The impact of subjective road safety on parents' feeling of risk and their home-school travel choices

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This study addressed the question whether subjective and objective information about road safety affects parents' feeling of risk, and consequently their decision on how to take their children to school. Twelve scenario's were developed, each describing a fictitious city in the Netherlands. In each scenario, objective and subjective information was provided. The objective information varied in three ways, road safety had either increased, decreased, or no information was provided on road safety. Subjective information varied in two ways: the situation was described as either safe, or risky. Finally, in the scenario's, extra road safety measures taken by the municipality were either mentioned, or not. Thus, the study consisted of a 3x2x2 between-subjects design. Feeling of risk was measured by an implicit association task, designed to assess participants' feelings of risk in an unobtrusive way. Also, respondents were asked to indicate their perceived chance of being involved in a road crash. Parents' home-school travel choices was the main dependent variable. A differentiation was made between those parents who preferred to accompany their children to school, and those who would let their children travel to school unaccompanied. Results of the study are discussed in terms of subjective safety, feeling of risk and travel mode choices. Implications are discussed in terms of adverse effects of subjective risk on freedom of mobility.

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Introduction

The effects of road safety policy measures are most often measured by numbers of road casualties. By these road safety measures, the Netherlands is one of the safest countries in the world. Besides objective numbers and figures, more and more attention is given to perceptions, attitudes and opinions of citizens about road safety. These perceptions may affect behaviour, which may in turn affect the risk of accidents. Perceived (subjective) road safety can thus have a relation with objective safety. However, the concept of subjective road safety is a complex one, and there is a lot of discussion about how to measure this in a valid and reliable way.

In the remainder of this paper the terms "subjective road safety", "perceived risk" and "feeling of risk" are used interchangeably.

Subjective road safety and mobility choices

As feelings of risk are unpleasant, most people will try to avoid them. In the case of perceived risk in traffic, this can be avoided or reduced in a number of ways, for example by travelling at a different time, travelling with a different transport mode, at different locations, etc. The avoidance of certain travel modes, routes or times is generally considered a negative development, especially when vulnerable road users are concerned. These groups (e.g. elderly drivers, children) will be more likely to avoid times or places, or even decide not to travel at all. For example, Davidse (2007) showed that older drivers use these avoidance strategies to compensate for a deterioration in cognitive and motor skills. It might also be possible that parents of primary school children decide to take their children to school by car, instead of letting them walk or cycle, in order to avoid exposing them to road hazards. This may lead to an increase of motorized traffic in the school environment. Also, when children are taken to school by car instead of walking or cycling themselves, they do not learn the necessary skills to participate in traffic.

From a traffic policy point of view, it is considered undesirable if feelings of risk lead to avoidance strategies in traffic. Mobility is considered an important part of quality of life. Still, self-regulation of mobility is not always a bad thing. An overestimation of skills or an underestimation of traffic complexity is considered adverse for road safety (Kuiken & Twisk, 2001; De Craen et al., 2008). But when people make realistic assessments of their own skills (or those of their children) and realistic assessments of the complexity of the traffic situation, it may sometimes lead to the fully justified decision not to expose themselves or their children to risk. It might, for example, be a good thing to delay independent traffic participation by young children if they are just too young to handle certain situations. Also, it might be a good idea to discourage older road users to use a certain mode of transport if it turns out they are no longer capable of handling that particular vehicle. If, however, the perception of risk is nót justified; if older users are perfectly capable of driving but are afraid to, or if children are capable of going to school by themselves but are not allowed to by their parents, then an unfavourable situation emerges. In that case, mobility is hampered and this also affects quality of life and possibilities for personal development. This is why it is important to investigate how feelings of risk emerge in vulnerable road users and what effect it has on mobility choices.

Although subjective road safety is increasingly being included in research on road safety, relatively little is known about the origins and effects. So knowledge about the circumstances under which

feelings of risk occur or worsen is scarce. It is important to gain more insight into this, because such feelings can affect mobility and mobility choices. When we know more about the conditions under which such feelings arise, policy measures to influence subjective road safety can be used more effectively. Especially for vulnerable road users it can be expected that feelings of risk lead to different choices in mobility. Therefore it is important to know more about the effects, especially for this particular group of road users. This study is therefore focussed on the choices parents make for the transport of their children.
In the Netherlands, several studies have been carried out on the way parents take their children to school, and the reasons they have for doing so. Van der Houwen et al. (2002) showed that road safety of the route to school is often mentioned as an important reason to accompany children to school instead of letting them travel independently. Other aspects that play a role in this decision are: the age of the child, the distance to school, the urbanisation of the environment, and the transport mode that parents prefers to go to work or other destinations. Still, this type of research leaves the question open how subjective road safety should be weighed against other motives to accompany children to school. Also, it is not clear why these feelings of risk occur.

TNO investigated the relationship between characteristics of the built environment and physical (in) activity of children in their neighborhoods (de Vries, 2009). This study showed that concerns about road safety are important for the extent to which children can and will move freely in their immediate environment. Elsewhere, De Vries states however, that "…parents' perception of road safety is unrealistic (De Vogelvrije Fietser, 2009, p.12). In fact, it is noteworthy that children go to school independently at more and more higher age, while traffic has become more and more safe for children (Rijk, 2008). However, it is also possible that traffic is more safe for children *because* they travel to school alone at a higher age.

Measuring subjective road safety

A recent literature review (Vlakveld et al., 2008) revealed an important research gap in the way subjective road safety and perceived risk is measured. Until now, subjective road safety was mainly been operationalized as self-reported risk perception. The use of self reports is however problematic for a number of reasons. First, risk perception is not always conscious experience and people do not always remember all relevant information at the time the question is asked. Furthermore, subjective road safety is a very broad concept. It is not clear what people actually mean when they state they do not feel safe. Do they feel that way because of the behaviour of others? Is it the road environment, or the complexity of the task? And which cognitive processes are at the basis of these feelings? This makes it difficult to interpret these reported perceptions of risk or safety. Also, sometimes policy measures that have been taken to improve feelings of safety, can have adverse effects. For example, studies have shown that improvements in infrastructure or an increase in police enforcement, may cause people to feel less safe (Janssen & Kraaij, 1984; Pagen & Harteveld, 2006; described in Vlakveld et al., 2008). Possibly, communication about these policy measures may have made people aware of possible dangers. In the same way, the mere question about feelings of risk may cause people to actually feel more at risk.

This is why SWOV attempted to develop a method that is less susceptible to the aforementioned problems. Instead of asking about feelings an perceptions of parents and children about road safety, a quasi-experimental approach was chosen. Several scenarios were presented in which information was varied systematically. By this method, it is possible to investigate the conditions under which parents are more or less likely to let their children travel to school independently, or to accompany them to school.

Research questions

Two questions are central in this study. First, the study aimed to clarify the processes through which processes subjective road safety occurs. The second question is whether safety perceptions

have an impact on mobility choices parents make for their children, or more specifically, whether they accompany their children to school or let them travel independently. Also, the study aimed to develop an innovative research method. In addition to self-reports, in this study an implicit association task is used to measure subjective road safety.

Method

Participants

Participants (N = 765) were parents of children between 6 and 10 years old, who received an invitation by e-mail to take part in a web-based survey. They were recruited by means of an internet panel and thus were used to answer questions in an internet environment. The age range was chosen because around this time parents are deciding about letting their children go to school unaccompanied (Van der Houwen et al., 2002; De Vries, 2009). The mean age of participants was 40,6 years old; 70% was female.

Design

The study was presented as an investigation into the home-school travel choices parents make for their children. Participants were asked to keep in mind their own child, but to try to imaging what they would do if their child was 8 years old. Participants then saw a map in which a route from a home to a school was drawn. This was the situation participants were asked to keep in mind. The distance from home to school was approximately 800 meters.

Participants were then presented with information about a fictitious town called Lonkervoort. The information consisted of objective information (number of inhabitants, schools, number of traffic crashes) as well as personal, subjective information (the opinions of parents and children about the road safety of the school environment in Lonkervoort). The information was provided as a made-up newspaper article (see Figure 1).

Tevreden ouders: "Het gaat de goede kant op!"

- Van onze verslaggever -

Zo eens in de zoveel tijd laait de discussie weer op: de verkeersveiligheid van Lonkervoort. Vandaag staat de Bloemenbuurt in de belangstelling. Deze kinderrijke wijk in Lonkervoort wordt gekenmerkt door het grote aantal scholen.

Ondanks het drukke autoverkeer zijn er nu prima routes om je kind naar school te brengen. Zo zegt Annika de Bruijn, moeder van Amber (9): "Eerder overwoog ik wel om Amber, ook als ze wat ouder is, met de auto naar school te blijven brengen. Maar de laatste tijd is het hier zo veilig geworden, dat ik haar straks alleen laat fietsen. Ze rijden hier rustig genoeg."

Peter Wittenberg, vader van Gijs (9) beaamt dit. Hij vertelt: "Laatst bracht ik Gijs naar school. Toen we wilden oversteken richting het schoolplein, kwam er net een auto aangereden. Deze minderde duidelijk vaart, en hoewel we geen voorrang hadden, het hij ons wel voorgaan. Wat dat betreft is de mentaliteit hier zeker verbeterd."

Ook de kinderen zelf vinden de route tussen school en huis veilig. Wesley (8): "Ik vind het leuk om zelf te fietsen. Er zijn veel auto's en brommers en zo maar ze kijken goed uit."

Wethouder Merkens geeft desgevraagd aan dat er in Lonkervoort sinds vorig jaar extra maatregelen zijn ingezet om de verkeersveiligheid te bevorderen, met name in de omgeving van scholen. Zo wordt door de politie regelmatig gecontroleerd op snelheids- en parkeerovertredingen. Tevens zijn er rond de begin- en eindtijden van scholen klaar-overs aanwezig, om de kinderen te helpen oversteken.

Figure 1: Example of a scenario

The information that was offered, was varied systematically: The objective information was either positive, negative, or no objective information was provided. The subjective information was either positive or negative. And finally, information about road safety measures was either presented or omitted. This added up to a 3x2x2 between-subjects research design with 12 different versions of the scenarios (newspaper articles).Each participant was assigned at random to one of 12 conditions.

Procedure and materials

Participants were presented with a web-based questionnaire. After a screening question to establish whether they were part of the target group, the questionnaire continued. First, they were asked to imagine they lived in the fictitious town Lonkervoort and take a look at the map with the home-school route. They were also asked to imagine their child was 8 years old. Then, participants

were asked to read one of the 12 versions of the newspaper article. After that, the implicit association task started.

Implicit association task

The implicit association task consisted of a word search assignment. In a puzzle (see Figure 2) 79 words were hidden. Participants were asked to look at the puzzle for 30 seconds and search for words. They were then presented with a list of 50 word pairs. For each word pair, they were asked which of the two words they had seen in the word puzzle. In 19 of the word pairs, one of the words could be associated with road safety or risk, as was shown in a pilot study, and was thus considered a stimulus word. In the other word pairs, both words were neutral. In reality, none of the words in the word pair list were part of the word puzzle. The number of times participants indicated they had seen a stimulus word in the word puzzle was used as an implicit measure of subjective road safety.

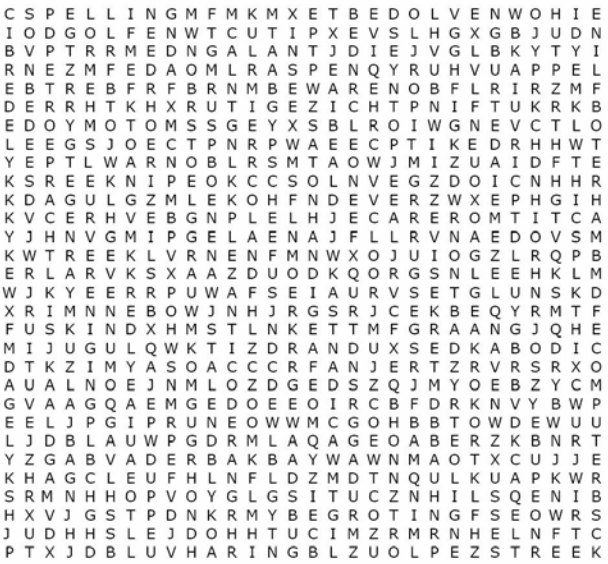

Figure 2: Word search task for the implicit association task

Self-reported perception of road safety

Next, questions were asked about participants' perception of road safety. This was done by means of a series of statements, for example "In my opinion, road safety in school environments in Lonkervoort is sufficient" or "In Lonkervoort, many road crashed occur".

Estimated risk of being involved in an accident

Participants were asked to rate the chances of being involved in a road crash in Lonkervoort. They were asked to indicate this for themselves, for their children, for the average adult and for the average child.

Mobility choices

The question that is central in this study is whether the child will be allowed to go to school alone or accompanied. This can be affected by perceptions of road safety. Participants were asked to indicate what they would decide for their children:

- my child would walk to school alone
- my child would walk to school together with a brother or sister
- I would walk my child to school
- my child would cycle to school alone
- my child would cycle to school together with a brother or sister

- I would take my child to school on my bicycle in a bicycle-mounted child seat
- I would cycle to school together with my child
- I would take my child to school by car

Actual situation
Besides the fictitious information that was provided, there are other aspects that might influence parents' mobility choices for their children. For example, their actual situation (whether they do or do not accompany their child to school in real life) might be important, as well as other background variables (age and gender of the parent and children, level of education, urbanisation of home environment etc). These questions were asked as well.

Results

Background variables

The majority of participants had a medium-high education: 35% had a MBO degree, 25% a HBO-degree[1]. Males were more often higher (HBO or university) educated (42%) than females (27%). Most participants had 1 (23%), 2 (52%) or 3 (19%) children under the age of 18. As one of the criteria to be included in this study was to have a child between 6 and 10 years old, most of the children were in this age range.

Most of the participants are frequent car-users: 43% uses the car as a driver on a daily basis. Also, most of the regular car drivers consider the car very important for their mobility. Participants were asked to indicate their mileage in categories, as most people find it difficult to estimate the number of kilometres they drive annually. Of all car drivers in the sample, 22.9% drove less than 5,000 km/year; 28.2% drove 5,000-10,000 km/year; 21% drove 10,000-15,000 km/year; 12,1% drove 15,000-20,000 km/year and 15,7 % drove more than 20,000 km/year.

In this study, participants were asked to keep in mind their child and imagine it was 8 years old. To see whether the actual age and gender of the child influenced the parent's answers, the actual age of the child was asked. Most of the children that parents had kept in mind were between 8 and 10 years old (71%). The gender of the children was evenly distributed: 51% were boys, 49% were girls.

Manipulation check

At the end of the experiment a number of questions were asked to determine the credibility of the scenarios. Participants were asked to indicate on a seven point scale whether the articles and information about Lonkervoort were credible and whether they felt enough information had been given to make an informed choice regarding the transport of their child. Most participants seemed to find the article about Lonkervoort quite believable. Only a small proportion (16%) indicates that they found the article (somewhat, scores <4) unbelievable. It also seems only a small proportion of participants (16%) had the idea that they did not have enough information to make an informed choice for the transport of their child. Based on these results, it seems safe to conclude that the provided information was sufficient for participants to evaluate the safety of the school environment and to make decisions about the mobility of their children.

Effects of information on subjective road safety

Self-reported safety perceptions

[1] Dutch school systems: MBO is equivalent to intermediate professional education, HBO is equivalent to a higher professional education

There were two main effects of information on self-reported safety perceptions. First, participants who had read subjective information about Lonkervoort that was framed in a safe way, evaluated the school environment as more safe than participants who had read subjective information that was framed in a risky way (F (1, 753) = 228.73, p <0,001, η^2 = .23). Second, objective information also had an effect, albeit much smaller, on self-reported safety perceptions: those who had read statistics about Lonkervoort becoming more safe in terms of road crashes, evaluated the school environment as more safe than those who had read statistics about Lonkervoort becoming less safe (F (2, 753) =3.98, p <0,05, η^2 =0,01). Those who had not received any statistical information about road crashes were in between the two groups, but did not differ from either group significantly. The presentation of road safety policy measures did not have an effect on self-reported safety perceptions (see Figure 3).

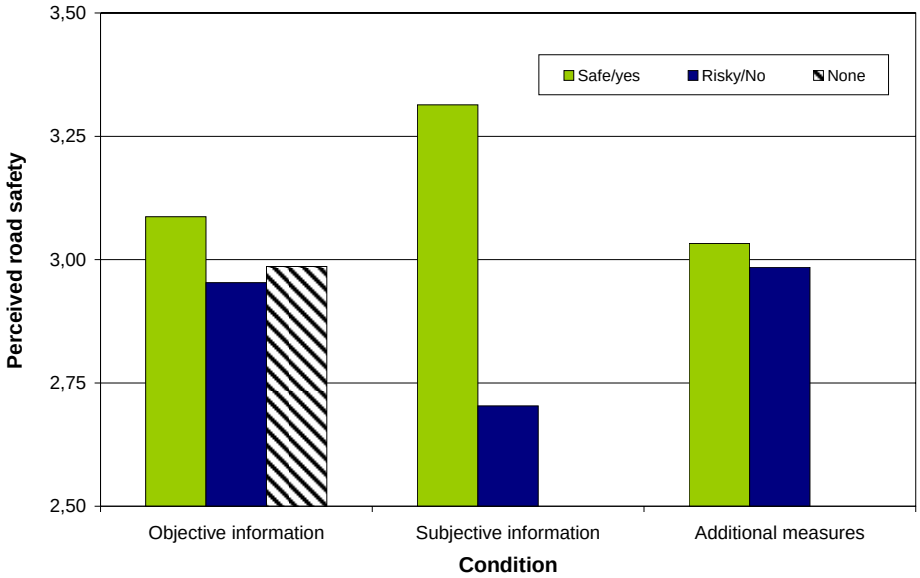

Figure 3: Effects of information condition on perceived road safety

There was no interaction effect between objective and subjective information (see Figure 4). Participants who received subjective information that was framed in a safe way reported higher levels of perceived safety than those who received subjectived information that was framed in a risky way, *regardless* of the objective information that was provided. Thus, self-reported perceptions of road safety are mainly affected by opinions, feelings and personal statements of other people (subjective information). Statistical information about road crashes (objective information) hardly affects this evaluation.

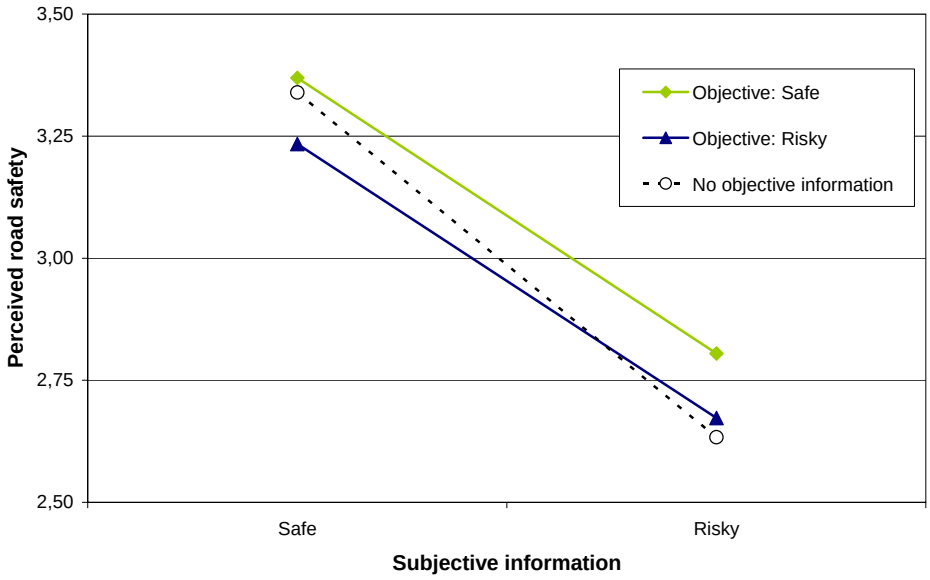

Figure 4: Effects of objective and subjective information on perceived road safety

Implicit association task

The different versions of the information scenarios did not have an effect on the implicit association task: participants who had read subjective information that was framed in a risky way did not reproduce significantly more stimulus words in the task than those who had read subjective information that was framed in a safe way. Likewise, the different versions of objective information and road safety policy measures did not have an effect on the number of stimulus words that were reproduced. The relation between the score on the implicit association task and self-reported perceptions of safety was non-significant as well, even though there was a trend in the expected direction: a higher score on the implicit association task was related to a lower score in perceptions of road safety ($r = -0,06$, $p = 0,08$).

Even though the scores on the implicit association task did not differ between the different information conditions, for the whole sample they were higher than could be expected based on chance. If participants were completely neutral, they would have chosen a stimulus word equally often as a non-stimulus word. The average number of chosen stimulus words would then be around 10 (given the fact that there were 19 word pairs which included a stimulus word). In reality, the average number of chosen stimulus words was 13,51 ($T(764) = 22,83$, $p < 0,001$). The majority of the participants selected more than 10 stiimulus words (see Figure 5). This suggests that taking part of the experiment was enough to prime the concept of road safety within participants; regardless of whether the provided information was framed in a safe or risky way.

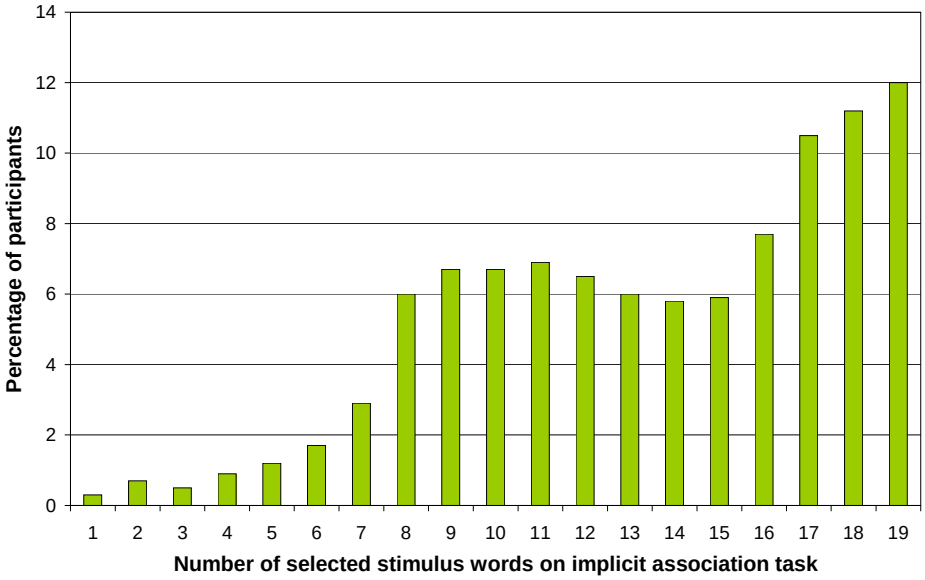

Figure 5: Participants' score on the implicit association task

Estimated crash risk

Participants were also asked to estimate the chances of being involved in a road crash. They were asked to estimate this chance for themselves, for their child, for the average parent and for the average child. Results show that according to participants, children are in general more likely to be involved in a road crash than parents. Also, optimism bias seems to be present: participants think they are less likely to be involved in a road crash than the average parent. Likewise, they think their child is less likely to be involved in a road crash than the average child.

The estimated chance to be involved in a road crash was related to self-reported perceptions of road safety. This association was stronger when the own child and the average child was concerned (R = -.45 and -.46 respectively) than when the parent him/herself or the average parent was concerned (R = -.24 and -.29 respectively). This suggests that when people experience a feeling of risk in traffic, they are more concerned with the safety of their children than with their own safety.

An analysis of variance (ANOVA) was carried out to investigate the effects of the three scenario conditions on estimated chance to be involved in a road crash. Subjective information turned out to have an effect on the estimation of crash risk for the parent him/ herself ($F(1, 753) = 15{,}4$; $p < .001$), the average parent ($F(1, 753) = 22{,}9$; $p < .001$), the own child ($F(1, 753) = 30{,}5$; $p < .001$) and the average child ($F(1, 753) = 39{,}5$; $p < .001$). Those who had read subjective information that was framed in a safe way, estimated the chance of being involved in a road crash as higher than those who had read subjective information that was framed in a risky way (see Figure 6).

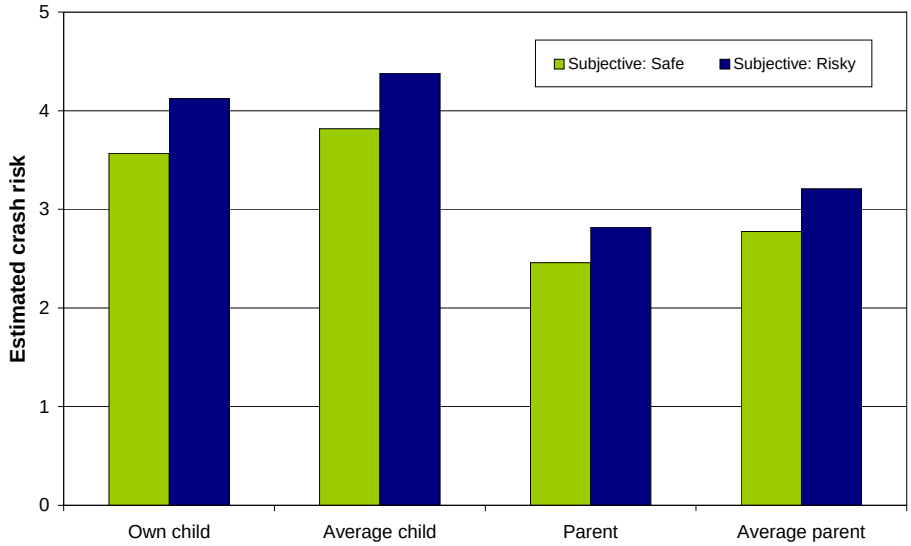

Figure 6: Effects of subjective information on estimated crash risk of parents (self/average) and child (own/average)

Objective information only had an effect on the estimated accident probability for the average parent: participants who had received information about increasing accident rates in Lonkervoort estimated this probability as higher (M = 3,82) than those who had received information that accident rates had been declining (M = 3,17) and those who did not receive any objective information (M = 2.98; F(2,753) = 4,84, p <0,01).

Mobility choices

Effect of information, perceived safety and estimated crash risk

Besides the perception of road safety and the feelings of risk, this study was concerned about the choices parents make to take their children to school, given the information they received about the home-school route and the school environment of Lonkervoort. Participants were asked how they would preferably take their children to school in the described situation. They could choose from several options, such as letting their child walk or cycle alone, accompany them by foot or by bike, taking them to school by car or by public transport. Most parents (79%) indicated that they would accompany their child to school.

To determine under which conditions parents accompany their children to school a Chi-square test was carried out. The relation between the three conditions (objective information, subjective information and information on additional measures) and mobility choices were investigated. Results show that only subjective information influenced this choice ($\chi 2$ (1) = 27.85, p <0.001). Parents who had read subjective information that was framed in a risky way, were less likely (13%) to let their children go to school alone than parents who had read subjective information that was framed in a safe way (29%).

Next, a logistic regression was carried out. A logistic regression is a statistical technique by which the relative effects of several variables on a dichotomous dependent variable can be determined. Subjective information was entered in step 1, perceptions of road safety and estimated accident probabilities were entered in step 2 of the model. Results show that subjective information had an effect on mobility choice, but when the other variables were entered, this effect disappeared (see Table 1). Only perceptions of road safety and estimated accident probability of the own child remained significant predictors of the willingness to let the child go to school alone.

		B	S.E.	Wald	Degrees of freedom	p-value <	Exp(B)
Step 1	Subjective information	0.979	0.189	26.707	1	0.001	2.661
Step 2	Subjective information	0.371	0.224	2.756	1	0.097	1.450
	Self-reported perceptions of road safety	0.774	0.161	22.958	1	0.001	2.168
	Acc probability own child	-0.537	0.156	11.867	1	0.001	0.585
	Acc prob parent	0.188	0.166	1.277	1	0.258	1.207
	Acc prob average child	-0.284	0.168	2.846	1	0.092	0.753
	Acc prob average parent	0.336	0.173	3.760	1	0.052	1.399

Table 1: Results of logistic regression

Other variables affecting mobility choices

Several other variables turned out to be associated with mobility choices. The gender of the parents played a role: fathers were more likely to let their child to go to school alone than mothers ($\chi 2(1) = 11.19$, $p < 0{,}001$). The gender of the child mattered as well: participants were more likely to let their child go to school alone if that child is a boy than when it is a girl ($\chi 2(1) = 5.85$, $p < 0{,}05$).

The knowledge and skills of children is important to decide whether or not to let children go to school independently. Therefore, questions were asked about participants' opinion about the knowledge and skills of their child. Participants were asked to indicate to what extent they agreed to a number of eight statements: for example "I think my child feels safe in traffic", "I think my child has sufficient knowledge about traffic rules" and "I am not sure whether my child should be allowed go to school alone". These statements proved to be a consistent scale ($\alpha = 0{,}80$). Therefore, a new variable was constructed which was labelled "trust in child". Next, a T-Test was carried out, which indicated that parents who accompany their children to school had a lower score on "trust in child" ($M = 3.0$) than parents who let their child go to school alone ($M = 3.8$; $t(2{,}754) = -15{,}8$; $p < 0{,}001$).

Discussion

In this study two research questions were addressed. First, the study investigated through which processes the perception of traffic safety occurs. In order to measure perceived safety in another way besides self-reports, an implicit association task was developed. The second question was what impact this perception has on the mobility choices that parents make for their children. Different scenarios were presented to groups of participants, in order to investigate the effect of these scenarios on perception of road safety and mobility choices. In this chapter the results of this study are discussed.

Effects of information on subjective road safety

Subjective information, in this case personal opinions of parents and children, seems to be the most important predictor of the perception of road safety. Objective, statistical information about road safety and information about additional measures were much less important. The effect of subjective information remained, even if the objective, statistical information gave an opposite message. This is consistent with the conclusions of Hendrickx (1991), who found that personal, colourful information about the course of a specific event affects perceived risk more than general statistical information about the frequency with which certain events occur.

In this study an attempt was made to develop an implicit method to measure perceptions of road safety. This was done because self-reports about risk can make people aware about their feelings, thus inducing feelings of risk just by asking. However, the different versions of information that participants received did not affect the scores on the implicit association task. The implicit association task thus turned out to be not sensitive enough to distinguish between feelings of safety and risk. The task does seem to be helpful in assessing whether the concept of road safety or risk is primed. This is concluded because *all* participants, regardless of the type of information they received, scored higher on the implicit association task than can be expected purely based on chance.

Estimated crash risk

Participants were asked to estimate the probability of being involved in a road crash for themselves, their child, the average parent and the average child. The probability of being involved in a road crash was estimated higher for parents than for children. This seems to imply an illusion of control: participants think adults are sufficiently in control to avoid being involved in a crash, but children are not believed to have such control over the course of events. This is similar to a finding by McKenna (1993), who showed that people estimate the probability of a crash as higher when being a passenger than when being a driver. Apparently, the estimated level of personal control (whether this is justified or not) is important. It seems however the case that participants' assessment is not justified, since the crash risk is lower for children than for adults (SWOV, 2009).

The estimated probabilities were lower for the participants themselves and for their own child, than for the average parent and the average child. This seems to suggest an optimism bias: a well-known phenomenon that implies that the own chances are rated as better than the chances of an average person (DeJoy, 1989).

Estimated crash risk was related to self-reported perceptions of road safety: a lower perception of safety was associated with a higher estimated crash risk. The association was stronger for crash risk of children than for crash risk of parents. this seems to imply that when thinking about road safety, the safety of the child is taken into account more then the safety of the parent.

The type of information that participants received also had an effect on estimated crash risk. Subjective information that was framed in a risky way was associated with higher crash risk than subjective information that was framed in a safe way. This was the case for the estimated crash risk of the parent, the child, the average parent and the average child. Objective information only had an effect on the estimated crash risk of the *average* parent and the *average* child. Obviously, subjective information is realistic to the extent that it may influence other persons, but also ourselves and our children. Objective information on the other hand is more abstract and thus seems to be relevant only for others and not for ourselves.

Mobility choices

The choices parents make with regard to the way in which they take their children to school, were mainly dependent on the subjective information provided. When subjective information was presented as risky, people were less likely to let their child to go to school alone than if the subjective information was presented as safe. Objective information or information about additional measures had no effect. This effect appeared to be influenced by the extent to which parents experience feelings of risk: the effect of scenario information on mobility choices disappeared when feelings of risk are included in the model. This suggests a mediator effect: subjective information is related to perceptions of safety which in turn affects mobility choices. For those participants for whom subjective information does not lead to a feeling of risk, no effect is shown on mobility choices. Feeling of risk is thus a key variable which determines the relation between subjective information on the one hand and mobility choices on the other.

Besides the self-reported perception of road safety, estimated crash risk also played a role in mobility choices. Parents who estimated the crash risk of their child as higher were more likely to accompany their child to school.

The general preference of all participants in this study, is to accompany the child to school instead of letting the child travel alone. This seems to be the result of a generation difference, because most of these participants were not accompanied to school when they were that age their selves. Obviously a transition is taking place (see also De Vries, 2009). Furthermore, the sex of the parent ánd the sex of the child seems to matter in the decision: fathers are more likely to let their child travel alone than mothers, and boys are more likely to be allowed to travel alone than girls. Possibly, this implies a higher exposure and thus a higher risk for boys: Rijk (2008) showed that boys are more often involved in a road crash than girls. On the other hand, there might be more ecplanations for this fact, for example a higher risk acceptance among boys.

This study also showed that when parents have a higher level of trust in their child's knowledge and skills, they are more likely to let that child travel alone to school. This can be the result of the actual knowledge and skills of the child, but also the result of personal differences between parents: some parents might in general have more trust in their children than other parents.

Conclusion

This study showed that the type of information that is provided about a specific traffic location, influences the perception of road safety. Especially subjective information (for examples personal opinions of other parents) will affect this perception. If the information that is provided indeed leads to a feeling of risk, parents are less likely to let their child travel to school alone. Several other factors affect this decision, such as sex of the parent, sex of the child and level of trust in knowledge and skills. The implicit association task did not distinguish between feelings of safety or risk. It could, however, be used to measure whether general concerns or thoughts about road safety are present; be it positive or negative.

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