	57%	58%	57%	65%	**55%**
Fairly safe	46%	33%	33%	27%	28%	**34%**
Not very safe	6%	4%	5%	9%	3%	**5%**
Not at all safe	2%	1%	1%	0%	3%	**2%**
Not allowed out on my own	5%	2%	0%	7%	2%	**3%**
Missing data	1%	2%	3%	0%	3%	**2%**

Table 18b Secondary school children's safety in their local neighbourhood

	School					
How safe do you feel on your own in your local neighbourhood?	Maria n=98	Sjöstad n =78	Sjöäng n=90	Bredäng n=55	Fjärdhundra n=73	**Total N=394**
Very safe	60%	78%	59%	47%	67%	**63%**
Fairly safe	36%	21%	32%	51%	32%	**34%**
Not very safe	2%	0%	3%	2%	0%	**2%**
Not at all safe	0%	0%	0%	0%	0%	**0%**
Not allowed out on my own	1%	1%	2%	0%	0%	**1%**
Missing data	1%	0%	3%	0%	0%	**1%**

Table 19 Girls and boys who feel very safe in their local neighbourhood

Reported by	Girls n=370	Boys n=412	Missing data n=15
Primary school children	45%	64%	30%
Secondary school children	50%	75%	60%
Total	**47%**	**70%**	**40%**

Table 20a Anxiety among girls and boys of primary school children

When you are outside on your own or with friends are you worried by any of the following?	Girls n=184	Boys n=209	**Total N=393**
No, none of these worry me	39%	54%	**46%**
Strangers	51%	31%	**40%**
Getting lost	18%	12%	**14%**
Bullying	16%	9%	**12%**
Traffic	10%	7%	**8%**
Not allowed out on my own	4%	2%	**3%**

Table 20b Anxiety among girls and boys of secondary school children

When you are outside on your own or with friends are you worried by any of the following?	Girls n=186	Boys n=203	**Total N=389**
No none of these worry me	59%	76%	**68%**
Strangers	38%	16%	**26%**
Getting lost	3%	4%	**4%**
Bullying	4%	5%	**4%**
Traffic	5%	4%	**5%**
Not allowed out on my own	0%	2%	**1%**

Table 21a Parents' anxiety when children cross a busy road

	School					
How worried are you about the risk of your child being injured in a traffic accident when crossing a busy road?	Maria n=108	Sjöstad n=84	Sjöäng n=93	Bredäng n=47	Fjärdhundra n=87	**Total N=419**
Very	11%	13%	13%	57%	14%	**18%**
Quite	37%	41%	34%	23%	33%	**35%**
Not very	44%	44%	49%	17%	47%	**43%**
Not at all	0%	1%	3%	0%	5%	**3%**
Don't know/not sure	2%	1%	1%	2%	1%	**1%**

Table 21b Parents' anxiety when primary school children cross a busy road

	School					
How worried are you about the risk of your child being injured in a traffic accident when crossing a busy road?	Maria- n=55	Sjöstad n =41	Sjöäng n=51	Bredäng n=26	Fjärdhundra n=40	**Total n=213**
Very	16%	17%	22%	69%	18%	**25%**
Quite	47%	44%	43%	19%	33%	**39%**
Not very	36%	34%	31%	8%	50%	**34%**
Not at all	0%	2%	2%	0%	0%	**1%**
Don't know/not sure	0%	2%	2%	4%	0%	**1%**

Table 21c Parents' anxiety when secondary school children cross a busy road

	School					
How worried are you about the risk of your child being injured in a traffic accident when crossing a busy road??	Maria n=53	Sjöstad n =43	Sjöäng n=42	Bredäng n=21	Fjärdhundra n=47	**Total N=206**
Very	6%	9%	2%	43%	11%	**11%**
Quite	26%	37%	22%	29%	34%	**30%**
Not very	53%	54%	71%	29%	45%	**52%**
Not at all	11%	0%	5%	0%	9%	**6%**
Don't know/not sure	4%	0%	0%	0%	2%	**1%**

Table 22 Parents of girls and boys who are very worried that their child may be injured in an accident when crossing a busy road

	Gender		
Reported by parents of	Girls n=200	Boys n=211	Missing data n=8
primary school children	21%	28%	2%
secondary school children	13%	9%	2%
Total	**18%**	**18%**	**2%**

Table 23a Main reason for collecting children in different areas

	School					
What are your main reasons for picking your child up from school (even if you no longer do)?	Maria n=108	Sjöstad n=84	Sjööng n=93	Bredäng n=47	Fjärdhundra n=87	**Total N=419**
Concern about traffic danger	55%	54%	53%	34%	18%	**44%**
Child unreliable or too young	37%	36%	40%	45%	14%	**33%**
Danger from adults	28%	25%	30%	51%	3%	**25%**
Opportunity to spend time with my child	29%	37%	29%	21%	16%	**27%**
Opportunities to meet teachers and other adults	34%	39%	37%	26%	16%	**31%**
On the way to do other errands such as shopping, fetching siblings etc.	17%	17%	13%	26%	31%	**20%**
School too far away	12%	13%	4%	4%	21%	**12%**
Fear of bullying by other children	6%	0%	3%	13%	0%	**4%**
Opportunity for exercise or to get out of house	2%	4%	2%	6%	7%	**4%**

Table 23b Main reason for collecting primary school children in different areas

	School					
What are your main reasons for picking your child up from school (even if you no longer do)?	Maria n=55	Sjöstads n =41	Sjööng n=51	Bredäng n=26	Fjärdhundra n=40	**Total N=213**
Concern about traffic danger	53%	56%	49%	31%	20%	**44%**
Child unreliable or too young	31%	27%	36%	42%	20%	**31%**
Danger from adults	31%	15%	35%	46%	5%	**26%**
Opportunity to spend time with my child	38%	37%	31%	29%	15%	**30%**
Opportunities to meet teachers and other adults	33%	24%	39%	19%	20%	**32%**
On the way to do other errands such as shopping, fetching siblings etc.	29%	22%	14%	29%	35%	**24%**
School too far away	4%	10%	4%	8%	23%	**9%**
Fear of bullying by other children	6%	0%	4%	15%	0%	**4%**
Opportunity for exercise or to get out of house	2%	2%	2%	8%	10%	**4%**

Table 23c Main reason for collecting secondary school children in different areas

School						
What are your main reasons for picking your child up from school (even if you no longer do)?	Maria n=53	Sjöstad n =43	Sjööng n=42	Bredäng n=21	Fjärdhundra n=47	**Totalt N=206**
Concern about traffic danger	57%	51%	57%	38%	17%	**44%**
Child unreliable or too young	43%	44%	45%	48%	9%	**37%**
Danger from adults	25%	35%	24%	57%	2%	**25%**
Opportunity to spend time with my child	19%	37%	27%	24%	17%	**24%**
Opportunities to meet teachers and other adults	36%	35%	33%	33%	13%	**30%**
On the way to do other errands such as shopping, fetching siblings etc.	4%	12%	12%	33%	28%	**16%**
School too far away	21%	16%	5%	0%	19%	**14%**
Fear of bullying by other children	6%	0%	2%	10%	0%	**3%**
Opportunity for exercise or to get out of house	2%	5%	2%	5%	4%	**3%**

Table 24 Parents' confidence about allowing their child to be outdoors when they have a mobile phone

	Primary school children n=204	Secondary school children n=206	Total N=419
The child has a mobile phone	75%	97%	**86%**
More confident	61%	81%	**71%**

The influence of different factors on independent mobility

Table 25 Licence to travel home from school alone at different ages

	Age							
Reported by	8 n=57	9 n=55	10 n =54	11 n=47	12 n=59	13 n=46	14 n=51	15 n=50
parents	46%	76%	89%	96%	95%	98%	96%	86%
children	49%	58%	87%	94%	95%	98%	96%	98%

Table 26 Licence to cross busy roads at different ages

	Age							
Reported by	8 n=57	9 n=55	10 n =54	11 n=47	12 n=59	13 n=46	14 n=51	15 n=50
parents	25%	53%	70%	87%	93%	96%	100%	86%
children	42%	55%	67%	87%	90%	98%	94%	90%

Table 27 Licence to use public transport at different ages

	Age							
Reported by	8 n=57	9 n=55	10 n =54	11 n=47	12 n=59	13 n=46	14 n=51	15 n=50
parents	7%	11%	48%	72%	81%	93%	98%	88%
children	9%	15%	46%	70%	86%	98%	100%	100%

Table 28 Licence to go to places other than school and to go outside after dark at different ages

	Age							
When going to places other than school that are within walking distance, is your child taken there or allowed to go alone?	8 n=57	9 n=55	10 n =54	11 n=47	12 n=59	13 n=46	14 n=51	15 n=50
Usually goes alone	12%	27%	30%	55%	64%	63%	71%	67%
Usually taken	53%	29%	26%	6%	2%	0%	2%	10%
Varies	32%	44%	44%	36%	27%	37%	24%	20%
Allowed going out after dark	21%	27%	39%	62%	66%	79%	84%	84%

Table 29 (Of cycle owners) Licence to cycle on busy roads at different ages

	Age							
Reported by	8	9	10	11	12	13	14	15
parents	6%	8%	17%	32%	43%	70%	62%	73%
children	32%	37%	50%	59%	75%	90%	93%	95%

Table 30 Licence for girls and boys to travel home from school alone

	Age								
Reported by parents of	8	9	10	11	12	13	14	15	**Total**
girls	54%	77%	84%	91%	94%	95%	100%	91%	**85%**
boys	38%	76%	93%	100%	96%	100%	96%	82%	**84%**
Reported by									
girls	50%	32%	96%	91%	94%	95%	100%	96%	**82%**
boys	45%	74%	79%	96%	96%	100%	92%	100%	**85%**

Table 31 Licence for girls and boys to cross busy roads

	Age								
Reported by parents of	8	9	10	11	12	13	14	15	**Total**
girls	27%	63%	80%	96%	90%	95%	100%	91%	**79%**
boys	24%	38%	64%	79%	75%	96%	100%	82%	**69%**
Reported by									
girls	46%	47%	64%	86%	94%	100%	96%	87%	**76%**
boys	38%	67%	68%	88%	86%	96%	93%	93%	**78%**

Table 32 Licence for girls and boys to use public transport

	Age								
Reported by parents of	8	9	10	11	12	13	14	15	**Total**
girls	8%	17%	52%	78%	91%	100%	95%	83%	**60%**
boys	7%	4%	46%	75%	82%	88%	100%	93%	**62%**
Reported by									
girls	12%	13%	48%	68%	87%	100%	100%	100%	**64%**
boys	7%	17%	46%	75%	86%	96%	100%	100%	**65%**

Table 33 Licence for girls and boys to places other than school

	Age								
The child usually goes alone	8	9	10	11	12	13	14	15	**Total**
Girls	15%	23%	32%	46%	74%	57%	68%	74%	**48%**
Boys	7%	29%	25%	63%	54%	67%	74%	62%	**47%**

Table 34 Licence for girls and boys to go outside after dark

	Age								
Allowed going out after dark	8	9	10	11	12	13	14	15	**Total**
Girls	15%	27%	40%	59%	61%	71%	91%	91%	**55%**
Boys	28%	25%	39%	63%	71%	88%	78%	77%	**58%**

Table 35 (Of cycle owners) Licence for girls and boys to cycle on busy roads

	Age								
Reported by parents of	8	9	10	11	12	13	14	15	**Total**
girls	0%	3%	12%	23%	43%	67%	56%	60%	**31%**
boys	10%	12%	21%	32%	36%	67%	63%	63%	**38%**
Reported by									
girls	41%	22%	46%	53%	77%	85%	90%	95%	**60%**
boys	35%	54%	52%	67%	72%	95%	90%	96%	**69%**

Table 36 Licence for girls and boys to cycle to friends or other activities

	Age								
Reported by	8	9	10	11	12	13	14	15	**Total**
girls	60%	55%	80%	83%	93%	93%	80%	89%	**79%**
boys	69%	78%	75%	91%	90%	90%	81%	91%	**83%**
Total	**66%**	**66%**	**77%**	**86%**	**91%**	**90%**	**80%**	**90%**	**80%**

Table 37a Range and breadth of weekend activities when children are alone or with friends

.			
Which of these activities did you do this weekend? (On your own or with another young person)	Girls n=370	Boys n=412	**Total N=782**
Was out with friends during the day	31%	37%	**34%**
Visited a friend's home	30%	34%	**32%**
Spent time with friends outside after dark	25%	29%	**27%**
Went for a walk or cycled around	16%	24%	**20%**
Took part in a sporting activity/training	12%	21%	**17%**
Went to a playground, park or playing fields	10%	15%	**13%**
Went to the shops	14%	9%	**12%**
Took part in a leisure activity (Scouts, Youth club, played in a band)	10%	12%	**11%**
Went to a café	10%	6%	**8%**
Went to a cinema	6%	7%	**7%**
Visited relatives or grown-ups	5%	6%	**6%**
Went to a library	5%	7%	**6%**
Went to a concert, disco or similar during the evening	6%	6%	**6%**
Was in the woods (picking berries/mushrooms	5%	5%	**5%**
Visited a place of worship	2%	4%	**3%**

Table 37b Range and breadth of weekend activities when children are with parents or other adults

Which of these activities did you do this weekend? (With a parent or other adult))	Girls n=370	Boys n=412	**Total N=782**
Went to the shops	26%	16%	**20%**
Took part in a sport activity/training	7%	13%	**10%**
Went to a café	8%	10%	**9%**
Was in the woods (picking berries/mushrooms	8%	8%	**8%**
Went to a cinema	6%	8%	**7%**
Visited a friend's home	5%	8%	**7%**
Went for a walk or cycled around	9%	6%	**7%**
Visited relatives or grown-ups	5%	6%	**6%**
Took part in a leisure activity (Scouts, Youth club, played in a band)	4%	4%	**6%**
Went to a concert, disco or similar during the evening	4%	6%	**5%**
Visited a place of worship	4%	5%	**5%**
Went to a library	2%	5%	**4%**
Was out with friends during the day	3%	4%	**4%**
Went to a playground, park or playing fields	3%	6%	**4%**
Spent time with friends outside after dark	2%	3%	**3%**

Table 38 Time spent at the computer or TV by girls and boys

Time spent at the computer or TV					
Reported by parents of	Less than 1 hour	1-3 hours	4-6 hours	More than 6 hours	Missing data
girls	15%	78%	7%	0%	1%
boys	12%	73%	11%	2%	2%
Reported by					
girls	19%	50%	20%	8%	3%
boys	11%	52%	28%	9%	0%

Table 39 Access to car

School					
Reported by parents	Maria n=108	Sjöstad n =84	Sjööäng n=93	Bredäng n=47	Fjärdhundra n=87
No car	24%	16%	4%	32%	0%
One car	64%	73%	65%	45%	14%
Two or more cars	11%	10%	29%	19%	86%
Missing data	1%	2%	1%	4%	0%

Table 40 No access to car

School						
Reported by parents of	Maria n=108	Sjöstad n =84	Sjööäng n=93	Bredäng n=47	Fjärdhundra n=87	**Total N=419**
primary school children	24%	15%	4%	35%	0%	**14%**
secondary school children	24%	16%	5%	29%	0%	**14%**

Table 41 Children's mode of transport to school ”today” and parents' car ownership

Car ownership			
*How did you get to school this morni**ng***	No car n=58	One car n=223	Two or more cars n=131
Walk	74%	63%	37%
Cycle	7%	5%	7%
(School) bus	3%	10%	39%
Underground, local train	9%	6%	2%
Car	5%	10%	10%
Other	0%	4%	2%
Missing data	2%	2%	3%

Table 42a Parents' educational background

.		
Which form of education is the highest that the parents have completed?	Mother N=419	Father N=419
Comprehensive school or equivalent	5%	6%
High school, vocational school or equivalent	47%	46%
Technical college, university or equivalent	45%	41%
Missing data	3%	6%

Table 42b Mothers' educational background in different areas

School						
Which form of education is the highest that the mothers have completed?	Maria n=108	Sjöstad n =84	Sjöäng n=93	Bredäng n=47	Fjärdhundra n=87	**Total N=419**
Comprehensive school or equivalent	0%	1%	4%	17%	8%	**5%**
High school, vocational school or equivalent	35%	35%	60%	62%	51%	**47%**
Technical college, university or equivalent	62%	61%	31%	19%	40%	**45%**
Missing data	3%	3%	4%	2%	1%	**3%**

Table 43 Parents' attitude to cycle paths versus road building

School						
Completely agree that one should use some of the money, currently spend on road - building schemes to construct footpaths and cycle paths	Maria n=108	Sjöstad n =84	Sjöäng n=93	Bredäng n=47	Fjärdhundra n=87	**Total N=419**
Parents of primary school children	55%	59%	55%	54%	42%	**53%**
Parents of secondary school children	54%	49%	38%	57%	38%	**46%**
Total	**55%**	**53%**	**47%**	**55%**	**40%**	**50%**

Table 44 Licence to travel home from school alone in the different areas

School					
Reported by parents of	Maria n=108	Sjöstad n =84	Sjöäng n=93	Bredäng n=47	Fjärdhundra n=87
primary school children	62%	83%	75%	73%	90%
secondary school children	100%	93%	98%	86%	87%
Total	**81%**	**88%**	**85%**	**79%**	**89%**
Reported by					
primary school children	48%	68%	76%	77%	95%
secondary school children	98%	100%	100%	100%	87%
Total	**72%**	**85%**	**87%**	**87%**	**91%**

Table 45 Licence to cross busy roads in the different areas

School					
Reported by parents of	Maria n=108	Sjöstad n =84	Sjöäng n=93	Bredäng n=47	Fjärdhunda n=87
primary school children	67%	63%	61%	31%	50%
secondary school children	96%	91%	98%	52%	96%
Total	**82%**	**77%**	**77%**	**40%**	**74%**
Reported by					
primary school children	64%	73%	71%	42%	48%
secondary school children	98%	95%	88%	91%	89%
Total	**81%**	**85%**	**79%**	**64%**	**70%**

Table 46 Licence to use public transport in the different areas

	School				
Reported by parents of	Maria n=108	Sjöstad n =84	Sjööng n=93	Bredäng n=47	Fjärdhundra n=87
primary school children	35%	34%	35%	31%	28%
secondary school children	92%	93%	95%	67%	89%
Total	**63%**	**64%**	**63%**	**47%**	**61%**
Reported by					
primary school children	35%	44%	24%	39%	30%
secondary school children	98%	95%	93%	91%	97%
Total	**66%**	**70%**	**55%**	**62%**	**67%**

Table 47 Licence to go alone to places other than school in the different areas

	School				
”Usually goes alone”	Maria n=108	Sjöstad n =84	Sjööng n=93	Bredäng n=47	Fjärdhundra n=87
Primary school children	16%	32%	29%	31%	48%
Secondary school children	66%	77%	66%	62%	60%
Total	**41%**	**55%**	**46%**	**45%**	**54%**

Table 48 Licence to go outside after dark in the different areas

	School				
Allowed going out after dark	Maria n=108	Sjöstad n =84	Sjööng n=93	Bredäng n=47	Fjärdhundra n=87
Primary school children	38%	46%	26%	8%	55%
Secondary school children	72%	79%	85%	38%	94%
Total	**55%**	**63%**	**52%**	**21%**	**76%**

Table 49a Cycle owners among the children in the different areas

	School				
Reported by parents of	Maria n=108	Sjöstad n =84	Sjööng n=93	Bredäng n=47	Fjärdhundra n=87
primary school children	93%	90%	80%	73%	95%
secondary school children	85%	84%	88%	90%	98%
Total	**89%**	**87%**	**84%**	**81%**	**97%**
Reported by					
primary school children	94%	95%	92%	85%	95%
secondary school children	85%	95%	83%	80%	91%
Total	**90%**	**95%**	**88%**	**83%**	**92%**

Table 49b (Of cycle owners) Licence to cycle on busy roads in the different areas

	School				
Reported by parents of	Maria	Sjöstad	Sjööng	Bredäng	Fjärdhundra
primary school children	2%	8%	20%	26%	29%
secondary school children	51%	61%	81%	26%	72%
Total	**25%**	**34%**	**48%**	**26%**	**52%**
Reported by					
primary school children	19%	49%	64%	18%	63%
secondary school children	78%	93%	97%	59%	95%
Total	**46%**	**71%**	**78%**	**36%**	**80%**

Table 50 (Of cycle owners) Licence to cycle to friends or other activities in the different areas

School					
Reported by	Maria	Sjöstad	Sjöäng	Bredäng	Fjärdhundra
primary school children	53%	81%	77%	77%	84%
secondary school children	86%	91%	88%	89%	88%
Total	**70%**	**86%**	**83%**	**82%**	**86%**

Table 51 (Of cycle owners) Children who cycle more than three times a week in different areas

School					
Reported by	Maria-	Sjöstad	Sjöäng	Bredäng	Fjärdhundra
Primary school children	6%	28%	21%	40%	57%
Secondary school children	8%	19%	22%	7%	30%
Total	**7%**	**24%**	**21%**	**26%**	**43%**

Table 52 More than three hours a day spent at the computer or TV in the different areas

School					
Reported by parents of	Maria n=108	Sjöstad n =84	Sjöäng n=93	Bredäng n=47	Fjärdhundra n=87
primary school children	2%	0%	4%	15%	3%
secondary school children	19%	16%	12%	14%	19%
Total	**9%**	**10%**	**8%**	**15%**	**12%**
Reported by					
primary school children	23%	28%	14%	54%	39%
secondary school children	27%	42%	29%	43%	40%
Total	**25%**	**36%**	**20%**	**49%**	**40%**

Table 53a Children's mode of transport to school "today"

School						
Children's (8-9 years) mode of transport	Maria n=28	Sjöstad n =22	Sjöäng n=30	Bredäng n=14	Fjärdhundra n=18	**Total N=112**
Walked	82%	73%	53%	79%	35%	**65%**
Cycle	0%	0%	17%	0%	6%	**5%**
(School) bus	0%	0%	3%	0%	47%	**8%**
Underground, local train	0%	14%	0%	0%	0%	**3%**
Car	18%	14%	27%	21%	12%	**19%**

Table 53b Parents' mode of transport to school when they were children

School						
Parents' mode of transport to school when they were 8-9 years old	Maria n=108	Sjöstad n =84	Sjöäng n=93	Bredäng n=47	Fjärdhundra n=87	**Total N=419**
Walked	81%	76%	86%	83%	46%	**74%**
Cycle	5%	10%	5%	2%	9%	**7%**
(School) bus	7%	5%	2%	6%	41%	**12%**
Underground, local train	2%	2%	0%	2%	0%	**1%**
Car	3%	4%	2%	0%	0%	**2%**
Other	2%	4%	3%	2%	2%	**3%**
Missing data	1%	0%	1%	4%	1%	**1%**

Table 54 Distance to school for the parents compared to their own children

	School					
How did the distance you had to travel to primary school compare with the distance your child has to travel to primary school?	Maria n=108	Sjöstad n =84	Sjööäng n=93	Bredäng n=47	Fjärdhundra n=87	**Total N=419**
Much less	8%	11%	12%	11%	26%	**14%**
Less	11%	7%	11%	15%	6%	**10%**
About the same	22%	26%	39%	21%	32%	**29%**
Further	31%	29%	22%	30%	29%	**28%**
Much further	26%	24%	15%	21%	6%	**18%**
Missing data	2%	4%	1%	2%	1%	**2%**