# DEVELOPMENT OF A CONFLICT OBSERVATION TECHNIQUE

Operationalisation, methodological problems and the use of the technique in two field situations in Delft

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## INTRODUCTION

For logical reasons and on the basis of research it has become clear that urban planning can have a great influence in reducing the number and nature of conflicts between pedestrians and wheeled traffic.
Literature research by SWOV (Kraay, 1974; SWOV, 1976) has shown that measures aimed at influencing social behaviour do not have the desired effect on road safety. They include regulations, technical measures such as zebra crossings, initiatives for childrens' road safety training, information and publicity campaigns.

The most obvious urban planning measure is the physical segregation of traffic categories, the environment being designed so that pedestrian/motorist conflicts hardly occur any more. No law enforcement is needed; it is a clear, comprehensible system conditioned by its design. In other words, physical (urban) design determines and encourages certain traffic-behaviour patterns.

The SCAFT Group in Sweden (SCAFT, 1968) recognise the principle that pedestrian "errors" are of secondary importance in studying pedestrian safety. The main reason for pedestrian unsafety is the traffic environment, which creates situations with a given risk of "errors". The environment should be such that a pedestrian's "error" does not promptly lead to a conflict or an accident.

But such physical segregation has a number of drawbacks:
a) the high absolute cost;
b) the lack of space or the structural impossibility of carrying out specific plans;
c) the difficulty of harmonising the various networks for pedestrians, moped riders, cyclists and fast traffic;
d) the possibility of pedestrians, and particularly children, becoming unused to traffic.

In view of the many social functions of the living environment,

it may be asked whether physical segregation of traffic categories is really desirable.
The strict segregation would impose too many limitations on the numerous kinds of activities and contacts for which the direct residential area is normally used. This gives rise for a new approach to road safety in residential areas, based on integration of traffic categories. The advantages of physical segregation of traffic categories as mentioned above can also be built into such an integration of traffic categories.

A number of cities have made small-scale attempts to integrate traffic categories in a limited number of residential streets. For application in larger areas, the Dutch examples of Delft and Emmen, among others, may be mentioned. They relate both to newly planned residential areas and the renovation of old ones.

The planners' objective in Delft and other towns (in The Netherlands) is: ... to create a residential area for overall and varied use, especially by children, without causing conflicts with other roadusers or, should such conflicts occur, to reduce their severity to a minimum.

Integration of traffic categories has led to the setting up of so-called "residential yards".

Residential yards are areas where the space open to the public should first of all do justice to its function as a place of sojourn for walking and playing; only local traffic is permitted in them (VNG, 1975).
In contrast to incidental facilities (such as simple thresholds, localised narrowing of carriageways, etc.), this requires a systems approach in which areas are designed or redesigned as residential yards. They involve a system of physical facilities in and upon the area open to the public. The function of a residential yard differs particularly from that of a traditional

street in that the same paved area can be and is used (partly) for activities such as driving, playing, cycling, walking and parking. In a traditional street, even the carriageway is often used for walking and playing, though this is not allowed by law.

These newly evolved ideas in designing residential areas involve several peripheral requirements.

If the traffic density is very high (more than about 150 private car units per peak hour) and if there is excessive parking as compared with building density, yards will not provide the answer. For such localities other solutions will have to be found.

From the viewpoint of recognisability and psychological load upon road users, it seems preferable for a residential yard to comprise more than a single street or street section,

One of the ideas is that the layout of the area should make wheeled traffic move at the proper (low) speed. The introduction of special regulations and the placing of signs indicating these regulations are the legal finalisation of the work of urban planners and traffic experts (See Annexes A and B).

If the effects of such urban planning are to be measured against the residents' behaviour and road safety, the question arises of how this can be done. The following chapter goes into this.

## 1. NEED FOR RESEARCH

The need for research can be subdivided into:
a) subjects for research;
b) the research method.
As regards subjects for research, pedestrian research priorities are being concentrated more and more on residential areas. Dutch research (SWOV, 1975) has shown that up to the age of twenty-one years, most pedestrian fatalities occur at the age of three.

American research (Snyder & Knoblauch, 1971) and Dutch research (CBS, 1975) indicates that about three-quarters of the accidents involving children occur within 500 metres of the child's home. The emphasis here is on the effects of various urban planning projects on young pedestrians' behaviour and safety.

As regards the research method, one can firstly concentrate on direct evaluations of specific residential areas. After this, it is advisable to compare the yard solution and its effects on traffic behaviour and road safety with other urban planning solutions.

The following can be said as regards research methods.

Since very few traffic accidents occur in a residential area and there are problems of reliable collecting, recording and analysis of road accidents, it is impossible to use the accident as a criterion for short-term road safety research.

Another indicator in the concept of road safety is perhaps the near-miss, or serious conflict behaviour between two road users. This assumes that serious conflicts are potential accidents, they include the possibility of accidents.

As regards the validity of this method as an alternative criterion for accidents in statistical road safety research, the following can be stated: literature on this subject shows that

there is no close correlation between conflicts and accidents. Better results are obtained by considering only serious conflicts (Oppe, 1975). But so far research on this has been only on a limited scale.

This chapter will briefly summarise a number of advantages and disadvantages of both accident analysis and conflict analysis as found in the literature.

The intention is to learn more about the possibilities of both types of analysis as regards road safety and what problems they involve.

Disadvantages of accident analysis

1. Accident data only contain information on recorded accidents and not, therefore, on the unrecorded ones.
But only a part of all accidents are recorded. Calculations by SWOV suggest that only one-third of the actual number of traffic accident in The Netherlands are recorded (SWOV, 1972).

2. Since accidents are comparatively rare, it is often impossible to obtain sufficient reliable accident data.
The time needed to collect enough accident data for statistical processing is too long in many cases. Furthermore, different conditions and circumstances may occur during a lengthy period of collecting accident data.

3. The present standard records do not comprise any detailed information.

Possibilities of analysis with the conflict method

1. Many measurements can be made in a short time.
2. Conflicts can be classified numerically according to manoeuvring behaviour.
3. Conflict scoring can often be made reliable by training

observers and/or using film and video material.
4. Measures for improving road safety can be taken quicker on the basis of information from conflict methods provided the method is valid.
5. The conflict method is applicable particularly with low-traffic densities where the accident level is likewise low.
6. Reduction of conflicts as the consequence of measures can be demonstrated quickly by means of before and after studies.
7. They can facilitate and improve thorough research into black-spots, provided the method is valid.
8. The supply of information to the authorities (police, traffic experts) and to road users themselves; it often happens that residents ask for action to be taken and the authorities cannot evaluate the traffic situation.
9. The conflict method allows specific information to be obtained per vehicle categories, vehicle flows, etc; in other words as sub-classifications.

Disadvantages of the conflict method

1. The most usable techniques are often still strongly subjective as regards conflict scoring, especially as regards the severity of the conflict.
2. All the techniques still have too little (or inadequately researched) correlation with accidents to be used as an alternative criterion to accidents.
It is advisable to limit their use to situations were there are few accident statistics available or where an initial impression of the situation is required.

Some points in question in the conflict/accident relationship

1. From the results of a number of studies it can be said that conflicts are (significantly) related to accidents. The problem is that, although this relationship is significant, it is too slight to substitute conflicts for accidents, and that the correlation can largely be explained by the dependence of conflicts

and accidents of traffic densities.

2. The validity of the conflict method as an alternative to accident research can be verified only with recorded accidents; but accident records are incomplete (except for fatal accidents).

3. For verifying this validity, conflicts in average traffic flows in a specific period of time are usually taken, while the actual flow at the moment conflicts are measured may differ very greatly from the average; the same problem may apply to accidents.

4. In cases in which only serious conflicts are taken, statistical methods have been simple, especially rank correlations with only a limited number of observations.

5. How many accidents are needed in order to obtain a representative picture of, say, an intersection, such that every type of accident that may happen there can be estimated? The same problem may apply to conflicts.

6. If accident data are collected for a number of years and conflict data are collected at this moment, to what extent are the traffic situations then still comparable as regards density, traffic structure, etc.

7. Can an estimate of expected accidents be made from actual accidents?

8. Can conflicts be used to make an accurate estimate of the expected number of accidents?

9. Is a statistically reliable estimate based on the number of conflicts a better indication of the number of expected accidents than a statistically less reliable estimate based on accidents themselves?

10. Most conflict techniques relate to vehicle relationships, while the technique from the Lund Institute of Technology (Sweden) covers all road-user categories. Do pedestrian/other traffic relationship demand a different conflict method from vehicle/vehicle?

The fundamental question beyond all these problems is: should a serious conflict be regarded as an <u>alternative</u> to the road accident indicator, or is it a <u>different</u> or supplementary indicator of the concept of traffic safety or even of a different concept such as

the overall living conditions in a traffic situation (Figure 3)? Further research is required into these questions.

Summarizing:

Since validity in the various investigations is still not very great, it would seem advisable firstly to make a given technique reliable enough (because this is the primary requirement for a measuring instrument) so that it will ultimately benefit validity (Oppe, 1976).

The foregoing implies that no opinions can be expressed yet regarding road safety if urban planning projects, inter alia, are to be evaluated by means of a conflict technique. By using a conflict technique, reliable information can, however, be obtained on certain types of encounters that occur, for instance, in a residential area.

Since the various conflict techniques have not so far proved sufficiently reliable or valid in most cases, it is advisable to use them in situations where very few accident statistics are available, or where an initial impression of the situation is wanted. These techniques are also useful for hypothetical research.

## 2. OBJECTIVE OF THE RESEARCH

As stated in the foregoing, there have been new trends in urban building in The Netherlands for some years; they relate both to the renovation of old city areas and the design of new residential areas.

Research in other countries (SWOV, 1975) has shown that urban planning and infrastructural measures affect residents' behaviour more than statutory codes and the influencing of social attitudes and behaviour, for instance by means of publicity, information and campaigns. This has implications regarding the overall living conditions in residential areas, of which traffic behaviour and road safety form a part.

In this, SWOV has the task of keeping track of these trends and of evaluating them in terms of road safety.

The main objective of the research is to develop a conflict observation technique which, as a reliable measuring instrument, can be used in various urban planning designs to establish road users' behaviour. It does not, therefore, concern the method's validity.
The research was concentrated on children, as they are the most intensive users of the residential area.

The research was put out to contract to The Netherlands Institute for Preventive Medicine TNO (NIPG-TNO), Leiden, and was carried out by V.A. Güttinger, (NIPG-TNO, 1975 and 1976).

## 3. THE RESEARCH: OPERATIONALISATION AND RELIABILITY

### 3.1. Concept operationalisation

In this research an encounter is defined as a reaction by a party, or both of the parties involved in a traffic situation towards the other, with a distance of 20 metres or less between those involved.

The various types of encounters are defined as follows:
1. Serious conflict: a sudden motor reaction by a party, or both of the parties involved in a traffic situation towards the other, with a distance of about 1 metre or less between those involved.
2. Conflict: a sudden motor reaction by a party, or both of the parties involved in a traffic situation towards the other, with a distance of about 2 metres or more (maximum 20 metres) between those involved.
3. Intensive contacts/conflict: a motor reaction in between a sudden and a non-sudden reaction by a party, or both of the parties involved in a traffic situation towards the other, with a distance of about 1 metre or less between those involved.
4. Contact/conflict: a motor reaction in between a sudden and non-sudden reaction by a party, or both of the parties involved in a traffic situation towards the other, with a distance of about 2 metres or more (maximum 20 metres) between those involved.
5. Intensive contact: a non-sudden motor reaction by a party, or both of the parties involved in a traffic situation towards the other, with a distance of about 1 metre or less between those involved.
6. Contact: a non-sudden motor reaction by a party, or both of the parties involved in a traffic situation towards the other, with a distance of about 2 metres or more between those involved.

One should realize that any definition has its limitations. This research has tried to give a definition of a serious conflict

which would on the one hand be as close as possible to a traffic accident and be measurable, and on the other hand would provide sufficient numbers of serious conflicts to enable the problem to be investigated.

One might ask whether operationalisation of serious conflicts with the aid of a sudden motor reaction is really the correct approach for a serious conflict, since sudden motor reactions do not always necessarily take place in order to avoid an accident!
The point of departure in this research was the idea that an accident is the result of a reaction that was too late by one or more road users and not of no reaction at all. If there are no reactions, there is nothing to investigate with the conflict method.

The criterion of "sudden" has been determined empirically. With the aid of 27 video-recordings of encounters between pedestrians and other traffic, ten observers had to score reactions on a seven-point scale ranging from more to less sudden. A discussion resulted in a detailed list of criteria that could be used to identify three types of reactions (of different kinds of road-users) sudden- in between - non sudden. Next the same ten observers evaluated the 27 video recordings on this three points scale, using the list of criteria.

A second group of ten observers were given the same instructions as the first group for the second task, i.e. scoring on a three-point scale. In total, they scored the 27 video recordings three times each in a random sequence.

Besides this evaluation, it was noted for each of the 27 recordings which road users were involved and what traffic situations they related to.
Correct observation of the road users involved in a traffic situation hardly causes any problems.

As regards concept operationalisation, another question remains: How close is this definition of a serious conflict to a real accident (Figure 2)? Since different residential areas may also have different trends, from encounters to severe accidents, one may wonder whether this definition of a serious conflict is a guarantee of being close enough to a real accident. It is quite possible, for instance, that in neighbourhood A the number of minor conflicts is greater than in neighbourhood B though there are fewer accidents. It will then depend on the position on the scale, from minor conflict to accident, whether neighbourhood A or neighbourhood B is more hazardous. The position on the scale is determined by the definition of a serious conflict.

This study does not go further into such questions about the method's validity. The primary aim is to make the technique more reliable, so that the question of its validity can be investigated better afterwards.

### 3.2. Reliability tests

Five basic types of traffic situations were selected (Figure 1). The observers' average percentage errors in evaluating the traffic situations were 5.8, 5.9, 4.1 and 2.4 respectively for the various scoring sessions (See Table 1).

The reliability tests distinguished between pedestrians', cyclists', moped-riders' and motorists' reactions.

#### Pedestrians' reactions

The basic data, percentage agreement, average scores and distributions are given in Annex III-VI.

As regards the observers' external reliability (i.e. the reliability between the observers) with respect to pedestrians' reactions, the following is found:

- the average correlation (calculated with z-transformation) between the observers in Group I, Section 2, is: $\bar{r}$ = .91 (Table 2a);
- the correlation between those in Group II, Session 1, is: $\bar{r}$ = .87 (Table 2b);
- that between the observers in Group II, Session 2, is: $\bar{r}$ = .87 (Table 2c);
- that between the observers in Group II, Session 3, is: $\bar{r}$ = .86 (Table 2d).

As regards the observers' internal reliability (i.e. the reliability of the same observer for different sessions), the average is .95. Three observers had a pronounced adverse effect on this score (Table 3).

If only the pedestrians' sudden reactions are considered (in nine situations) it is found that the ten observers in Group II, Session 1, made 12 errors (out of a total of 90 scores). Group II, Session 2, made 9 errors and Group II, Session 3, 18. One observer made half of all the errors, i.e. observer 8 with 9 wrong scores (Tables 4a, 4b and 4c).

Reactions by other traffic

Basic data, percentage agreement, average scores and distributions are given in Annex II.

As regards the observers' external reliability with respect to other traffic, the following is found:

- the average correlation between the observers in Group I, Session 2, is: $\bar{r}$ = .86 (Table 5a);
- the correlation between those in Group II, Session 1, is: $\bar{r}$ = .75 (Table 5b);

- that between the observers in Group II, Session 2, is: $\bar{r}$ = .75 (Table 5c);
- that between the observers in Group II, Session 3, is: $\bar{r}$ = .79 (Table 5d).

As regards the observers' internal reliability, the average is .85 (Table 6).

If only other road users' sudden reactions are considered (in five situations), the ten observers in Group II, Session 1, are found to have made 15 errors (out of a total of 50 scores). Group II, Session 2, made 17, and Group II, Session 3, 13 (Tables 7a, 7b and 7c).

Since a test-retest method was used, it is advisable in the event of future research to use two equivalent but different tests in order to avoid the first interfering with the second.

### 3.3. Conclusions from reliability tests

Looking at the results, we can say that recognition of the road-user categories involved in traffic situations causes no difficulties. The type of situation in which they are involved can also be properly evaluated, especially if the instructions are modified on a specific point in order to avoid unnecessary duplicate scoring.

The most important question is, of course, whether the operationalisations of the reaction aspect of the concept of a conflict lead to reliable results.

As regards the reaction of pedestrians involved in traffic situations, this question can be answered in the affirmative. Situations in which the pedestrian reacts "suddenly" are identified fairly well, while reactions are hardly ever wrongly evaluated as "sudden". The results of evaluating cyclists', moped riders' and motorists' reactions are less good. The number of unidentified "sudden" reactions seems too great, just like

the number of "false positives".

Whether the correlation coefficients of external reliability, varying from .75 to .87 are acceptable, remains questionable. In many cases, a reliability of over .95 is required. Internal reliability is moreover distorted because the same, and not equivalent situations, are presented each time. Moreover, the correlations must be assessed with some caution because they are really rank-order statistics.
The correlation has been calculated only of the scores of the classification in three categories, sudden, non-sudden and a category in between.

Ought it to be concluded from these results that the method is not very suitable for field research? Some of the results are undoubtedly sufficient to good. As regards the poorer results, the reason for these is known: inadequate instructions on some points and, especially, some poorer quality observers. The used operationalisations appear to be very suitable for field research, provided the following measures are taken:

(a) Improved instruction

A number of errors in evaluating the situation are attributable to poor instructions.

(b) Observer selection

The observers employed for this research were selected in no way whatsoever: the first twenty students who applied were simply taken on. They were ultimately found to include good observers, but some poor ones as well. Two in particular were responsible for a large number of errors.
With the aid of the duties given to the reliability group (scoring from video recordings after instruction) it is possible to select potential observers for field research.

(c) Training

The observers were untrained, Prior to evaluation, they had half an hour to familiarise themselves with the written list of criteria for road users' reactions.
Training of - selected - observers with video recordings and in the field will make the method more reliable.

(d) Motivation

The observers' motivation is difficult to judge. Most of them were very probably motivated purely by the financial aspects of taking part in the project. The question is: is payment enough to keep up motivation in a rather dull job (evaluating the same recordings three times in the case of the reliability group). Their motivation could probably be increased if observers in field research were not only paid but were remunerated in some other way as well. For instance, students might be allowed to treat participation in such field research as part of the practical work for their studies, or perhaps as material for papers submitted for examination purposes.

## 4. USE OF THE TECHNIQUE IN FIELD RESEARCH

As stated before, there are new trends in urban planning in The Netherlands. Besides this, research in other countries shows that urban planning and infrastructural measures have more influence on residents' behaviour than behavioural regulations and measures aimed at influencing social attitudes and behaviour. This has implications upon the overall living condition in residential areas, of which traffic behaviour and road safety form only one part.

A newly developed conflict observation technique should therefore be applicable in residential areas differing in their town planning aspects. Two neighbourhoods in Delft were taken, a traditionally built residential area and a residential yard. The investigated residential area Gillis was built in 1968. This area is one of the first attempts to design a residential yard. It should be realized that at that time no regulations did exist with respect to residential yards, These regulations were introduced in September 1976. Up till now the residential area Gillis did not yet get the official status of a residential yard.

The first neighbourhood (a residential yard), Gillis, covers an area of 7.5 hectares; there are 528 families with an average of 1.67 children per family. The other neighbourhood, Fledderus, covers 8 hectares; there are 426 families with an average of 1.07 children per family.

Gillis mainly has four or five-roomed apartments, while Fledderus mostly has three or four-roomed ones. Gillis has a total of 880 children, and Fledderus 456. Traffic densities near the schools and neighbourhood entries and exits in Fledderus are much higher than in Gillis (Table 8).

Fledderus was planned on traditional lines, including conventional

traffic segregation (street and pavement) and tidy beds of greenery, plots (not for walking on) and paths.
Gillis was planned on the lines that the entire residential area should be usable and should also encourage its varied use. In other words, there are lawns that may be walked on, while the usual pavement - kerb - gutter - carriageway was changed into footpath - mole drain - carriageway, so that pedestrians, children at play and cyclists can use the entire space. Motor traffic is curbed by a number of physical obstacles (humps in the road and trees) and psychological obstacles (for instance pavement tiles in the carriageway).

These investigations did not use film or video recordings.
The drawbacks of these are:
(a) The cameras have to be moved about frequently in order to obtain a proper idea of the entire area; there were no opportunities for good siting;
(b) The cameras have to be concealed, in order not to influence the normal course of events; this was not possible everywhere.

There were both personal and sector observations.
In personal observations, a child is followed for a maximum of 30 minutes. In the event of an encounter with a road user, this is characterised by reference to a number of variables. If a child leaves the research area (by going indoors somewhere or leaving it) observation stops.
In the case of sector observations, a number of sectors are observed every day during a fixed period. Each encounter during the observation period is recorded in terms of a number of variables. Sectors observed in this way are: areas near elementary and infants schools in both neighbourhoods and two entries and exits for both neighbourhoods.

As the period available for these investigations was short, there was no time to check the reliability of this observation technique developed under experimental conditions under field conditions as well.

After the fieldwork, however, the observers were tested again to check the reliability of their scoring by reference to the same 27 video recordings. As regards pedestrian reactions, one observer's evaluation of the various traffic situations and also the consistency between the respective observers' scores proved to be good.

The average correlation with the "sudden" criterion was $\bar{r}$ = .97. The average correlation as between the observers was $\bar{r}$ = .94. (Tables 9 and 10).

As regards evaluation of other road users' reactions the average correlation with the "sudden" criterion was $\bar{r}$ = .97 The average correlation between the observers was $\bar{r}$ = .93 (Tables 11 and 12). A drawback was that five observers scored with the same 27 video recordings; but this was ten weeks after instruction.

Because reliability was not verified in the field situation but afterwards, the following notes may be added:
(a) difference in scoring may exist between video training and field observation, since:
- video is two-dimensional and the field three-dimensional;
- sound effects exist in the field but not with video;
- in the field, there is a larger visual angle of observation than with video;

A possibility for further research is to have observers work in the field and to make simultaneous video recordings of this. Next, the same observers could evaluate the video recordings at a much later time, or other observers could be asked to evaluate them.

(b) the criterion of a "sudden motor reaction" may also be observed differently under field conditions in residential areas

with different designs (for instance in neighbourhood A a running child may suddenly stop at the kerb, while in neighbourhood B where there is no pavement the child is in the driving area).
A counter-argument can be found in the available figures.
A difference in evaluation is unlikely to relate to traffic situations 4 and 5 in particular and not to the others (cf. the subdivision of traffic situations into serious conflict and encounters).
The differences found in serious conflicts as between the neighbourhoods are more likely to relate to objective conditions.

Disregarding the reliability of the conflict observation method, it appears to be quite usable in the field. Initially the observers affected the childrens' behaviour. This effect disappeared after approximately one week. In those cases when the observers influenced the childrens behaviour the results were removed from the material.
Assuming that the method is also reliable in the field (there are several indications of this in view of the figures) a number of interesting differences in traffic behaviour emerge as between the neighbourhoods and the types of encounters in them.

## 4.1. Some field research results

As stated earlier, the field research covered both personal and sector observations. The principal results are given below. Notes have also been added in a number of cases.

### Personal observations

As expected from the urban design of the neighbourhoods, more children in the residential yard Gillis are involved in encounters with road users than in Fledderus. The average number of encounters per child in Gillis is also higher (Table 13).

Classification by types of encounter (Table 14) shows both absolutely, and relatively to the total number of encounters, that serious conflicts between children and other road users occur more in Gillis than in Fledderus. The same applies to the number of contacts. One-third of the encounters in Gillis are contacts.

It is notable that no diminishing sequence can be detected from contact to serious conflict.

Note: Earlier research by NIPG-TNO (1974) showed that more children in Gillis play out-of-doors than in Fledderus. They were moreover followed on average rather longer than in Fledderus. The conclusions do not change after correction for this difference in time.

As regards the type of vehicle with which children are confronted: in Fledderus, mostly cars are involved in encounters with children, whereas in Gillis not only cars but also cyclists play a major part in encounters. Other types of traffic play a minor part in both neighbourhoods at least in encounters with children (Table 15).

As regards serious conflicts, however, very often cyclists were involved in these encounters in both neighbourhoods, which is all the more remarkable in view of the accident statistics, in which cyclist accidents occur to a different (lower) extent (Table 16). On the one hand, this may indicate poorer recording of pedestrian accidents involving cyclists; on the other hand, perhaps the correct concept operationalisation was not chosen. Yet, relatively to traffic densities, there are more serious conflicts with cars (especially in Gillis) than with cyclists.

As regards age groups, most conflicts occur with children in the 5 to 10-year age group. The average number of serious conflicts per child per hour's playing out-of-doors is highest for

children from 11-15 years in Gillis (Table 17).

Earlier investigations by NIPG-TNO (1974) in these two neighbourhoods showed that children in the 0 to 4 age group in Fledderus are accompanied more than in Gillis. This might explain why this category in Gillis is more involved both in encounters and serious conflicts.

These investigations distinguished five different traffic situations (Table 18). It is found that serious conflicts in Gillis occur primarily in traffic situations characterised by the change-over from a pedestrian area to a driving area. In Gillis, children are easy to see if they are in the driving area. But if they go into the area from the closely grown shrubbery and trees they appear rather unexpectedly to the other traffic. In Fledderus, however, children on the pavement are generally easy to see.

Sector observations

In Fledderus infant and elementary schools are situated along the carriageway with shrubbery and a pavement. In Gillis the infant school is separated somewhat from the roadway by a fence and the elementary school playground, but in fact forms part of the roadway.

There is a pronounced difference in type of encounter near the infant schools as between the two neighbourhoods, especially in serious conflicts. This pattern is largely determined by the great extent to which children in Fledderus are accompanied by adults (Table 19). The difference between the two areas as regards children accompanied by adults is very clear: 51% compared with 20% (Table 20).

The differences found for infant schools do not exist for the elementary schools (Table 21). There are no distinct differences between Gillis and Fledderus as regards number and types of en-

counters between children and wheeled traffic near elementary schools. It is striking that in Fledderus 26% of the children are accompanied by adults and in Gillis only 6%. Perhaps accompanying elementary school children is less effective and less necessary than for infant schoolchildren. Besides, the evident nature of traffic situations round the infant and elementary schools might play a part in this. This is better in Fledderus than in Gillis; Fledderus schools together have 7 serious conflicts, while Gillis has a total of 14.

As to the places of the encounters, the following is found. In themselves, these differences are not unexpected. The fact that 49% of encounters at the infant school and 52% of those at the elementary school in Gillis occur in situations where the child is on the carriageway (Situations 3 and 4) is logical, since the carriageway is part of the usable area. In Fledderus such situations are less common: 22% and 52% respectively for infant and elementary schools (Table 22).

Serious conflicts occur at the infant school in Gillis just when children (whether or not with adults) go on to the roadway; 8 out of 10 serious conflicts occurred where an area not observable by traffic merges with the carriageway.

Serious conflicts at the Gillis elementary school occur at the moment the child is already on the carriageway. Out of the five serious conflicts near the elementary school in the Fledderus area four occurred during crossing. The reason might be that the children were invisible because of parked cars.

If serious conflicts are arranged according to type of vehicle, it is striking that, after cars, cyclists are involved in serious conflicts, in contrast to mopeds (Table 23).

After considering the areas round school entries and exits, attention was paid to the neighbourhood entries and exits,

because they are the location of intensive movement of both children and moving vehicles especially at peak hours.

Examination of the number and type of encounters in both neighbourhoods gives the following pattern (Table 24). In absolute terms, most serious conflicts occur at one entry. Compared with the other entries, traffic density is very low here (three times) and the number of children at play very high (about three times). The difference in serious conflicts between entries may be due to the insurveyability of the traffic situation at one entry (F1), especially for incoming traffic.

The above numbers are too small and the technique is still experimental; no hard and fast conclusions can therefore be drawn from the results.

To sum up, as regards both person and sector observations the following comments can be made:

(a) The residential yard solution in Gillis does not lead to fewer serious conflicts than the conventionally designed Fledderus.

(b) In Gillis there are more encounters than in Fledderus. This is obviously due to traffic integration.

(c) The design of the Fledderus area is such, owing to traffic segregation, that wheeled traffic has priority. Here parents supervise and accompany their young children more than in Gillis, so that children in Fledderus have fewer encounters or serious conflicts with wheeled traffic than in Gillis. This is clearest of all in the 0 to 4 age group, who are most accompanied by adults in Fledderus. SWOV research (SWOV, 1975) shows that the 3-year group is most involved in traffic fatalities.

(d) In Gillis, the design of the area makes children visible only when they are on the wheeled traffic part. Anticipatory reactions by moving vehicles are hardly possible if children appear from the closegrown shrubbery, run round corners of blocks of flats or hide behind obstacles intended for wheeled traffic. The same pattern applies to anticipatory reactions by children. This is in fact a subjective interpretation of the research results by the researchers.

(e) The research workers assumed that the severity of the consequences of any traffic accidents would be less in Gillis because its design would compel wheeled traffic to move slower than in Fledderus. Nevertheless, timings have shown that the speeds of cars, mopeds and cycles in both areas hardly differ from each other (Table 25).

## 5. FINAL COMMENTS

In recent years there have been new developments in urban planning leading, among other things, to the design of residential areas as residential yards.

Research on pedestrians has been concentrated increasingly on residential areas. More and more thought is being given to finding an alternative to accidents as a means of predicting road safety. A number of countries are endeavouring to develop the conflict method as an alternative to accident studies.

Efforts have also been made in The Netherlands to develop a reliable conflict observation technique. At this stage, the following can be said:

(a) This research has demonstrated that with the technique developed, an amount of information can be collected within a fairly short period, which gives a good idea of what happens in a residential area.
The reliability of the technique will have to be improved further both experimentally and in the field.

(b) Since the research concentrated on developing a reliable technique, little can be said at present as regards its validity, i.e. whether serious conflicts can also be suitably used to predict traffic accidents. Any expression of opinion regarding road safety is not therefore appropriate at this point.

(c) Instead of expressing any opinion on road safety, this research does give a number of indications regarding certain types of encounters in residential areas. This will enable town planners to obtain more insight into the effect upon the various road users. They can modify their plans quickly and endeavour to improve undesirable traffic situations.

Since the various conflict techniques have so far mostly proved insufficiently reliable or valid, it is advisable to use them in situations where few accident statistics are available or where an initial impression of the situation is required.

As regards the reliability of the conflict observation technique, the following problem areas require further research:

1. The reliability of this technique, developed under experimental conditions, should be improved. Selection of observers, improved instruction and training will have a favourable effect upon this, as was proven in the field research.

2. Its reliability will also have to be determined under field conditions. Some problems arising in this respect are already indicated in Section 4.

3. If this technique is also to be used for measuring serious conflicts involving cyclists and moped riders, it will have to be examined whether it has to be adapted or whether alternatives have to be developed.

Literature research by Oppe (1975) shows that the correlations are significantly reduced if conflicts with pedestrians are removed from the validity tests.

4. As the method concentrates on establishing children's traffic behaviour, it will have to be examined whether it can be used for adult pedestrians as well.

In addition to developing the technique's reliability aspects, a start will have to be made with validity research.

Much development work has to be done before these techniques can be generally applied.

Finally some remarks have to be made with respect to the so called residential yard solution in Gillis.
The investigated residential area Gillis, built in 1968, is one of the first attempts to design a residential yard. It should be realized, however, that at that time no special regulations did exist, with respect to residential yards. These regulations (see Annexes A and B) were introduced in September 1976. Up till now the residential area Gillis did not get the official status of a residential yard.

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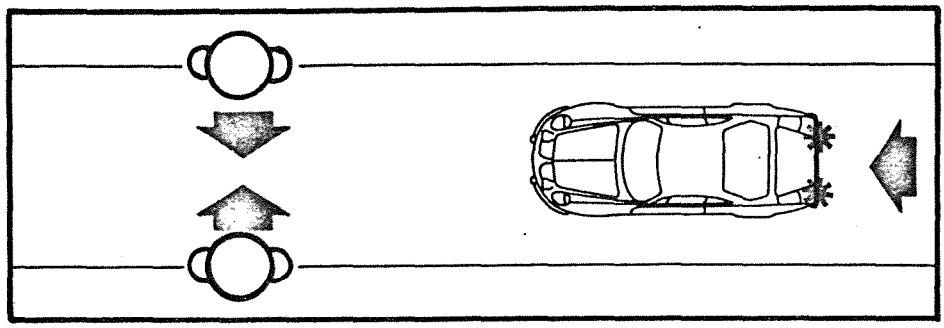
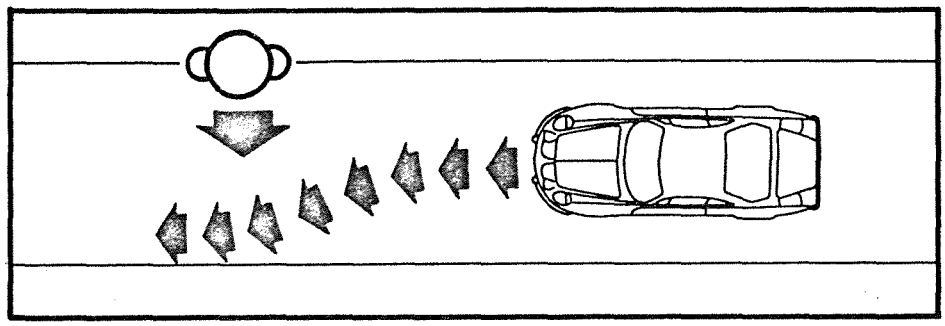
* Only in Dutch.

FIGURES, TABLES AND ANNEXES

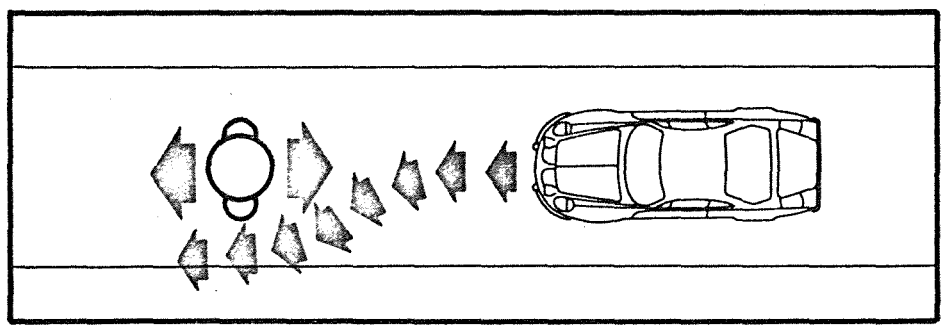
Figure 1, Tables 1 to 24 and the Annexes III to VI are taken from NIPG-TNO (Güttinger) 1975 and 1976.



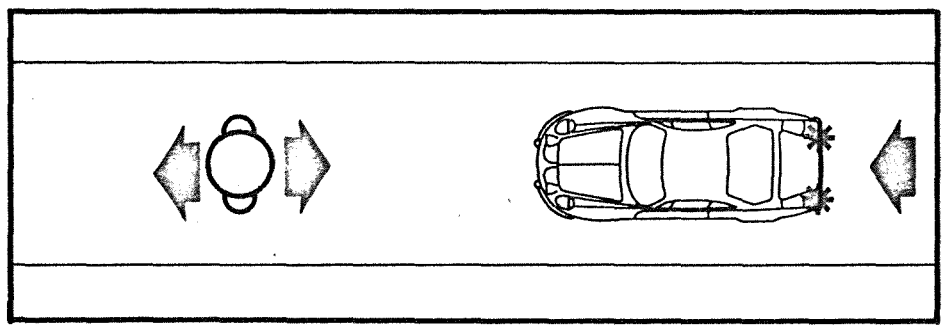
Type 1
Traffic brakes and may stop



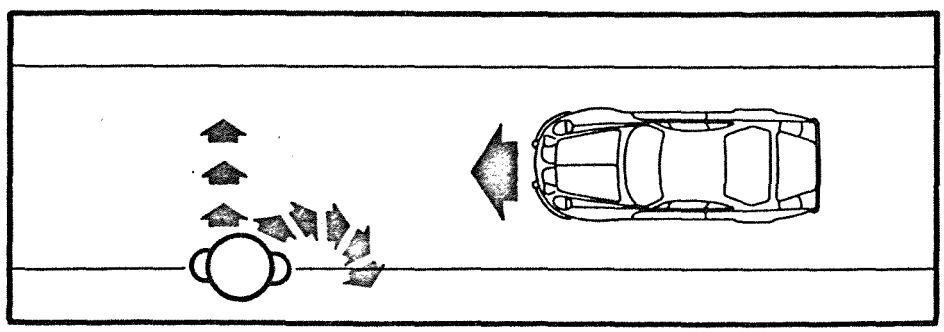
Type 2
Traffic changes track



Type 3
Traffic changes track. Pedestrian walking, standing, sitting on street.



Type 4
Traffic brakes and may stop. Pedestrian walking, standing, sitting on street.



Type 5
Pedestrian crosses rapidly or turns back.

Figure 1. Five basic types of traffic situations.

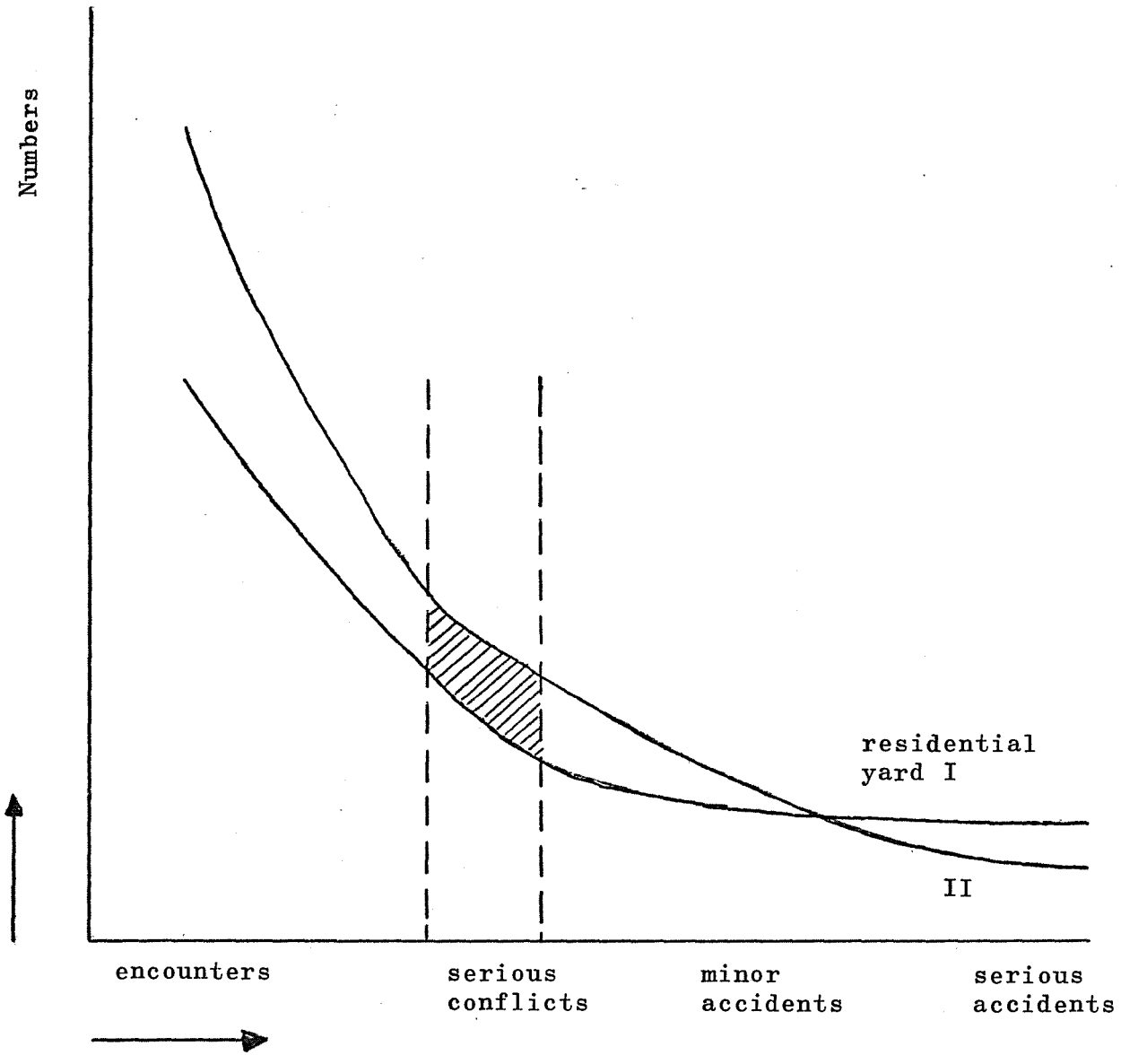



Figure 2. Concept operationalisation problem.

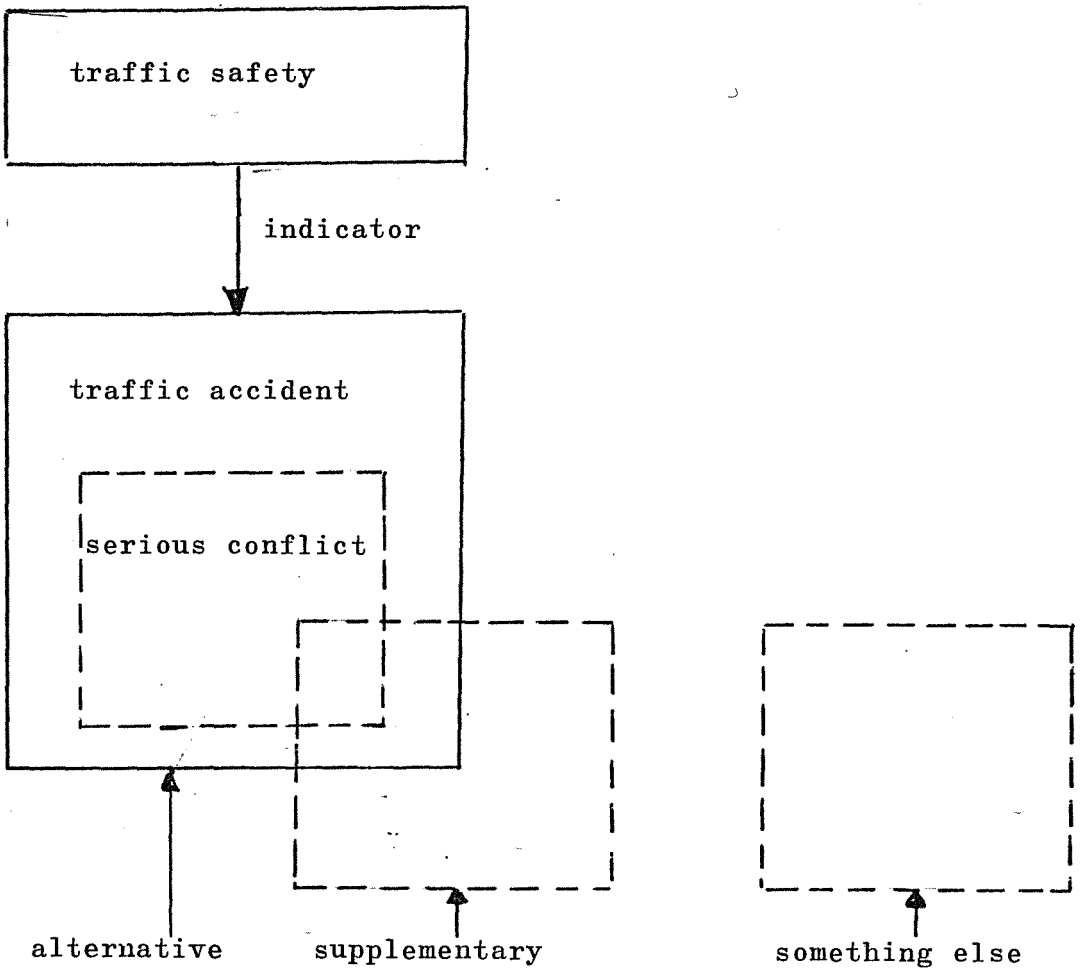



Figure 3. The concept of traffic safety and the indicators.

| group/session / video no. | $G_I S_{II}$ % | $G_{II} S_{II}$ % | $G_{II} S_{II}$ % | $G_{II} S_{III}$ % | type of situation |
|---|---|---|---|---|---|
| 1 | 100 | 100 | 100 | 100 | 1 |
| 2 | 91 | 80(90) | 100 | 90(100) | 3 |
| 3 | 82 | 90 | 80 | 100 | 5 |
| 4 | 82(100) | 90(100) | 90(100) | 90 | 3 |
| 5 | 100 | 90 | 90 | 100 | 5 |
| 6 | 82(91) | 80 | 80 | 80(90) | 2 |
| 7 | 100 | 90 | 100 | 100 | 5 |
| 8 | 73(82) | 90(100) | 90(100) | 90 | 3 |
| 9 | 91 | 80 | 80 | 90 | 5 |
| 10 | 100 | 100 | 100 | 100 | 5 |
| 11 | 91 | 90 | 100 | 100 | 5 |
| 12 | 82 | 100 | 90(100) | 100 | 3 |
| 13 | 91(100) | 80(100) | 80(100) | 90(100) | 1 |
| 14 | 100 | 100 | 100 | 90(100) | 1 |
| 15 | 73(100) | 70(100) | 90(100) | 70(100) | 1 |
| 16 | 91(100) | 70(90) | 90(100) | 100 | 2 |
| 17 | 91(100) | 100 | 90 | 90(100) | 4 |
| 18 | 100 | 100 | 90 | 100 | 3 |
| 19 | 91(100) | 100 | 100 | 100 | 4 |
| 20 | 100 | 90(100) | 90(100) | 100 | 1 |
| 21 | 91(100) | 70(100) | 70(100) | 70(100) | 2 |
| 22 | 64(73) | 50(70) | 80 | 70(80) | 1 |
| 23 | 100 | 100 | 90 | 100 | 5 |
| 24 | 91 | 90 | 100 | 100 | 3 |
| 25 | 82 | 80(90) | 90 | 80(100) | 3 |
| 26 | 82(100) | 100 | 90(100) | 90(100) | 1 |
| 27 | 91(100) | 90 | 90(100) | 90(100) | 4 |

Table 1. Percentage agreement between observers in evaluating situation.

| observer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | vg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.00 | | | | | | | | | | |
| 2 | .90 | 1.00 | | | | | | | | | |
| 3 | .88 | .94 | 1.00 | | | | | | | | |
| 4 | .90 | .89 | .86 | 1.00 | | | | | | | |
| 5 | .91 | .95 | .97 | .91 | 1.00 | | | | | | |
| 6 | .83 | .89 | .83 | .90 | .86 | 1.00 | | | | | |
| 7 | .88 | .87 | .89 | .93 | .94 | .79 | 1.00 | | | | |
| 8 | .85 | .92 | .94 | .88 | .92 | .88 | .85 | 1.00 | | | |
| 9 | .84 | .93 | .93 | .87 | .96 | .84 | .90 | .88 | 1.00 | | |
| 10 | .79 | .81 | .90 | .83 | .88 | .73 | .85 | .87 | .83 | 1.00 | |
| vg | .88 | .92 | .98 | .90 | .96 | .83 | .93 | .92 | .93 | .90 | 1.00 |

Correlations are expressed as an r-value
An r-value of 1.00 = max. positive correlation
An r-value of -1.00 = max. negative correlation
An r-value of 0.00 = no correlation

Table 2a. Correlations between observers in Group I, Session II. The average correlation calculated via z-transformation (De Jonge, 1963) is: r = .91.

| observer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.00 | | | | | | | | | |
| 2 | .78 | 1.00 | | | | | | | | |
| 3 | .86 | .91 | 1.00 | | | | | | | |
| 4 | .93 | .81 | .84 | 1.00 | | | | | | |
| 5 | .96 | .88 | .91 | .95 | 1.00 | | | | | |
| 6 | .85 | .74 | .81 | .81 | .91 | 1.00 | | | | |
| 7 | .91 | .81 | .86 | .93 | .93 | .79 | 1.00 | | | |
| 8 | .92 | .84 | .88 | .94 | .96 | .87 | .89 | 1.00 | | |
| 9 | .91 | .66 | .76 | .81 | .83 | .77 | .75 | .81 | 1.00 | |
| 10 | .89 | .77 | .82 | .94 | .93 | .88 | .88 | .92 | .78 | 1.00 |

Table 2b. Correlations between observers in Group II, Session I. The average correlation is: r = .87

| observer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.00 | | | | | | | | | |
| 2 | .86 | 1.00 | | | | | | | | |
| 3 | .88 | .92 | 1.00 | | | | | | | |
| 4 | .88 | .74 | .77 | 1.00 | | | | | | |
| 5 | .91 | .92 | .90 | .79 | 1.00 | | | | | |
| 6 | .84 | .79 | .81 | .77 | .91 | 1.00 | | | | |
| 7 | .99 | .87 | .89 | .87 | .92 | .86 | 1.00 | | | |
| 8 | .83 | .71 | .72 | .85 | .81 | .83 | .83 | 1.00 | | |
| 9 | .91 | .85 | .87 | .89 | .90 | .93 | .90 | .86 | 1.00 | |
| 10 | .84 | .86 | .82 | .81 | .91 | .82 | .86 | .81 | .84 | 1.00 |

Table 2c. Correlation between observers in Group II, Session II. The average correlation is r = .87

| observer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.00 | | | | | | | | | |
| 2 | .86 | 1.00 | | | | | | | | |
| 3 | .91 | .97 | 1.00 | | | | | | | |
| 4 | .94 | .81 | .87 | 1.00 | | | | | | |
| 5 | .86 | .94 | .92 | .83 | 1.00 | | | | | |
| 6 | .85 | .79 | .84 | .84 | .83 | 1.00 | | | | |
| 7 | .98 | .85 | .90 | .94 | .84 | .85 | 1.00 | | | |
| 8 | .82 | .72 | .77 | .80 | .74 | .92 | .82 | 1.00 | | |
| 9 | .85 | .74 | .79 | .90 | .76 | .87 | .85 | .89 | 1.00 | |
| 10 | .81 | .67 | .72 | .82 | .75 | .90 | .81 | .85 | .89 | 1.00 |

Table 2d. Correlations between observers in Group II, Session III.
The average correlation is: r = .86

| observer | correlation between scores in session | | | average * |
|---|---|---|---|---|
| | I and II | I and III | II and III | |
| 1 | .97 | .97 | 1.00** | .99 |
| 2 | .98 | .98 | .98 | .98 |
| 3 | .92 | .95 | .98 | .95 |
| 4 | .87 | .95 | .85 | .90 |
| 5 | .96 | .93 | .94 | .95 |
| 6 | .99 | .95 | .92 | .97 |
| 7 | .96 | .94 | .99 | .97 |
| 8 | .89 | .80 | .80 | .83 |
| 9 | .80 | .76 | .90 | .84 |
| 10 | .85 | .86 | .84 | .85 |
| average * | .94 | .93 | .96 | .95 |

Table 3. Internal reliability expressed as correlation coëfficient.

* Average correlation calculated via z-transformation.
** In calculating the average correlation this was taken as .999, since the corresponding z-value for a correlation of 1.00 is $\infty$.
In that case all averages including this correlation would work out

| observer / situation no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 2 | |
| 7 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | |
| 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| 10 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | |
| 13 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | |
| 21 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | |
| 23 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | |
| deviation from criterion score | 0 | 0 | 2 | 1 | 0 | 0 | 2 | 4 | 2 | 1 | 12 |
| expected error in random scoring (9 x 1.5) | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 135 |
| actual error as percentage of expected error ** | 0% | 0% | 15% | 7% | 0% | 0% | 15% | 30% | 15% | 7% | 9% |

* In completely random scoring the expected difference can be determined as follows:

| criterion | range of scoring | difference |
|---|---|---|
| 3 | 0 | 3 |
| 3 | 1 | 2 |
| 3 | 2 | 1 |
| 3 | 3 | 0 |
| | | 6 |

Average deviation from criterion score: $\frac{6}{4} = 1.5$

** The higher this percentage, the more scoring approaches random scoring.

Table 4a. Evaluation of "sudden" reactions by observers in Group II, Session I.

| observer / situation no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | |
| 7 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | |
| 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | |
| 10 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | |
| 13 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | |
| 21 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | |
| 23 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | |
| deviation from criterion score | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 7 | 1 | 1 | 9 |
| expected error in random scoring (9 x 1,5) | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 135 |
| actual error as percentage of expected error | 0% | 0% | 0% | 0% | 0% | 0% | 0% | 52% | 7% | 7% | 7% |

Table 4b. Evaluation of "sudden" reactions by observers in Group II, Session II.

| observer / situation no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | |
| 7 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | |
| 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | |
| 10 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | |
| 13 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | |
| 15 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | |
| 21 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 3 | |
| 23 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | |
| deviation from criterion score | 0 | 0 | 1 | 1 | 2 | 1 | 1 | 9 | 2 | 1 | 18 |
| expected error in random scoring (9 x 1,5) | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 13,5 | 135 |
| actual error as percentage of expected error | 0% | 0% | 7% | 7% | 15% | 7% | 7% | 67% | 15% | 7% | 13% |

Table 4c. Evaluation of "sudden" reactions by observers in Group II, Session III.

| observer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | vg |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.00 | | | | | | | | | | |
| 2 | .85 | 1.00 | | | | | | | | | |
| 3 | .84 | .79 | 1.00 | | | | | | | | |
| 4 | .77 | .83 | .80 | 1.00 | | | | | | | |
| 5 | .79 | .81 | .86 | .83 | 1.00 | | | | | | |
| 6 | .92 | .90 | .89 | .82 | .86 | 1.00 | | | | | |
| 7 | .90 | .88 | .90 | .82 | .80 | .95 | 1.00 | | | | |
| 8 | .88 | .90 | .89 | .78 | .83 | .93 | .95 | 1.00 | | | |
| 9 | .78 | .77 | .88 | .89 | .86 | .82 | .85 | .82 | 1.00 | | |
| 10 | .76 | .74 | .83 | .79 | .74 | .80 | .88 | .83 | .81 | 1.00 | |
| vg | .90 | .89 | .88 | .85 | .82 | .90 | .94 | .91 | .90 | .85 | 1.00 |

Table 5a. Correlations between observers in Group I, Session II. The average correlation is: r = .86

| observer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.00 | | | | | | | | | |
| 2 | .74 | 1.00 | | | | | | | | |
| 3 | .76 | .68 | 1.00 | | | | | | | |
| 4 | .87 | .69 | .67 | 1.00 | | | | | | |
| 5 | .74 | .71 | .73 | .74 | 1.00 | | | | | |
| 6 | .69 | .77 | .74 | .67 | .74 | 1.00 | | | | |
| 7 | .85 | .74 | .78 | .85 | .71 | .74 | 1.00 | | | |
| 8 | .68 | .73 | .72 | .69 | .77 | .90 | .78 | 1.00 | | |
| 9 | .55 | .62 | .68 | .56 | .70 | .75 | .69 | .79 | 1.00 | |
| 10 | .79 | .63 | .82 | .77 | .78 | .77 | .81 | .80 | .71 | 1.00 |

Table 5b. Correlations between observers in Group II, Session I. The average correlation between the observers is: r = .75

| observer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.00 | | | | | | | | | |
| 2 | .77 | 1.00 | | | | | | | | |
| 3 | .73 | .70 | 1.00 | | | | | | | |
| 4 | .84 | .68 | .58 | 1.00 | | | | | | |
| 5 | .86 | .84 | .74 | .75 | 1.00 | | | | | |
| 6 | .79 | .79 | .69 | .67 | .78 | 1.00 | | | | |
| 7 | .73 | .85 | .70 | .68 | .84 | .85 | 1.00 | | | |
| 8 | .72 | .80 | .69 | .51 | .85 | .68 | .75 | 1.00 | | |
| 9 | .63 | .67 | .66 | .50 | .72 | .68 | .78 | .62 | 1.00 | |
| 10 | .88 | .79 | .82 | .76 | .85 | .78 | .79 | .77 | .75 | 1.00 |

Table 5c. Correlations between observers in Group II, Session II. The average correlation between the observers is: r = .75

| observer | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.00 | | | | | | | | | |
| 2 | .86 | 1.00 | | | | | | | | |
| 3 | .83 | .71 | 1.00 | | | | | | | |
| 4 | .84 | .63 | .79 | 1.00 | | | | | | |
| 5 | .87 | .69 | .89 | .85 | 1.00 | | | | | |
| 6 | .88 | .82 | .81 | .74 | .85 | 1.00 | | | | |
| 7 | .82 | .90 | .73 | .67 | .70 | .88 | 1.00 | | | |
| 8 | .73 | .75 | .77 | .64 | .70 | .73 | .79 | 1.00 | | |
| 9 | .80 | .74 | .81 | .75 | .84 | .88 | .79 | .75 | 1.00 | |
| 10 | .82 | .76 | .74 | .70 | .81 | .85 | .71 | .72 | .84 | 1.00 |

Table 5d. Correlations between observers in Group II, Session III.

The average correlation between the observers is: r = .79

| observer | correlation between scores in session | | | average |
|---|---|---|---|---|
| | I and II | I and III | II and III | |
| 1 | .92 | .92 | .94 | .93 |
| 2 | .85 | .78 | .88 | .85 |
| 3 | .82 | .71 | .78 | .77 |
| 4 | .92 | .88 | .88 | .90 |
| 5 | .89 | .82 | .87 | .86 |
| 6 | .85 | .89 | .83 | .86 |
| 7 | .77 | .74 | .98 | .89 |
| 8 | .86 | .88 | .78 | .84 |
| 9 | .67 | .78 | .76 | .74 |
| 10 | .79 | .79 | .81 | .80 |
| average | .85 | .83 | .87 | .85 |

Table 6. Internal reliability expressed as correlation coëfficient.

| observer / situation no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 3 | 3 | |
| 6 | 3 | 1 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | |
| 13 | 2 | 3 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | 2 | |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | |
| 16 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | |
| deviation from criterion score | 1 | 2 | 0 | 2 | 3 | 3 | 1 | 0 | 2 | 1 | 15 |
| expected error in random scoring (5 x 1.5) | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 75 |
| actual error as percentage of expected error | 13% | 27% | 0% | 13% | 40% | 40% | 13% | 0% | 27% | 13% | 20% |

Table 7a. Evaluation of "sudden" reactions by observers in Group II, Session I.

| observer / situation no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | |
| 6 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | |
| 13 | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | |
| 16 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 1 | 2 | 3 | |
| deviation from criterion score | 0 | 2 | 0 | 2 | 1 | 3 | 2 | 3 | 4 | 0 | 17 |
| expected error in random scoring (5 x 1.5) | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 75 |
| actual error as percentage of expected error | 0% | 27% | 0% | 27% | 13% | 40% | 27% | 40% | 53% | 0% | 23% |

Table 7b. Evaluation of "sudden" reactions by observers in Group II, Session II

| observer / situation no. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | total |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | |
| 6 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | |
| 13 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | |
| 16 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | |
| deviation from criterion score | 0 | 0 | 0 | 0 | 0 | 4 | 2 | 4 | 2 | 1 | 13 |
| expected error in random scoring (5 x 1.5) | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 7,5 | 75 |
| actual error as percentage of expected error | 0% | 0% | 0% | 0% | 0% | 53% | 27% | 53% | 27% | 13% | 17% |

Table 7c. Evaluation of "sudden" reactions by observers in Group II, Session III

| type of traffic | Fledderus | | Gillis | |
|---|---|---|---|---|
| | N | % | N | % |
| car | 804 | 44 | 289 | 28 |
| moped | 94 | 5 | 81 | 8 |
| cycle | 810 | 44 | 642 | 61 |
| others | 116 | 6 | 35 | 3 |
| total | 1824 | 99 | 1047 | 100 |

Table 8. Traffic density by types of traffic

| | criterion | observer | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| criterion | 1.00 | | | | | |
| observer 1 | .97 | 1.00 | | | | |
| observer 2 | .96 | .96 | 1.00 | | | |
| observer 3 | .99 | .96 | .95 | 1.00 | | |
| observer 4 | .96 | .92 | .92 | .94 | 1.00 | |
| observer 5 | .96 | .93 | .92 | .94 | .91 | 1.00 |

Table 9. Correlation in evaluating pedestrian's reaction.

Average correlation with criterion : r = .97
Average correlation between observers: r = .94

| video no. | observer | | | | | total |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | |
| 1 | 3 | 3 | 3 | 3 | 3 | |
| 7 | 3 | 3 | 3 | 3 | 3 | |
| 9 | 2 | 3 | 3 | 3 | 3 | |
| 10 | 3 | 3 | 3 | 3 | 3 | |
| 13 | 3 | 3 | 3 | 2 | 3 | |
| 15 | 3 | 3 | 3 | 3 | 3 | |
| 16 | 3 | 3 | 3 | 3 | 3 | |
| 21 | 3 | 3 | 3 | 3 | 3 | |
| 23 | 3 | 3 | 3 | 3 | 3 | |
| deviation from criterion score | 1 | 0 | 0 | 1 | 0 | 2 |
| expected error in random scoring (9 x 1.5) | 13.5 | 13.5 | 13.5 | 13.5 | 13.5 | 67.5 |
| actual error as percentage of expected error | 7,4 | 0,0 | 0,0 | 7,4 | 0,0 | 3,0 |

Table 10. Evaluation of sudden pedestrian reactions by observers.

| | criterion | observer | | | | |
|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 4 | 5 |
| criterion | 1.00 | | | | | |
| observer 1 | .96 | 1.00 | | | | |
| observer 2 | .95 | .90 | 1.00 | | | |
| observer 3 | .95 | .90 | .93 | 1.00 | | |
| observer 4 | .98 | .97 | .93 | .93 | 1.00 | |
| observer 5 | .97 | .92 | .95 | .92 | .95 | 1.00 |

Table 11. Correlations in evaluating road user's reaction.

Average correlation with criterion : r = .97
Average correlation between observers: r = .93

| video no, | observer | | | | | total |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | |
| 1 | 3 | 3 | 3 | 2 | 3 | |
| 6 | 3 | 3 | 3 | 3 | 3 | |
| 13 | 3 | 3 | 3 | 2 | 3 | |
| 15 | 3 | 3 | 3 | 3 | 3 | |
| 16 | 3 | 3 | 3 | 3 | 3 | |
| deviation from criterion score | 0 | 0 | 0 | 2 | 0 | 2 |
| expected error in random scoring (5 x 1.5) | 7.5 | 7.5 | 7.5 | 7.5 | 7.5 | 37.5 |
| actual error as percentages of expected error | 0,0 | 0,0 | 0,0 | 26,7 | 0,0 | 5,3 |

Table 12. Evaluation of road users' sudden reactions by observers.

| | Fledderus | Gillis |
|---|---|---|
| number of children followed | 781 | 808 |
| number of encounters | 89 | 130 |
| average number per child | 0,114 | 0,161 |
| average number per child per hour's playing out-of-doors | 0,450 | 0,600 |

Table 13. Average number of encounters

| | Fledderus | (%) | Gillis | (%) |
|---|---|---|---|---|
| serious conflict | 9 | (10) | 17 | (13) |
| conflict | 14 | (16) | 7 | ( 5) |
| intensive contact/conflict | 16 | (18) | 19 | (15) |
| contact/conflict | 26 | (29) | 24 | (18) |
| intensive contact | 4 | ( 4) | 20 | (15) |
| contact | 20 | (22) | 43 | (33) |
| total | 89 | (99) | 130 | (99) |

Table 14. Nature of encounters

| | Fledderus | (%) | Gillis | (%) |
|---|---|---|---|---|
| car | 59 | (66) | 52 | (40) |
| truck | 4 | ( 4) | 4 | ( 3) |
| moped | 7 | ( 8) | 12 | ( 9) |
| cycle | 18 | (20) | 50 | (38) |
| others | 1 | ( 1) | 2 | ( 2) |
| total | 89 | (99) | 130 | (100) |

Table 15. Type of traffic involved in encounters

| | Fledderus | Gillis |
|---|---|---|
| car | 2 | 6 |
| truck | 0 | 1 |
| moped | 2 | 2 |
| cycle | 5 | 8 |
| others | 0 | 0 |

Table 16. Type of traffic involved in serious conflicts

| | 0-4 years | | 5-10 years | | 11-15 years | | total | |
|---|---|---|---|---|---|---|---|---|
| | F | G | F | G | F | G | F | G |
| number of children followed | 122 | 97 | 519 | 492 | 140 | 219 | 781 | 808 |
| number of serious conflicts | 0 | 2 | 8 | 9 | 1 | 6 | 9 | 17 |
| average number/ child/age group | 0,0000 | 0,0206 | 0,0154 | 0,0183 | 0,0071 | 0,0274 | 0,0115 | 0,0216 |
| average number/ child/age group per hour playing out-of-doors | 0,0000 | 0,0772 | 0,0609 | 0,0686 | 0,0281 | 0,1072 | 0,0455 | 0,0787 |

Table 17. Serious conflicts and age groups

| | Fledderus | Gillis |
|---|---|---|
| situation 1 | 3 | 2 |
| situation 2 | 0 | 1 |
| situation 3 | 3 | 2 |
| situation 4 | 1 | 5 |
| situation 5 | 2 | 7 |

Table 18. Serious conflicts and situations

| | Fledderus | (%) | Gillis | (%) |
|---|---|---|---|---|
| serious conflict | 2 | ( 4) | 10 | (20) |
| conflict | 13 | (25) | 2 | ( 4) |
| intensive contact/conflict | 3 | ( 6) | 9 | (18) |
| contact/conflict | 19 | (37) | 9 | (18) |
| intensive contact | 4 | ( 8) | 8 | (16) |
| contact | 11 | (21) | 13 | (25) |
| total | 52 | (101) | 51 | (101) |

Table 19. Number and nature of encounters near infants schools.

| | Fledderus | Gillis |
|---|---|---|
| percentage of children accompanied by adults | 51% | 29% |
| percentage of encounters involving adult | 27% | 27% |
| number of serious conflicts | 2 | 10 |
| number of serious conflicts involving adult | 0 | 2 |

Table 20. Children accompanied by adults.

| | Fledderus | (%) | Gillis | (%) |
|---|---|---|---|---|
| serious conflict | 5 | (11) | 4 | ( 8) |
| conflict | 9 | (19) | 1 | ( 2) |
| intensive contact/conflict | 6 | (13) | 8 | (17) |
| contact/conflict | 11 | (23) | 15 | (31) |
| intensive contact | 3 | ( 6) | 6 | (13) |
| contact | 13 | (28) | 14 | (29) |
| total | 47 | (100) | 48 | (100) |

Table 21. Number and nature of encounters near elementary schools.

| | infants school | | | | elementary school | | | |
|---|---|---|---|---|---|---|---|---|
| | F | (%) | G | (%) | F | (%) | G | (%) |
| situation 1 | 10 | (19) | 8 | (16) | 13 | (28) | 15 | (31) |
| situation 2 | 6 | (12) | 1 | ( 2) | 5 | (11) | 2 | ( 4) |
| situation 3 | 6 | (12) | 15 | (29) | 8 | (17) | 12 | (25) |
| situation 4 | 5 | (10) | 10 | (20) | 4 | ( 8) | 13 | (27) |
| situation 5 | 25 | (48) | 17 | (33) | 17 | (36) | 6 | (13) |

Table 22. Encounters and situation

| | infants school | | elementary school | |
|---|---|---|---|---|
| | Fledderus | Gillis | Fledderus | Gillis |
| car | 1 | 5 | 3 | 1 |
| truck | - | 1 | - | - |
| moped | - | - | - | - |
| cycle | 1 | 3 | 2 | 3 |
| others | - | 1 | - | - |
| total | 2 | 10 | 5 | 4 |

Table 23. Types of traffic involved in serious conflicts near schools

| | F1 | (%) | G1 | (%) | F2 | (%) | G2 | (%) |
|---|---|---|---|---|---|---|---|---|
| serious conflict | 4 | (29) | 0 | ( 0) | 0 | ( 0) | 8 | (10) |
| conflict | 3 | (21) | 5 | (19) | 3 | (30) | 3 | ( 4) |
| intensive contact/ conflict | 1 | ( 7) | 8 | (30) | 1 | (10) | 14 | (18) |
| contact/conflict | 5 | (36) | 6 | (22) | 3 | (30) | 16 | (20) |
| intensive contact | 0 | ( 0) | 1 | ( 4) | 0 | ( 0) | 19 | (24) |
| contact | 1 | ( 7) | 7 | (26) | 3 | (30) | 20 | (25) |
| total | 14 | (100) | 27 | (101) | 10 | (100) | 80 | (101) |

Table 24. Number and nature of encounters at neighbourhood entries and exits

| | car | | moped | | cycle | |
|---|---|---|---|---|---|---|
| | F | G | F | G | F | G |
| number of vehicles timed | 131 | 42 | 19 | 5 | 74 | 91 |
| average speed in km/hour | 23,92 | 22,50 | 23,91 | 26,60 | 6,17 | 9,98 |

Table 25. Average car, moped, cycle speeds in sectors where serious conflicts occur

ANNEX I

New statutory code for residential yards

Article Pedestrians are allowed to use roads located within a residential yard indicated as such, over their full width; playing is permitted on such roads.

Article Motorists shall not drive faster than walking pace within a residential yard, They must allow for the presence of pedestrians, including children at play, and for unmarked objects and irregularities in the road surface and track of the road.

Article At an intersection or junction within a residential yard, the provisions at the commencement of Article 42, and (a), (b) and (c) shall not apply.

(In the pattern of traffic expected in a residential yard there is no need, in regulating priorities between vehicles, to put motor vehicles in a privileged position. In the residential yard the various categories of drivers should move at the same speed; they are not allowed to drive faster than walking-pace. All drivers therefore have to give priority to traffic coming from the right, and Article 42 (c) does therefore not apply. Since there will be no major roads, intersections or junctions with priority in residential yards, and since the driving speed is no obstacle to giving priority to drivers coming from the right on unmetalled roads, the provisions of Article 42 (a) and (b) are likewise declared inapplicable to residential yards).

Article 1. Drivers must not hinder pedestrians in a residential yard. 2. Pedestrians in such a yard must not unnecessarily obstruct drivers' progress.

Article 1. Drivers of vehicles with more than two wheels shall not park in a residential yard otherwise than at places

marked with a sign or with a letter "P" in a parking space on the road surface.

2. By-laws may lay down rules regarding the parking of other vehicles.

ANNEX II

The sign of a residential yard in conformity with the Road Traffic and Traffic Signs Regulations may be placed only at the entry to a road or road system provided the following requirements are satisfied:

1. A residential yard must function primarily as a place of residence.

2. The road or road system situated within the residential yard must be structured so that, as far as motorised traffic is concerned, they only function for traffic whose destination or point of departure is on such roads (to the exclusion of through traffic).

3. The density of motorised traffic on any road in a residential yard must not be such as to detract from the character of such road as part of a residential yard.

4. The impression must be avoided that the road is divided into a carriageway and a foothpath or pavement. There must not, therefore, be any continuous difference in the level of the cross section of a road in a residential yard. Edgings giving the impression of separating a foothpath or pavement from a carriageway must therefore be interrupted at distances of about 25 metres, and drivers must be able to observe such interruptions in the edgings quite clearly.

5. Vertical elements, such as flower boxes and shrubs, must not hinder visibility.

6. The entries and exits of a residential yard must be constructed so as to be clearly recognisable as such and, in so far as they can be used by vehicles, must also be clearly recognisable as having been designed as entries and exits respectively; the

kerb, even though lowered at such places, must be continuous. This requirement will also be satisfied if the yard's entry or exit is set back some distance from the road into which it emerges. In that case, it must not be possible to regard the emerging road as a exit on to the side street. The sign "Residential yard" is to be placed at the entry, and the sign "End of Residential yard" at the exit.

7. The boundery of a part of the road surface intended for parking one or more vehicles shall be indicated by marking at least the corners of that part of the road. Such marking and the letter P shall be of a colour clearly distinguishable from the rest of the road surface at that place.

8. There must be sufficient parking space for residents inside a residential yard. If there is unused parking space in the immediate vicinity of the residential yard, the yard's residents' demand for parking space may slightly exceed the supply of parking space in the yard. But this must not lead to the resident's demand for parking space in the yard's immediate vicinity exceeding the supply.

9. On road sections in the yard suitable for use by vehicles, facilities shall be provided for limiting the speed of the various types of vehicles. The distance between such facilities must not exceed 50 metres.

10. No facilities shall be provided on the road sections mentioned in paragraph 9 which lead to drivers travelling very close to houses situated along the road.

11. The facilities mentioned in 9 must not constitute a danger to traffic passing by or over them.

12. Sufficient street lighting must exist in the residential yard for the facilities present in the yard, especially those

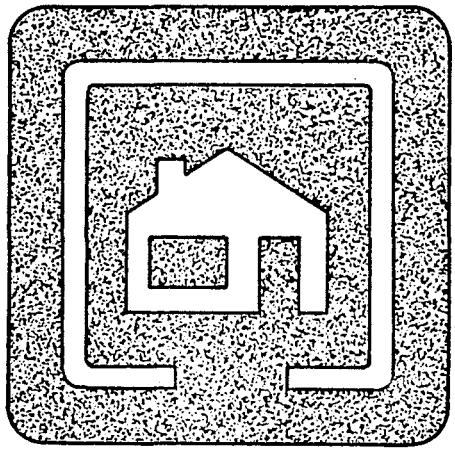
mentioned in 9, to be clearly visible at nighttime.

13. Places specially designed as children's play areas must be adequately marked so as to distinguish them from parts of the road suitable for use by vehicles. If possible, such areas should be separated from these parts of the road.

14. Under the sign of a residential yard a plate shall be affixed bearing the words "Residential yard". (See next page).

## A

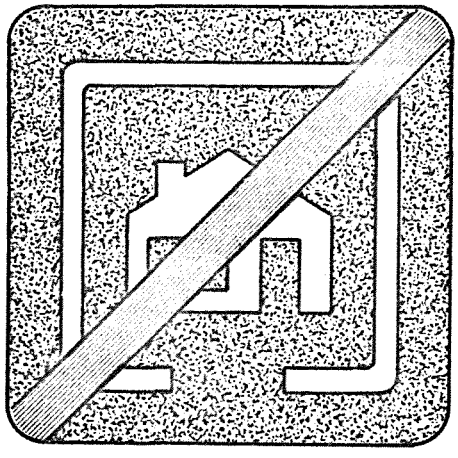
## Residential yard



(White illustration on blue background)

## B

## End of Residential yard



(White illustration on blue background, intersected diagonally by a red bar)

# Pedestrian's reaction



| video no. | observers | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | VG | percentage agreement (rounded off) |
| 1 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 73 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 91 |
| 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 91 |
| 5 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 64 |
| 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 91 |
| 7 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 8 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 82 |
| 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 10 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 82 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 91 |
| 12 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 73 |
| 13 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 17 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 82 |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 19 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 91 |
| 20 | 2 | 2 | 0 | 2 | 1 | 3 | 1 | 1 | 1 | 0 | 0 | --*) |
| 21 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 22 | 2 | 3 | 3 | 1 | 2 | 3 | 0 | 3 | 2 | 2 | 2 | --*) |
| 23 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 82 |
| 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 82 |
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 91 |
| 26 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 64 |
| 27 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 91 |

*) percentage agreement in score is 50% or less.

| video no. | observers | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | percentage agreement (rounded off) |
| 1 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 2 | 60 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 90 |
| 3 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 80 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 5 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 90 |
| 6 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 90 |
| 7 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 80 |
| 8 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 70 |
| 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 10 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 90 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 90 |
| 12 | 1 | 2 | 2 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 60 |
| 13 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 14 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 80 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 90 |
| 17 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | --*) |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 19 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 90 |
| 20 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 80 |
| 21 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 90 |
| 22 | 3 | 0 | 1 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | --*) |
| 23 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 70 |
| 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 80 |
| 25 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 80 |
| 26 | 1 | 0 | 1 | 0 | 1 | 3 | 0 | 1 | 2 | 1 | --*) |
| 27 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 90 |

* percentage agreement in score is 50% or less.

| video no. | observers | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | percentage agreement (rounded off) |
| 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 90 |
| 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 70 |
| 3 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 90 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 5 | 2 | 2 | 2 | 3 | 1 | 1 | 2 | 2 | 2 | 2 | 70 |
| 6 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 80 |
| 7 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 90 |
| 8 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 70 |
| 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 80 |
| 10 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 90 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 90 |
| 12 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 80 |
| 13 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 14 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 90 |
| 17 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 0 | 2 | 1 | --*) |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 19 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 90 |
| 20 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 1 | 60 |
| 21 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 80 |
| 22 | 3 | 0 | 1 | 3 | 1 | 2 | 3 | 2 | 2 | 1 | --*) |
| 23 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 70 |
| 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 90 |
| 26 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 2 | 2 | 1 | --*) |
| 27 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 90 |

* percentage agreement in score is 50% or less

| video no. | observers | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | percentage agreement (rounded off) |
| 1 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 80 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 90 |
| 3 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 80 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 100 |
| 6 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 80 |
| 7 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 90 |
| 8 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 90 |
| 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 80 |
| 10 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 80 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 12 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 70 |
| 13 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 80 |
| 14 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 15 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 80 |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 90 |
| 17 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 70 |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 19 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 100 |
| 20 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 2 | 60 |
| 21 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 70 |
| 22 | 3 | 0 | 1 | 3 | 0 | 2 | 3 | 2 | 3 | 3 | --*) |
| 23 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 70 |
| 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 90 |
| 26 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 2 | 3 | --*) |
| 27 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 100 |

* percentage agreement in score is 50% or less.

Group I/Session II — Pedestrian's reaction (averages) — Annex IVa

| video no. | observers | | | | | | | | | | | average | distribution |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | VG | | |
| 1 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2.73 | .47 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 1.91 | .30 |
| 4 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | .09 | .30 |
| 5 | 2 | 2 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1.64 | .50 |
| 6 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1.09 | .30 |
| 7 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 8 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1.18 | .40 |
| 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 10 | 2 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2.82 | .40 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | .09 | .30 |
| 12 | 0 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 1.09 | .54 |
| 13 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 14 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .09 | .30 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 17 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1.18 | .40 |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 19 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1.91 | .30 |
| 20 | 2 | 2 | 0 | 2 | 1 | 3 | 1 | 1 | 1 | 0 | 0 | 1.18 | .98 |
| 21 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 22 | 2 | 3 | 3 | 1 | 2 | 3 | 0 | 3 | 2 | 2 | 2 | 2.09 | .94 |
| 23 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 2.82 | .40 |
| 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | .18 | .40 |
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | .18 | .60 |
| 26 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | .36 | .50 |
| 27 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.09 | .30 |
| average | 1.59 | 1.67 | 1.52 | 1.44 | 1.48 | 1.70 | 1.44 | 1.56 | 1.52 | 1.63 | 1.44 | | |
| distribution | 1.19 | 1.27 | 1.31 | 1.15 | 1.22 | 1.20 | 1.28 | 1.22 | 1.22 | 1.18 | 1.25 | | |

| video no. | observers | | | | | | | | | | average | distribution |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 1 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 2 | 2.60 | .52 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | .10 | .32 |
| 3 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.20 | .42 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 5 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 2 | 1.90 | .32 |
| 6 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1.10 | .32 |
| 7 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2.80 | .42 |
| 8 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1.30 | .48 |
| 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 10 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2.90 | .32 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | .10 | .32 |
| 12 | 1 | 2 | 2 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1.20 | .63 |
| 13 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 14 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | .20 | .42 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2.90 | .32 |
| 17 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 2 | 1.50 | .53 |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 19 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2 | 1.90 | .32 |
| 20 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | .20 | .42 |
| 21 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2.90 | .32 |
| 22 | 3 | 0 | 1 | 3 | 2 | 2 | 3 | 2 | 3 | 3 | 2.20 | 1.03 |
| 23 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 2.70 | .48 |
| 24 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | .30 | .67 |
| 25 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | .30 | .67 |
| 26 | 1 | 0 | 1 | 0 | 1 | 3 | 0 | 1 | 2 | 1 | 1.00 | .94 |
| 27 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.10 | .32 |
| average | 1.63 | 1.56 | 1.52 | 1.48 | 1.48 | 1.56 | 1.41 | 1.33 | 1.74 | 1.63 | | |
| distribution | 1.21 | 1.28 | 1.19 | 1.28 | 1.25 | 1.28 | 1.22 | 1.11 | 1.13 | 1.15 | | |

# Pedestrian's reaction (averages)



| video no. | observers | | | | | | | | | | average | distribution |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 1 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2.90 | .32 |
| 2 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | .30 | .48 |
| 3 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.10 | .32 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 5 | 2 | 2 | 2 | 3 | 1 | 1 | 2 | 2 | 2 | 2 | 1.90 | .57 |
| 6 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1.20 | .42 |
| 7 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2.90 | .32 |
| 8 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1.30 | .48 |
| 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2.80 | .42 |
| 10 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2.90 | .32 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | .10 | .32 |
| 12 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1.00 | .47 |
| 13 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 14 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .10 | .32 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2.90 | .32 |
| 17 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 0 | 2 | 1 | 1.30 | .67 |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 19 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 1 | 1.90 | .32 |
| 20 | 0 | 0 | 0 | 3 | 0 | 0 | 0 | 1 | 1 | 1 | .60 | .97 |
| 21 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2.80 | .42 |
| 22 | 3 | 0 | 1 | 3 | 1 | 2 | 3 | 2 | 2 | 1 | 1.80 | 1.03 |
| 23 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 2.70 | .48 |
| 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | .10 | .32 |
| 26 | 0 | 0 | 0 | 1 | 1 | 3 | 0 | 2 | 2 | 1 | 1.00 | 1.05 |
| 27 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.10 | .32 |
| average | 1.52 | 1.48 | 1.52 | 1.74 | 1.44 | 1.52 | 1.48 | 1.30 | 1.59 | 1.48 | | |
| distribution | 1.31 | 1.31 | 1.22 | 1.29 | 1.22 | 1.31 | 1.31 | 0.95 | 1.19 | 1.05 | | |

## Pedestrian's reaction (averages)



| video | observers | | | | | | | | | | aver-age | distri-bution |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 1 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 2.80 | .42 |
| 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | .10 | .32 |
| 3 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.20 | .42 |
| 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 5 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2.00 | .00 |
| 6 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1.20 | .42 |
| 7 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2.90 | .32 |
| 8 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.10 | .32 |
| 9 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2.80 | .42 |
| 10 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 3 | 2.80 | .42 |
| 11 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 12 | 1 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 2 | 1 | 1.10 | .57 |
| 13 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 2.80 | .42 |
| 14 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | .10 | .32 |
| 15 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 3 | 2.80 | .42 |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2.90 | .32 |
| 17 | 1 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1.30 | .48 |
| 18 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 19 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2.00 | .00 |
| 20 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 2 | 2 | 2 | .80 | 1.03 |
| 21 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2 | 3 | 2.70 | .48 |
| 22 | 3 | 0 | 1 | 3 | 0 | 2 | 3 | 2 | 3 | 3 | 2.00 | 1.25 |
| 23 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 2 | 3 | 2.70 | .48 |
| 24 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 25 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | .10 | .32 |
| 26 | 0 | 0 | 0 | 1 | 1 | 2 | 0 | 1 | 2 | 3 | 1.00 | 1.05 |
| 27 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.00 | .00 |
| average | 1.52 | 1.48 | 1.44 | 1.56 | 1.33 | 1.56 | 1.44 | 1.19 | 1.63 | 1.70 | | |
| distri-bution | 1.31 | 1.31 | 1.25 | 1.22 | 1.21 | 1.22 | 1.28 | 0.83 | 1.18 | 1.17 | | |

| video no. | observers | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | VG | percentage agreement (rounded off) |
| 1 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 64 |
| 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 91 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 82 |
| 5 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 82 |
| 6 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 91 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 91 |
| 8 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 91 |
| 9 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | --*) |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 11 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | --*) |
| 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 100 |
| 13 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 55 |
| 14 | 2 | 3 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 2 | 64 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 100 |
| 17 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 82 |
| 18 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 82 |
| 19 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 82 |
| 20 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 91 |
| 21 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 73 |
| 22 | 3 | 3 | 2 | 2 | 1 | 3 | 3 | 3 | 1 | 3 | 2 | 55 |
| 23 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 91 |
| 24 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 100 |
| 25 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 82 |
| 26 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 82 |
| 27 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 91 |

* percentage agreement in score is 50% or less.

| video no. | observers | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | percentage agreement (rounded off) |
| 1 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 3 | 3 | 70 |
| 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 90 |
| 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 80 |
| 4 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 90 |
| 5 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 70 |
| 6 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 70 |
| 7 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 80 |
| 8 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 80 |
| 9 | 3 | 1 | 2 | 3 | 2 | 0 | 2 | 0 | 0 | 2 | --*) |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 11 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 70 |
| 12 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 90 |
| 13 | 2 | 3 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | 2 | --*) |
| 14 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 90 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 90 |
| 16 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 80 |
| 17 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 80 |
| 18 | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 70 |
| 19 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 80 |
| 20 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 80 |
| 21 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 60 |
| 22 | 3 | 2 | 3 | 2 | 1 | 1 | 3 | 1 | 2 | 2 | --*) |
| 23 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 70 |
| 24 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 70 |
| 25 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 70 |
| 26 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 70 |
| 27 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 90 |

* percentage agreement in score is 50% or less.

| video no. | observers | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | percentage agreement (rounded off) |
| 1 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 60 |
| 2 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 80 |
| 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 90 |
| 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 100 |
| 5 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 60 |
| 6 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 70 |
| 7 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 8 | 1 | 0 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 80 |
| 9 | 2 | 1 | 1 | 3 | 2 | 1 | 1 | 0 | 1 | 1 | 60 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 90 |
| 11 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 90 |
| 12 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 80 |
| 13 | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | --*) |
| 14 | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 80 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 90 |
| 16 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 1 | 2 | 3 | 70 |
| 17 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 60 |
| 18 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 70 |
| 19 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 60 |
| 20 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 60 |
| 21 | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 80 |
| 22 | 3 | 1 | 2 | 3 | 1 | 1 | 0 | 1 | 0 | 2 | --*) |
| 23 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 70 |
| 24 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 90 |
| 25 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 70 |
| 26 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 70 |
| 27 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 80 |

* percentage agreement in score is 50% or less.

| video no. | observers | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | percentage agreement (rounded off) |
| 1 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 60 |
| 2 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 90 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 90 |
| 4 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 90 |
| 5 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | --*) |
| 6 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 80 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 90 |
| 8 | 1 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 80 |
| 9 | 2 | 1 | 1 | 3 | 2 | 1 | 1 | 0 | 1 | 1 | 60 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 100 |
| 11 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 90 |
| 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 100 |
| 13 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 60 |
| 14 | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 80 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 90 |
| 16 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 80 |
| 17 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 60 |
| 18 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | --*) |
| 19 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 70 |
| 20 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | --*) |
| 21 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 70 |
| 22 | 2 | 0 | 3 | 3 | 3 | 1 | 0 | 1 | 2 | 2 | --*) |
| 23 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 70 |
| 24 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 80 |
| 25 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 80 |
| 26 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 70 |
| 27 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 80 |

* percentage agreement in score is 50% or less.

Reaction by traffic (averages)



| video no. | observers | | | | | | | | | | | average | distribution |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | VG | | |
| 1 | 3 | 2 | 3 | 2 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 2.64 | .50 |
| 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.09 | .30 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 4 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1.00 | .45 |
| 5 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | .82 | .40 |
| 6 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 3 | 3 | 3 | 2.91 | .30 |
| 7 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | .09 | .30 |
| 8 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.09 | .30 |
| 9 | 1 | 2 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | .64 | .67 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 11 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 1 | 2 | 1 | .64 | .67 |
| 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.00 | .00 |
| 13 | 3 | 3 | 3 | 2 | 3 | 3 | 2 | 3 | 2 | 2 | 2 | 2.55 | .52 |
| 14 | 2 | 3 | 2 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 2 | 2.36 | .50 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 16 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3.00 | .00 |
| 17 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1.18 | .40 |
| 18 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.18 | .40 |
| 19 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1 | 1.18 | .40 |
| 20 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.09 | .30 |
| 21 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 3 | 2 | 2 | 2 | 2.27 | .47 |
| 22 | 3 | 3 | 2 | 2 | 1 | 3 | 3 | 3 | 1 | 3 | 2 | 2.36 | .81 |
| 23 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .09 | .30 |
| 24 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.00 | .00 |
| 25 | 1 | 1 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1.18 | .40 |
| 26 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1.18 | .40 |
| 27 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1.09 | .30 |
| average | 1.41 | 1.44 | 1.37 | 1.37 | 1.30 | 1.37 | 1.33 | 1.44 | 1.22 | 1.44 | 1.22 | | |
| distribution | 1.08 | 1.09 | .97 | 1.01 | 1.07 | 1.04 | .96 | 1.01 | .89 | 1.09 | .89 | | |

## Reaction by traffic (averages)



| video no. | observers | | | | | | | | | | aver-age | distri-bution |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 1 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 3 | 3 | 2.70 | .48 |
| 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.10 | .32 |
| 3 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | .20 | .42 |
| 4 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.10 | .32 |
| 5 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | .30 | .48 |
| 6 | 3 | 2 | 3 | 3 | 2 | 2 | 3 | 3 | 3 | 3 | 2.70 | .48 |
| 7 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | .30 | .67 |
| 8 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1.00 | .47 |
| 9 | 3 | 1 | 2 | 3 | 2 | 0 | 2 | 0 | 0 | 2 | 1.50 | 1.18 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 11 | 2 | 1 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | .90 | .57 |
| 12 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.10 | .32 |
| 13 | 2 | 3 | 3 | 2 | 2 | 2 | 3 | 3 | 3 | 2 | 2.50 | .53 |
| 14 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2.10 | .32 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2.90 | .32 |
| 16 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 2.80 | .42 |
| 17 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1.20 | .42 |
| 18 | 2 | 1 | 2 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1.30 | .48 |
| 19 | 1 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1.20 | .42 |
| 20 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1.20 | .42 |
| 21 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2.20 | .63 |
| 22 | 3 | 2 | 3 | 2 | 1 | 1 | 3 | 1 | 2 | 2 | 2.00 | .82 |
| 23 | 1 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | .30 | .48 |
| 24 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1.30 | .48 |
| 25 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1.30 | .48 |
| 26 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 2 | 2 | 1.30 | .48 |
| 27 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | .90 | .32 |
| average | 1.56 | 1.33 | 1.74 | 1.41 | 1.22 | 1.15 | 1.44 | 1.19 | 1.30 | 1.48 | | |
| distri-bution | 1.09 | .96 | 1.02 | .89 | .85 | .86 | .97 | 1.00 | .99 | .94 | | |

## Reaction by traffic (averages)



| video no. | observers | | | | | | | | | | aver-age | distri-bution |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 1 | 3 | 3 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 2.60 | .52 |
| 2 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | .80 | .42 |
| 3 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | .10 | .32 |
| 4 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.00 | .00 |
| 5 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | .40 | .52 |
| 6 | 3 | 2 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 2.70 | .48 |
| 7 | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .20 | .63 |
| 8 | 1 | 0 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.00 | .47 |
| 9 | 2 | 1 | 1 | 3 | 2 | 1 | 1 | 0 | 1 | 1 | 1.30 | .82 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | .10 | .32 |
| 11 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | .90 | .32 |
| 12 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1.20 | .42 |
| 13 | 3 | 2 | 3 | 2 | 3 | 2 | 2 | 3 | 2 | 3 | 2.50 | .53 |
| 14 | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2.20 | .42 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2.90 | .32 |
| 16 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 1 | 2 | 3 | 2.60 | .70 |
| 17 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1.40 | .52 |
| 18 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 2 | 2 | 1.70 | .48 |
| 19 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 1.40 | .52 |
| 20 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 2 | 1.40 | .52 |
| 21 | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2.20 | .42 |
| 22 | 3 | 1 | 2 | 3 | 1 | 1 | 0 | 1 | 0 | 2 | 1.40 | 1.08 |
| 23 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | .30 | .48 |
| 24 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.10 | .32 |
| 25 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 1 | 2 | 1 | 1.30 | .48 |
| 26 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1 | 2 | 1 | 1.30 | .48 |
| 27 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 1.20 | .42 |
| average | 1.59 | 1.22 | 1.70 | 1.56 | 1.26 | 1.30 | 1.22 | 1.15 | 1.33 | 1.44 | | |
| distri-bution | 1.08 | .89 | 1.10 | .93 | .94 | .78 | .89 | .86 | .83 | 1.05 | | |

## Reaction by traffic (averages)



| video no. | observers | | | | | | | | | | aver-age | distri-bution |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | | |
| 1 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 2.60 | .52 |
| 2 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | .90 | .32 |
| 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | .10 | .32 |
| 4 | 1 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.10 | .32 |
| 5 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | .50 | .53 |
| 6 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 3 | 2 | 2.80 | .42 |
| 7 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | .10 | .32 |
| 8 | 1 | 0 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 1.00 | .47 |
| 9 | 2 | 1 | 1 | 3 | 2 | 1 | 1 | 0 | 1 | 1 | 1.30 | .82 |
| 10 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | .00 | .00 |
| 11 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | .90 | .32 |
| 12 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1.00 | .00 |
| 13 | 3 | 3 | 3 | 3 | 3 | 2 | 2 | 2 | 2 | 3 | 2.60 | .52 |
| 14 | 3 | 2 | 3 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2.20 | .42 |
| 15 | 3 | 3 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 3 | 2.90 | .32 |
| 16 | 3 | 3 | 3 | 3 | 3 | 2 | 3 | 2 | 3 | 3 | 2.80 | .42 |
| 17 | 1 | 1 | 2 | 2 | 2 | 1 | 1 | 1 | 2 | 1 | 1.40 | .52 |
| 18 | 2 | 2 | 2 | 2 | 1 | 1 | 2 | 1 | 1 | 1 | 1.50 | .53 |
| 19 | 1 | 1 | 2 | 2 | 1 | 1 | 1 | 1 | 2 | 1 | 1.30 | .48 |
| 20 | 1 | 1 | 2 | 2 | 2 | 1 | 2 | 1 | 1 | 2 | 1.50 | .53 |
| 21 | 3 | 3 | 2 | 2 | 2 | 2 | 2 | 1 | 2 | 2 | 2.10 | .57 |
| 22 | 2 | 0 | 3 | 3 | 3 | 1 | 0 | 1 | 2 | 2 | 1.70 | 1.16 |
| 23 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | .30 | .48 |
| 24 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1.20 | .42 |
| 25 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1.20 | .42 |
| 26 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1 | 2 | 2 | 1.30 | .48 |
| 27 | 1 | 1 | 2 | 1 | 2 | 1 | 1 | 1 | 1 | 1 | 1.20 | .42 |
| average distri-bution | 1.44<br>1.09 | 1.33<br>1.07 | 1.63<br>1.08 | 1.70<br>.95 | 1.52<br>1.05 | 1.15<br>.77 | 1.26<br>.90 | 1.07<br>.73 | 1.41<br>.93 | 1.44<br>.89 | | |