BEHAVIOUR STUDY AND QUESTIONNAIRE SURVEY ON DRIVER AGGRESSION

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SUMMARY

The aim of the study was to identify the most apparent forms of driver aggression, to analyse the perceived frequency and severity of aggressive driver behaviour and to suggest countermeasures to prevent aggressive driving. Both a questionnaire survey and direct observations in traffic were conducted. 553 persons - 418 men (76%), and 135 women (24%) - answered 99 questions regarding their perceptions of other road users' aggressive behaviour as well as their own behaviour exhibited in similar traffic situations. Questions about driver reactions to aggression, about the characteristics of the respondents' driving style and explanations of the estimated causes of driver aggression were asked. The respondents have made a selection of possible countermeasures. Voluntary written comments added to the questionnaire were also analysed. The study concluded by giving short and long term strategies to combat driver aggression.
INTRODUCTION

In 1998 a research project (commissioned by Technical and Information Services on National roads, supervised by M. Schulz and P. Vasi) was completed on the phenomenon of driver aggression and the possible ways of prevention and cure.

In the first part of the research report a short overview of the literature on driver aggression ('road rage') was given, introducing the main theories and definitions, including different approaches to explain the causes and background factors as well as summarising the main research findings.

The second part of the research was concerned with carrying out investigations to study the phenomenon of driver aggression by

1) on-site observations and
2) questionnaire survey.

ON-SITE OBSERVATIONS

On-site observations of aggressive driving behaviour were made in forty hours. Information was collected by using both fixed location and vehicle based measurements, including ten hours of video-recording.

It has been found that in Budapest the number of aggressive forms of behaviour increases with the increase of traffic density. The most frequently exhibited driver aggression was overtaking another vehicle and then obstructing it by returning to the same traffic lane too soon, in many cases without using turn signals. Concerning car type, the majority of aggressive drivers were driving big, "Western" type cars.

The most frequent forms of aggression observed on rural roads in moving traffic were too short following distances and dangerous overtaking. (These are typical examples for instrumental aggression, where the main goal of the driver is to gain advantage, without the intention to overcome other drivers.) Real competitions, excessive forms of aggressive behaviour occurred relatively rarely. During the observations in moving traffic we had no opportunity to register either situations of chasing or competition.

Only a few cases of emotional aggression (verbal abuse, gestures etc.) could be observed. We tried to collect information concerning the frequency of such cases through the questionnaire.

The observations showed that some forms of aggressive behaviour tend to spread by the example itself. If one driver exhibited some form of aggression, there were others to follow. "Warning" the other driver by honking the horn or the expression of impatience in such a way have spread especially easily.

The observed forms of aggressive behaviour have not led to critical situations, partly because these are not always directly dangerous, partly because the majority of drivers have been tolerant towards these. So they might be regarded as normal phenomena accompanying traffic participation.

QUESTIONNAIRE

Five groups of question were formulated:

1) questions about basic demographic data, driving experience, accident record, as well as the type of vehicle used by the respondent,
2) questions about how the respondents perceive and judge other drivers with regard to aggression (different traffic situations with manifestations of aggressive behaviour were described and the respondents were asked to judge the frequency of their occurrence),

3) questions about how the respondents perceive and judge themselves with regard to aggression (different traffic situations with manifestations of aggressive behaviour were described and the respondents were asked to judge how frequently they themselves exhibit such behaviour),

4) questions about emotional reactions given to aggressive behaviour, description of the respondent's driving style etc.,

5) questions about the possible causes of aggressive behaviour as seen by the respondents and their recommendations to restrict aggressive driving.

GENERAL FINDINGS

According to the answers given to the questionnaire by 553 respondents, the rank order of experienced forms of aggression are:

- drivers forcing their way into a priority stream of vehicles
- close following
- not using the turn signals
- honking/headlight flashing for urging someone
- obscene gestures, verbal abuse.

The most frequently reported (admitted) aggressive forms of behaviour are:

- close following
- drivers forcing their way into a priority stream of vehicles
- honking/headlight flashing for urging someone
- not using the turn signals
- obscene gestures and
- aggressively occupying parking places.

The comparison of opinions concerning the respondents' own behaviour and the behaviour of others confirms the well-known experience that most of the drivers tend to be much more satisfied with their own behaviour than with that of other traffic participants. In their reported behaviour the negative aspects are less frequently mentioned than in the observed behaviour of others. In the given situation it means that the respondents consider themselves to be less aggressive than other drivers. (Figure 1)

Respondents were asked about their explanations for aggressive driving. The selected answers are shown in Figure 2.

An enquiry was made into the opinions on possible measures to prevent aggressive driving. Figure 3 shows the rank order of suggested remedial measures, of which the most frequently suggested ones are:

- more frequent police presence,
- stricter punishment, as well as
• higher capacity roads and
• better traffic management.

CROSS-SECTIONAL ANALYSIS OF THE DATA

We have analysed the data with regard to the differences between different subgroups, in order to follow the influence of age, gender, accident history, the size of car, aggressivity of the respondent and other factors.

According to the analysis, women seem to better tolerate traffic aggression and counterbalance the behaviour of others (trying to prevent the development of hazardous situations) than men. They more often report to get angry and fume inwardly than men. They also react with fear more often. Women more often than men try to release tension caused by the aggression of others by stopping the car and relaxing. Interestingly, the impact of films as an explaining factor of aggression is mentioned by twice as many women as men.

Women consider police enforcement, punishment as well as education and safety publicity to be the most important countermeasures.

More men than women agree

• with the exclusion of aggressive drivers from traffic,
• with special courses for them and they also more often
• suggest that traffic management and regulations should be improved

Respondents under 25 years more frequently return aggression or obstruct others than respondents over 35 years of age. The latter more frequently take evasive actions in critical traffic situations.

Twice as many drivers with more driving experience state that „dynamic, sportive driving is not necessarily aggressive” than drivers with less driving experience.

Drivers of bigger size vehicles tend to be somewhat more aggressive both in obstructing others and returning aggression, although they report to co-operate in the solution of critical traffic situations with the same frequency as drivers of smaller vehicles.

Drivers of smaller vehicles react with greater emotional intensity to aggression, and at the same time they report more often than the average that they understand or tolerate aggression.

The results of the survey confirm the everyday experience that some types of aggressive behaviour/habits are more frequent in the capital city than in the countryside.

Some of the further findings are presented in Figures 4-5.

23% of the respondents reported to have had an accident in the last three years. Of these, 45% occurred while they were to blame, and 55% while others were to blame.

The data indicate that there is an obvious relationship between aggressive behaviour and the occurrence of accidents.

Comparing the more severe forms of aggression question by question, those who report having had an accident, report more frequent cases of

• close following,
• obstructing other traffic movements
• failing to yield the right of way.

Obscene gestures, verbal abuse and not using the turn signals are also reported more frequently.

Those who have had accidents in which the other party was to blame, more frequently report cases of aggressive behaviour such as

• close following,
• obstructing other traffic movements,
• urging others by honking the horn or using the headlights.

On the other hand, cases of

• failing to yield the right of way,
• not using the turn signal and
• forcing one’s way into a stream is admitted more frequently by those drivers who themselves were to blame in the accidents they were involved in. (See also Figure 4.)

The sample was subdivided into groups of "aggressive" and definitely "non-aggressive" drivers along certain characteristics. 14 % (78 persons) of the whole sample were classified as aggressive on the basis of their reported behaviour, while 19% (107 persons) were qualified as non-aggressive.

Answering the question about the explaining factors of aggression, 53% of the "aggressive group" mention circumstances that obstruct progression, while only 36% of the "non-aggressive group" mention the same. The conviction that "it is the only way to get forward" is mentioned by almost one third of the "aggressive group", while only one fifth of the "non-aggressive group".

It seems that "aggressive drivers" are more sensitive in reacting to the similar behaviour of others

One in every 14 (7%) of the respondents agreed that „nowadays you have to be aggressive if you want to be getting on”.

To the question about their opinion on aggressive drivers, the most frequent answer was: „it is them causing most of the accidents”. Similarly, many of them would severely punish aggressive drivers. More than one third of the respondents just „accept that there are such drivers”.

Clear differences can be detected in the emotional attitudes. Members of the "aggressive group" more often react to the experienced aggression by nervousness or anger than members of the "non-aggressive group".

We have asked the question: "How aggressive do you think the majority of Hungarian drivers are?" The average of the responses indicates an intensity of stronger than medium level of aggression (3.34).

Among the remedial measures to prevent aggression, drivers belonging to the non-aggressive group put greater emphasis on the methods which take account of the human factor (enforcement, fines, publicity campaigns, education, special courses etc.) than members of the non-aggressive group. At the same time, a great proportion of the "aggressive" drivers seek the possibility to prevent aggression in changing the outer circumstances (traffic environment)
(see also Fig. 5).

The report's conclusions focus on strategies for coping with aggression, including driver education and screening, safety publicity, enforcement and modifications in the traffic environment. An approach is recommended in which it is not the aggressive behaviour itself that should be dealt with, but the causes of such behaviour.
Fig. 1
Average frequency of different forms of aggression as seen by the respondents with regard to "themselves" and to "other drivers"
What are the causes of aggressive driver behaviour?

- Influence of films
- "That is the only way to get ahead"
- Aggressive behaviour of others
- Competition on the road
- Refusing rules
- Nervousness due to fatigue
- Alcohol consumption
- Desire for power
- Obstructing circumstances
- Personal problems
- Being in a hurry / time pressure

Fig. 2
Rate of the answers compared to the number of respondents [%]
Fig. 3
Order of preference of measures to restrict driver aggression

- Information on accident causes in the media
- Better education of drivers
- Clear and unambiguous regulations
- Exclusion of aggressive drivers from traffic
- Special courses for aggressive drivers
- Propaganda for improving traffic culture
- More severe punishments
- Improved traffic management
- Higher capacity roads
- Increased police presence

Rate of the answers compared to the number of respondents [%]
Fig. 4

Causes of aggression as seen by "accident-involved" and "accident-free" drivers

- personal problems
- "that is the only way to get ahead"
- alcohol consumption
- obstructing circumstances
- nervousness due to fatigue
- influence of films
- competition on the road
- refusing rules
- aggressive behaviour of others
- desire for power
- being in a hurry / time pressure

Rate of the answers compared to the number of respondents [%]
Fig. 5
Possible countermeasures as selected by "aggressive" and "non-aggressive" drivers

- Improved traffic management
- Higher capacity roads
- Clear and unambiguous regulations
- Better education of drivers
- More severe punishments
- Information on accident causes in the media
- Special courses for aggressive drivers
- Exclusion of aggressive drivers from traffic
- Propaganda for improving traffic culture
- Increased police presence

Rate of answers compared to the number of respondents [%]

Difference
Aggressive
Non-aggressive