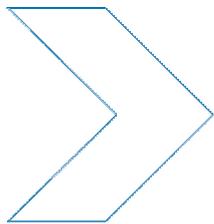


# ➤ Centre for Automotive Safety Research



## Road courtesy and road safety

TP Hutchinson

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## ABSTRACT

The main sections of this report deal with (a) speed, anger and aggression, and young drivers, (b) aspects of courtesy relevant to driving, and (c) campaigns. Courtesy refers both to behaviours (the presence of some and the absence of others) and to the attitudes and habits of mind that accompany behaviours. As behaviour, courtesy is mostly safe but sometimes not (when it is in conflict with the conventions of driving). As an attitude — thinking about possible actions of other road users and adjusting one's own behaviour, and avoiding any aggressiveness in one's driving — courtesy certainly should be encouraged. This is quite a complex and conditional message. Complex messages are unlikely to have much effect. Thus the present report does not recommend putting road courtesy at the centre of a road safety campaign. It might, however, be an appropriate component of a broader campaign: if some behaviour were being promoted on grounds of safety, courtesy or consideration for others could be given as a reason (that might carry weight with some audiences). Substantial advances have been made in the study of topics within social psychology that are relevant to driving: personality, attitudes, social norms, behaviours, aggression, habit formation and maintenance, and so on. There may soon be successful applications in applied fields such as driver safety. However, there is already evidence that some attitudes and behaviours of young drivers — anger, aggression, desire to speed (that is, the opposite of courtesy) — are treatable by psychotherapy.

## KEYWORDS

Driver behaviour, Attitude, Road user education.

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## Summary

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This report discusses both road courtesy and campaigns to promote road courtesy.

Many types of act of positive courtesy on the road tend to promote safety. But sometimes courtesy is in conflict with the conventions of driving behaviour, and when this is the case courtesy can be dangerous.

For road safety, some specific aspects of courtesy, or its opposite, are perhaps more important than courtesy as a total concept. These are discussed in this report under the headings of speed, driver anger and aggression, and young drivers.

Courtesy refers both to behaviours (the presence of some and the absence of others) and to the attitudes and habits of mind that accompany behaviours. As behaviour, courtesy is mostly safe but sometimes not (when it is in conflict with the conventions of driving). As an attitude — thinking about possible actions of other road users and adjusting one's own behaviour, and avoiding any aggressiveness in one's driving — courtesy certainly should be encouraged. This is quite a complex and conditional message. Complex messages are unlikely to have much effect. Thus the present report does not recommend putting road courtesy at the centre of a road safety campaign. It might, however, be an appropriate component of a broader campaign: if some behaviour such as slower speeds were being promoted, courtesy or consideration for others could be given as a reason to justify, to validate, that behaviour.

In recent decades, there have been substantial advances in the study of topics within social psychology that are relevant to driving: personality, attitudes, social norms, behaviours, aggression, habit formation and maintenance, and so on. In a few more years, there may be real pay off in applied fields such as driver safety. However, there is already evidence that some attitudes and behaviours of young drivers — anger, aggression, desire to speed (that is, the opposite of courtesy) — are treatable by psychotherapy, and the report concludes by suggesting that a large-scale experiment within the driver licensing process is justifiable.

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# 1 Introduction

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*“Kindness and common courtesy toward your fellow creature will lessen accident more than any other rule of the road. Teach this truth to your children.”*

The above is from a notice, probably from the 1950s, of the Road Safety Division of the National Safety Council (S.A.) Inc. More recently, Evans (1990) considered six approaches to protecting road users: crash-phase protection, divided into passive and active; technology for crash avoidance, divided into high-tech and traditional; and behaviour modification, divided into specific and social norms. Of these, Evans judges that social norms have been the most important in the past and have the greatest potential for the future. Under the heading of social norms, Evans picks out three areas: portrayals in mass entertainment of the use of motor vehicles in what is actually a life-threatening way as instead heroic or humorous; courtesy on the road; alcohol.

Evans is quite open that these are his judgments or opinions, not facts rigorously established. They are, however, reasoned judgments, and are worth taking seriously. What does Evans mean by courtesy on the road? Unfortunately, he does not fully explain. He certainly includes: absence of driving behaviour of a competitive nature; making allowance for the limitations of other road users; making allowance for mistakes by others; and an attitude that lies behind such behavioural decisions. Evans views the mass media as extremely important in establishing social norms including road courtesy: he accepts that it may be difficult to prove that any one advertising campaign had an effect, but believes that the cumulative effect over a period of years or decades is great.

Courtesy refers both to behaviours (the presence of some and the absence of others) and to the attitudes and habits of mind that accompany behaviours.

- In part, courtesy implies abiding by the rules and conventions of social behaviour. But there is also an implication of going beyond them, of being more polite than is demanded by the circumstances. Here there is an obvious conflict with road safety: safe roads depend upon everyone adhering to the same rules, behaving in a way that is predictable by others. Deviating from that — even in order to be polite and considerate — is potentially dangerous. For example, a driver on a main road who gives up the right-of-way may unwittingly contribute to a crash because other drivers are not expecting that. (I have in mind allowing a vehicle on a side road to emerge, or allowing an oncoming vehicle to turn across stationary traffic in one lane when another lane may not be stationary. The driver to whom the courtesy is extended may be distracted by it or mistaken about how far it extends.)
- Turning to attitudes and habits of thinking, there is less ambiguity. Courtesy means thinking about possible actions of other road users and adjusting one’s own behaviour, and avoiding any aggressiveness in one’s driving, then this certainly should be encouraged.

It thus seems likely that any campaign for courtesy on the road would need to be complex. In regards to specific behaviour, it would have to urge people to do X (where X is something courteous) except when it would be a surprise and potentially dangerous. One might expect that campaigns promoting safety will have their greatest effect when the message is simple and unqualified — according to Goldenfeld et al. (2000, p. 75), “we should be precise as to the distinct character of the traffic behaviour we aim to change and the context of this behaviour”. In contrast to this, courtesy is neither simple nor unambiguously good. Nevertheless, there are some particular behaviours that come under the broad heading of courtesy (or discourtesy) and that can confidently be characterised as safe (or unsafe). For example, aggressive driving and speeding are discourteous and unsafe.

It may also be noted that in many circumstances on the road, acts of courtesy are impracticable: events are happening at too great a speed, or at too great a distance, for the

usual benefits of courteous behaviour between people to occur. As a behaviour, courtesy is mostly practicable when vehicles are moving at slow relative speed, whereas it is usually high relative speeds that lead to serious injury or death. (Admittedly, courtesy between one driver and another can sometimes have consequences for a third driver, whose relative speed may not be low.) As an attitude, or predisposition to some behaviours and against others, courtesy is more broadly important.

The present report covers road courtesy and campaigns to promote road courtesy. It is organised as follows:

- Speed, anger and aggression, and young drivers.
- Aspects of courtesy relevant to driving.
- Recent reviews of interventions.
- Conclusion: A personal view.

## 2 Speed, anger and aggression, and young drivers

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The issue of road courtesy plainly includes speeding, driver anger and driving aggression, and the attitudes and behaviours of young drivers. It should be said, though, that each of these topics is so large that only a small selection of work can be referred to.

### 2.1 Speed

Choosing a low driving speed (I do not mean so low a speed as to hold up other traffic) is sometimes thought of as a component of courtesy of the road.

De Pelsmacker and Janssens (2007) present a psychological model of speeding behaviour. Person characteristics (particularly, their norms) lead to their attitude to speed limits and their attitude to speeding; these attitudes and their habit as to speeding lead to an intention; the intention and (again) their habit as to speeding lead to the behaviour. Goldenbeld et al. (2000) also pay a good deal of attention to habit as being important in driving, and they favour behaviour change campaigns that are built around small, incremental, relatively easy changes. Delhomme and Cauzard (2000) report a degree of concordance in drivers' opinions and (self-reported) behaviour: those who consider they drive faster than average express more anti-safety opinions and admit more frequently that they breach driving regulations than those who consider they drive as fast as the average or less fast. From a focus group sample, Redshaw (2004) found that "young people demonstrate a very car-centred understanding and experience of speed" — they did not think about other drivers perhaps having specific reasons for driving slowly, or the effects on the urban environment of high speed traffic. However, Redshaw (as previous authors have done) considers emphasising to young drivers the prospect of losing their driving licence as the advertising strategy most likely to be effective. Young drivers who are delayed by a vehicle ahead driving slowly may think the worst, not the best, of the driver: they may not have the imagination or experience to realise there could be a good reason (Redshaw, 2004; Evans, 1990). When a driver's reason is perceived as hostile, an aggressive reaction is more likely (Yagil, 2001). If that is the case, the natural place to deal with it is in an "other driver" component of driver education.

McKenna (2005) reports on the reasons for speeding given by drivers who had been caught speeding. Those breaking the speed limit by a small margin do not seem to have had any particular reason at all for doing so. Those breaking the speed limit by a large margin tended to be more focussed on their driving, more upset or annoyed, more likely to be enjoying the speed, and more likely to be feeling under time pressure. Stradling et al. (2003) report on a household survey of car drivers in Scotland, including car use, speed choice, knowledge of speed limits, views on speed limits and enforcement, views on measures to reduce speeding, and recent crash history and its association with speeding.

It is not only present characteristics of people (attitudes, aspects of personality, etc.) that are predictive of driving behaviours, but also their characteristics years in the past: data from a long-term longitudinal study, the Australian Temperament Project, indicate that certain behaviour problems from mid-childhood onwards are predictive of self-reported speeding (and other risky driving behaviours) as a young driver (Harrison et al. 2004).

A model of driving described by Al-Shihabi and Mourant (2001) included an "emotions unit", as well as perception, decision-making, and decision-implementation units. The emotions unit balances speed and risk: too low a satisfaction with efficiency, and the vehicle would try to speed up; too high a discomfort with traffic conditions, and the vehicle would try to slow down. To a limited extent, different emotions can be imposed, to reflect different types of driver. This work was in the context of the virtual environment of a driving simulator: the (virtual) vehicles there should, ideally, behave as if they were driven by humans. It is mentioned here because when the task is to program the behaviour of these vehicles, it is unavoidable that definite assumptions be adopted about how driving behaviour occurs: operationalisation of theory is needed, ambiguous words are definitely not good enough.

It is within the bounds of possibility that driving speed has a more direct effect on people, and the choice of driving speed may be made for simpler reasons, than the word "psychology" tends to imply. The driver's seat is a particular sensory environment, and it may be that there are sensory effects that are directly more or less rewarding. There is work that emphasises that speed has physiological effects, probably arising via vibration (Min et al., 2002; Uchikune, 2002). Horswill and McKenna (1999) demonstrated that greater car noise leads to a lower choice of speed.

In Singapore, there is an annual road courtesy campaign. Driving actions that are encouraged include giving way, waving to say thanks, signalling early, and maintaining lane discipline. The driver is also viewed as having control over his or her mood, as well as actions, and is exhorted to avoid getting frustrated or upset. (A paper by Lazar, 2003, gives some information about these campaigns, but is very largely concerned with them as a means of social change and control, and has little about road safety.) The actions refer to situations where vehicles are travelling at low relative speeds (courteous acts are less practicable at high speeds), and are unlikely to have much effect on serious crashes. An effect on mood might be more pervasive, persisting from crowded congested conditions into the open highway, but would be very difficult to demonstrate empirically.

Jonasson (1999) interprets the actions of traffic participants through certain social rules that revolve around courtesy. In Goteborg, Sweden, Jonasson (p. 53) was impressed by courtesy, not aggression: "Cooperative acts in traffic practice are as important as conflict acts. On the one hand it is surprising that I found so few examples of expressions of rudeness, impatient self-interest, deference norms or aggressive behaviour in traffic. Instead I found more of polite courtesy and cooperation, rather than confrontation." Again, however, the context is traffic of slow speed, and thus relevance to serious accidents is limited. Jonasson continues: "But on the other hand, very few studies are conducted by direct observation of the practice of social interaction in traffic and interpreted within a wider theoretical framework." I am not sure what Jonasson means by this sentence. A possibility is that he is calling for the systematic study of interactions between people in traffic that turn out safely, to complement the familiar study of accidents. This is analogous to the study of the mechanisms by which accident victims escape serious injury, that complements the study of the mechanisms by which injury occurs.

## 2.2 Anger and aggression

Courtesy is certainly, among other things, non-aggressive driving. Tasca (2000) has reviewed research on aggressive driving. He concludes that the following are risk factors.

- Being young and male.
- Traffic situations that are anonymous and from which escape is easy.
- Some features of personality, in particular, sensation seeking. But Tasca warns (p. 17): "Personality, however, has been found to be a poor predictor of social behaviour".
- Anger. (Tasca cites some studies that find that the state or mood a driver is in at a particular time, as well as their longlasting personality traits, affects driving.)
- Belief in one's own superior driving skills.
- Unexpected traffic congestion.

My impression is that researchers in the U.S.A., in particular, see driver aggression as much more of a problem than it is in Adelaide. For example, Walters et al. (2000) reported on some aspects of the congested driving environment (in Dallas, Texas) that induce irritation. Section 3.3 of that report discusses focus group results. The main problem areas seemed to be tailgating, inattention to the driving task (e.g., using a mobile phone, eating, applying make-up), and merging on to a busy freeway. Such behaviours do occur in Adelaide, but to a limited extent. If any were of sufficient concern to require a countermeasure, I suggest that this should emphasise the specific action and what behaviour to adopt instead, with

courtesy or consideration perhaps mentioned as a reason, rather than being in the forefront. There is also some attention in the report to the roadway as a source of driver irritation: some issues would involve major expense to correct, but there are a number of others concerned with absent or incorrect signage that reflect poorly on the road authority.

It may be that (a) some drivers are more angry and aggressive than others, (b) they and other road users are at elevated risk because of this, and (c) the anger and aggression are treatable. Papers by J. L. Deffenbacher and colleagues provide good examples of this line of work. For example, Deffenbacher et al. (2000) found that drivers scoring high on the Driving Anger Scale (which includes a discourtesy subscale, incidentally) tended to have more accidents and similar incidents than drivers who scored low. Furthermore, a controlled evaluation of two forms of treatment (termed relaxation coping skills, and cognitive and relaxation coping skills) showed a degree of success in reducing driving anger. The treatment consisted of eight one-hour weekly group therapy sessions. Another relevant study is that of Galovski and Blanchard (2002). Are such results as those of Deffenbacher et al. credible? Does psychotherapy, not necessarily in the driving context, frequently work? The positive findings of Deffenbacher et al. and of Galovski and Blanchard could be dismissed on the grounds that they use self-report data (not object driving behaviour, let alone crash records), and that sample sizes are small (57 and 28 participants in the two studies). I do not suppose that psychotherapy works in every case, or for every problem, but I think that enough evidence has accumulated over recent decades concerning therapies classed as cognitive-behavioural to persuade many people that psychotherapy works in some cases, and for the results of Deffenbacher et al. to be taken seriously. If a search is made for cognitive-behavioural therapies in the reviews published by the Cochrane Collaboration ([www.cochrane.org](http://www.cochrane.org)), a wide variety of applications are found, and many (not all) are broadly favourable.

Stanovich (2006) notes that adolescents with behaviour problems verbally may reject their own behaviour, and claims that their desire to desire differently (as Stanovich puts it) can be built upon therapeutically.

The circumstances in which driving anger or aggression occur are sometimes investigated by having drivers keep a diary of such occasions. A study of this type by Underwood et al. (1999) found a correlation of only 0.21 between the Driving Anger Scale (DAS) and total amount of anger reported using the diary (with anger linked to near crashes being excluded). The study also included the recording of acts of courtesy by other drivers. It is common for psychological constructs derived from questionnaires to be found not to correlate highly with similar concepts measured by other means, so this low correlation is not surprising — but it should stop us getting too enthusiastic about the DAS. The validity of the subscales of the DAS is questionable: see Sullman (2006) for discussion of apparent national differences.

## 2.3 Young drivers

The attitudes, personalities, moods, and behaviour of young drivers are particularly important because of the higher crash rate of the young.

The recent paper by Reyna and Farley (2006) is (to me) something of a surprise. I consider that it may lead to considerable changes in opinions about young drivers' psychology and behaviour. Reyna and Farley argue that adolescents do not typically perceive themselves as invulnerable or underestimate risks, that interventions that stress accurate risk perception are likely to be useless or worse, and that it is better to discourage the weighing of risks and benefits. From their page 35: "Most interventions to reduced risk taking aim to enhance the accuracy of risk perceptions, to overcome adolescents' belief that they are invulnerable, and to transform intuitive, biased adolescent decision makers into analytical, unbiased adults. Ironically, according to the data, each of these aims is misguided". Another paper challenging the idea that young people feel invulnerable is that by Henley and Donovan (2003); the context in this case was smoking rather than driving.

Reyna and Farley (p. 33) identify three groups of adolescents (or three modes of decision making).

- Risky deliberators, who take risks because perceived benefits outweigh risks.
- Risky reactors, who do not intend or expect to take risks and whose rational deliberation might lead them to avoid actions that are taken impulsively, emotionally, spontaneously, irrationally.
- Intuitive risk avoiders, like mature adults, do not consciously deliberate or choose, but “retrieve appropriate risk-avoidant values, and never proceed down the slippery slope of actually contemplating tradeoffs between risks and benefits”.

According to Reyna and Farley, traditional countermeasures are only appropriate for adolescents in the first of these groups, and they give a great deal more emphasis than most authors to the possibility of moving people into the third group (or encouraging this mode of decision making). They consider this can be done (their footnote 5) “through practice at intuitively grasping the bottom-line gist (or meaning) of risk situations, and then rapidly retrieving and implementing risk-avoidant values from long-term memory”. Mature decision making involves gist-based qualitative reasoning: the qualitative possibility of catastrophe (e.g., someone’s death from drunken driving) is known to be non-negligible, and the risk is avoided.

Reyna and Farley do not refer to it, but the paper by Goldenbeld et al. (2000) suggests a similar threefold classification of driver behaviour: reasoned (planned), impulsive (emotional), and habitual. They note that road safety campaigns typically are directed at the first of these, not at emotional or habitual behaviours. But an attitude change, though important in order that attitude not be a barrier to the desired behaviour, may not be sufficient for a behavioural change to occur.

Nelson et al. (1993) measured the perceptions that young (average age 19) and old (average age 66) drivers have of the courteous and discourteous or unsafe driving behaviours of young and old drivers. The results are probably unsurprising: “Younger drivers viewed older drivers as overly cautious, too slow to act and apt to cause accidents, and rated their peers as overly aggressive and discourteous. Older drivers characterised younger drivers as deficient in courtesy and safe driving practices, and they rated their peers as cautious, courteous, and aware of age-related limitations.” As mentioned, these are perceptions, not necessarily objectively correct.

## 3 Aspects of courtesy relevant to driving

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This Section comments on some aspects of road courtesy that have achieved a degree of prominence recently. The topics will be:

- Respect.
- Interactions between road users.
- Psychological measurements as predictors.
- Social norms.
- Horn-honking.
- Helping.
- Organisational citizenship.

This list commences solidly within driving, but later items are within social psychology, rather than specifically driving.

### 3.1 Respect

In the U.K., the government wishes to promote respect — “respect for others, their property and their privacy, civility, good manners and a recognition that everyone has responsibilities as well as rights. The behaviour which expresses these values includes thinking about how our own actions affect others, acting unselfishly and helping others” (Respect Task Force, Home Office, 2006, p. 5). As part of the government’s initiative, the Department for Transport wished to find something out about respect and disrespect on the road, and a report has now been published (Department for Transport, 2006). The methodology was described as qualitative — group and individual discussions, a total of 96 people. The report concentrates on respect, with little about implications for crash numbers. Three types of disrespect were identified.

- Active. Examples of this are joyriding, driving without insurance, abandoning cars, and double parking. It is presumed to be confined to an inconsiderate minority of people.
- Reactive. This is the category most closely related to courtesy, or lack of it, and includes tail-gating, impatience, hooting, and flashing headlights.
- Passive. This includes exceeding the speed limit by a small proportion, using a mobile phone while driving, parking illegally, and appealing against a parking penalty.

There is very little in the report about the (relatively rare) active disrespect. Turning to the other forms, few of the people taking part in the discussions felt much concern about either reactive or passive disrespect. Thus the report concludes that advertising against reactive disrespect is unlikely to be effective. It is slightly more optimistic in the case of passive disrespect, suggesting the best approaches may be to question drivers’ confidence in driving at speed or while on the phone, and to question the perception that “everybody does it” (i.e., seek to change the perception of the social norm).

### 3.2 Interactions between road users

Many encounters in traffic are much too fleeting for there to be any interaction between the drivers. These tend to be the ones where the relative speed is high, and so is the potential for serious injury. If there is time for interaction, the relative speed of the vehicles is probably low, and thus the potential impact on road safety is quite limited.

From time to time, suggestions are made for better signals between drivers — for example, for there to be a way of politely honking the horn, or of expressing regret after making a driving error, or of acknowledging another driver’s courtesy, or of expressing an intention to stop and reverse. Renge (2000) notes that there are only a few signals available, and the

meaning depends on the behaviour and the situation, and remarks that there has been little research on the interpersonal communication skill of drivers. A wider repertoire of signals would seem to be desirable, and it is perhaps surprising they do not exist. Perhaps they do in some cities. But the low relative speed of vehicles that have time to interact means that any effect on the severe end of the spectrum of crashes would only be limited.

Riders of pedal cycles and low powered motor cycles account for only a small proportion of road casualties in most economically advanced countries, but there are obvious reasons for giving disproportionate attention to them: government might want to promote cycling because of health benefits, or to impose high taxes on petrol, or to develop expertise because of the great numbers of such casualties in poorer countries. One measure that might be considered to improve the safety of riders of pedal cycles (and low powered motor cycles) would be to allow them to ride on the footpath. If this were encouraged, presumably there would need to be signals between riders and pedestrians: everyone would need to agree that sounding a bell when approaching from behind a pedestrian was a polite warning and request, not a rude demand for right of way, and that a wave by the pedestrian was acknowledgement of hearing it. Without courteous signalling, riders would get a bad name among pedestrians.

Some work on drivers' interactions is being conducted in the context of the development of Advanced Driver Assistance Systems (ADAS). However, judging from the following remarks of Houtenbos et al. (2005, pp. 263-264), it is at quite an early stage: "Although technology produces more and more opportunities to provide road users with all sorts of information or even to actively support parts of the driving task, we still do not have a clear understanding of the ADAS-related needs of an interacting driver. In particular, the mechanism whereby road users are able to avoid accidents by compensating for each other's behaviour is not yet thoroughly understood." Similarly, Juhlin (1999, p. 2) remarks: "In designing this new technology, irrespective of whether the computers are to serve as drivers, co-drivers, or teachers, it is essential to understand how drivers themselves achieve co-ordination....If the artificial drivers are socially incompetent, this could put serious strains on other road users."

### 3.3 Psychological measurements as predictors

It might be that psychological measurements are largely unsuccessful in predicting crashes. According to af Wåhlberg (2003, p. 473 and p. 482), "For decades, traffic researchers have been trying to identify the psychological factors that are thought to cause, or at least predict, accidents (accident proneness, sensation seeking, thoroughness of decision making, etc.). No great success has ensued and the research has continued to be rather individualistic concerning the variables and methods chosen.... It would seem that very few of the studies on accident predictors are actually possible to interpret in any straightforward way, and we are left with a very vague knowledge of what psychological variables can actually predict accidents." Reviewing the literature, af Wåhlberg demonstrates how little attention researchers have given to the reliability or stability of psychological variables used as predictors, to the time period for the calculation of accident frequency, and to culpability for accidents. af Wåhlberg (p. 481) further notes that this does not touch on "The use of self-reported crash data, crash definitions, the mixing of predictor variables of different types (e.g., sex and personality), the lack of replications of many studies, how to handle the exposure problem, other sub-groupings than culpability, etc."

The paper by Assum (1997) provides an example of instability of results from psychological variables. There was an association between general road safety attitude and accident rate, but on disaggregation by driver age the association disappeared: it had arisen from poor attitudes and high accident rates both being associated with young age. It is true that Assum disclaims any social psychological basis for the questionnaire used, instead saying that the questions about what is and what is not acceptable in traffic were common sense ones, but it would be a brave psychologist indeed who would say this was the reason that no association was found. Assum (1997) is also an example of a study that, unusually, attempted to measure qualities of courtesy or patience or consideration for others or

responsibility among drivers. Among the scales created from items on the questionnaire developed by Assum were ones reflecting consideration for other road users, responsibility, and being patient (as contrasted with stressed and irritated).

### 3.4 Social norms

There is a long tradition of pessimism about psychology among road safety researchers, the comments by af Wählberg quoted above are certainly not unusual. One of the reasons why they are not all pessimists may be that they sense that there are indeed methodological deficiencies in research, and that negative results in the past do not guarantee that results will be negative in the future. More positively, another reason why many are more optimistic is that for some public attitudes and norms regarding health behaviours, there seem to have been almost revolutionary changes occurring over quite a short period of years. Smoking, drink driving, and seat belt use are prime examples. It may also be the case for speeding: Mulholland et al. (2005) have reported that in Victoria (Australia) there were substantial changes in attitudes to speeding over recent years, for example, the proportion of drivers reporting that they keep to the speed limit in 50 km/h zones increased from 55 per cent in 2001 to 76 per cent in 2005.

Studies of driving aggression repeatedly refer to the driver's anonymity being a contributory factor. Anonymity could be abolished: though at present vehicles typically display only a registration plate and an annual licence, society could insist that every driver display his or her name on an easily visible sign. After all, it is not uncommon for commercial vehicles to display a notice "My conduct as a professional driver is on display. Comments and complaints may be made to [phone number]". It is not clear to me what future broad changes in society might occur as a result of the increasing intrusions on privacy. There is now a great deal of video surveillance of public behaviour, and many people carry some form of camera. Potentially, many drivers who behave badly could be identified. Will bad behaviour be deterred? Or does society consider punishment so troublesome and expensive that aggressive drivers can laugh at the evidence against them?

### 3.5 Horn-honking

In social psychology, there has been some research in which the experimenter's car remains stationary at a traffic signal after that has turned green, and whether the vehicle behind honks its horn is then noted (and, if it does so, after what time latency). The question then arises as to how the honking, and its latency, are to be interpreted. The word "aggressive" has been used both in the early study by Doob and Gross (1968) and in later studies, but there is not usually a serious attempt to justify it. Baron (1976) reported some success in reducing drivers' aggression (i.e., reducing the proportion who honk, and increasing the latency) by exposing them to distracting stimuli that were intended to generate reactions (e.g., humour) incompatible with aggression.

McGarva and Steiner (2000) report an experiment in which participants were provoked by horn honking from a vehicle behind.

### 3.6 Helping

In many cities, in different countries, R V Levine has tested whether passers by help a stranger in various small ways, and has found large differences between cities (e.g., Levine, 2003). He describes what he is measuring as "helpfulness" or "civility", rather than "courtesy", but it is evidently not very different — though whether it would be reflected by driver behaviour is questionable. Consider this, from Levine (2003, p. 232): "Experiments have shown, for example, that reversing the anonymity and diffusion of responsibility that characterise life in some cities — by increasing personal accountability, or simply by getting people to address one another by name — boosts helping." There seems nothing situation-bound in this hypothesis: it ought to apply to drivers as well as passers by. It seems to

suggest that if drivers were more easily seen, or the vehicle were labelled with the driver's name, driving behaviour would improve.

### 3.7 Organisational citizenship

There has been some discussion of courtesy in the management literature (e.g., MacKenzie et al., 1999). Courtesy is seen as foresightful actions that help prevent problems, an aspect of what is termed organisational citizenship. An example is consultation before taking action that affects someone. That is quite distant from any road safety application, but problem prevention and foresight do seem to capture much of what is meant in the traffic context. It would indeed be interesting if courtesy as an attitude or habit of behaviour in the organisational citizenship sense were found to extend into other contexts, but I am not aware of this being investigated.

## 4 Campaigns

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Referring to any sort of campaign to improve driving behaviour and prevent crashes, not only road courtesy campaigns, there is little that can be said with real confidence.

- The vast majority of research is non-experimental: for example, a change is made and behaviour before is compared with behaviour after. There are many different assumptions and methods available in analysing the data. They may, and frequently do, give different results.
- There is little experimental research. By “experimental”, I mean with the relevant units (such as people or vehicles or cities) being randomly allocated to treatment or control groups, with a before-after comparison being made in both groups. As there is so little, it is unlikely to have directly addressed courtesy.

As mentioned in the Introduction above, Evans (1990) accepts that it may be difficult to prove the effectiveness of advertising. I will cite three further studies to buttress this rather negative view.

- Donovan et al. (1995, Section 8) attempted to review Australian road safety campaigns. However, they found (Section 8.1.3) that “Few campaigns are adequately documented, and perhaps fewer are appropriately evaluated. For this review, we received very few documented campaign evaluations, and even fewer that included formative research reports such as qualitative strategy development, and/or concept testing, and/or pre-testing of rough or finished ads. The usual campaign evaluation was a pre-post target population survey methodology (independent samples, quasi probability samples), or simply a post-only survey.”
- According to I. Lewis et al. (2007, p. 48), “Threatening advertisements have been widely used in the social marketing of road safety. However, despite their popularity and over five decades of research into the fear-persuasion relationship, an unequivocal answer regarding their effectiveness remains unachieved.”
- T. Lewis (2001) describes how different analyses of time series (non-experimental) data on the effect of New Zealand television advertising against drink-driving lead to different conclusions. He ends his paper by advocating experimentation. Though he accepts that the public may feel uncomfortable with the ethics of giving a “treatment” to some places and withholding it from others, because (of course) best practice should be followed in matters of public safety, he points out that “the experts do not know what is the best practice”. (For discussion of randomised experimentation in road safety, see Hutchinson, 2004.)

Nevertheless, there have been recent reviews that have said some helpful things. Most attention will be paid in this Section to that by Lund and Aarø (2004), with some mention of Delaney et al. (2004) and Elvik and Vaa (2004). For the practical marketing of road safety, see Donovan et al. (1995) and Donovan (1995).

### 4.1 Review by Lund and Aarø (2004)

It is hardly more than common sense to think of an enduring characteristic of personality (a trait), of which an attitude is a part, leading to a mental and emotional mood at any particular moment (a state), which in turn is responsible for behaviour, and finally there may be a crash as a result. In Lund and Aarø (2004) there is a more elaborate model, with boxes and arrows pointing hither and thither. The main division is between the person and the context. For the person, a distinction is made between attitudes (and beliefs) and behaviour. For the context, a distinction is made between social norms (and safety culture) and the physical and organisational environment. Three types of preventive measures are shown: behaviour modification (acting upon behaviour), attitude modification (acting upon attitudes), and structural modification (acting upon the physical and organisational environment). Most of the paper by Lund and Aarø is given over to an extensive review — there are 189 references

-- of the literature on interventions intended to prevent or mitigate accidents via one of these mechanisms. The following summary of their findings is from their Abstract:

Some of the hypothesised paths in the model seem to be weak: Attitude modification --> Attitude --> Behaviour --> Accidents and injuries (the KAP [Knowledge Attitude Practice] model), while others seem strong: Structural modification --> Physical and organisational environment --> Behaviour --> Accidents and injuries. When various preventive measures are used in combination, and to the extent that they influence social norms and cultural factors, they are probably more effective than interventions affecting individuals (modifying factors such as attitudes and beliefs) only.

Lund and Aarø's review is thus quite pessimistic about preventing accidents by changing attitudes. I do not disagree with that. However, I do think the tone of the writing is, in respect of driving behaviour, more certain than is justified by the literature that Lund and Aarø cite. I have several reasons for saying this.

- The literature reflects a variety of different interventions, different settings, different outcome measures, different methodologies, and (of course) different results.
- The great majority of studies used methodologies of quite low quality. (That does not mean their answers were wrong, but it does cast doubt.)
- There are very few studies on driver behaviour. By my count, there are no more than six studies cited by Lund and Aarø that might (judging by the brief description given) be relevant to driver behaviour. (I have excluded, as well as occupational and home safety studies, such matters as promotion of seat belt wearing, cycle helmet wearing, child restraint use, safe behaviour by pedestrians, and so on, which are not directly related to the driving of a motor vehicle, and also alcohol-related matters, as these might be different from others.) Only two of these have some relevance to courtesy.

For the present purpose, the two studies worth following up are those of Anderson (1978) and Koenig and Wu (1994). The study of Anderson (1978) may quite quickly be summarised. It found that mailed traffic safety booklets were not effective in reducing subsequent accidents and convictions. A notable feature of this research was the good quality of the methodology: the assignment of drivers to one of the treatment or control groups was random.

## 4.2 Koenig and Wu (1994) on yielding to pedestrians

The study most relevant to courtesy was that of Koenig and Wu (1994), who reported on the effectiveness of a media campaign aimed at persuading left-turning drivers to yield to pedestrians who were crossing. (The study was in Canada, so the equivalent in Australia would be right turners.) It seems fair to describe this as a courtesy behaviour. They found an increase in this behaviour after the campaign. Though this is a positive result, two important reservations should be noted.

- It does not imply that courtesy campaigns would be expected to have wide relevance in road safety: turning usually occurs at slow speed, and thus there is more time for courtesy to occur than in many other traffic situations.
- The result refers to the behaviour of yielding: any effect on crashes and injuries is not investigated.

In passing, it may be mentioned that Koenig and Wu seem to have misinterpreted one aspect of their results. What they wished to do, and claimed to have done, was to obtain results that applied to left-turning drivers only, with right-turning drivers being regarded as a sort of control group, as the media campaign was targetted at the left-turners. However, their results refer to both left- and right-turning drivers, averaged. What went wrong was they included direction of turn only as a main effect in their logistic regression, they did not include an interaction between direction of turn and time period.

## 4.3 Other reviews

Turning now to other reviews, the book by Elvik and Vaa (2004) pays a lot of attention to the methodology of different research projects, with those that used high quality methodology (e.g., randomisation into treatment or control groups) being given much more prominence than those of lower quality (e.g., comparison of before with after, without any form of control group). From p. 951 of that book, it seems that there is no evidence that some form of campaign to increase courtesy on the road would improve road safety. Delaney et al. (2004) review road safety campaigns and relevant theories of behaviour change. Delaney et al. do not suggest that road safety campaigns are always ineffective, but there does not seem to be anything in their report to suggest a courtesy campaign might be effective.

## 4.4 Comment

So there seems to be no particular reason to make road courtesy the centre of a campaign. Might road courtesy be an appropriate component of a broader campaign? If some behaviour such as slower speeds were being promoted, courtesy or consideration for others could be given as a reason to justify, to validate, that behaviour. That is, it might be said that a certain speed would be discourteous to those outside the car, even if it were safe.

To claim that campaigns with reasons are more likely to be effective than campaigns without certainly seems to be in line with common sense. And Reyna and Farley (2006, footnote 4), say that if it is desired to instil an automatic rejection of risky behaviour, this is more likely to be effective via understanding than via rote memorisation. There might be some plausibility to a more specific theory. One might argue that, for some people, acceding to a threat appeal ("Slow down, or you'll be booked for speeding") would tend to reduce their self-esteem and that such an appeal would be ineffective on its own. Coupling it with an appeal to courtesy ("Slow down, because you're a real Aussie who thinks of others") would remove the resistance to compliance and the combination of appeals would be effective.

## 5 Conclusion: A personal view

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Courtesy is a broad term, and the discussion in this report has been quite wide ranging. The reader might want to cut through all the words and ask whether it is worth doing something, spending money, on this issue. I suggest four points have emerged.

- In part, courtesy refers to a set of attitudes, or a personality trait, or a state of mind. Quite a strong case could be made that there have been substantial advances in understanding in recent years, and that there is a realistic prospect of going further in future years. Disentangling the social norms, attitudes, traits, moods, and behaviours that affect crash risk, either directly or indirectly, would be a real scientific advance, and would hold promise that effective crash-reduction measures were only a step away.
- Now suppose that some sort of media campaign is proposed. Are there merits in road courtesy being chosen as the theme? I think not, for two reasons. (a) It is presumably more difficult to get a behavioural change from a conditional message than from a simple one. (b) Urging people to be courteous does not tell them what action to take, but instead they need themselves to translate courtesy into something specific.
- Campaigns around some specific behaviour changes that fit under the broad heading of road courtesy seem better bets. Choosing a slightly lower driving speed is probably the most important of these, and following at a safe distance and allowing merging from the left are others.
- It is also possible that something resembling a courtesy appeal might have a role in overcoming resistance to a threat appeal (see Section 4.4).

But I would like to end with something more controversial. If I had an annual budget of, say, 4 million dollars, I would not wait for the level of understanding that the first point above looks forward to. In my opinion, the evidence (see Section 2 above) that (firstly) anger, aggression, desire to speed, and related attitudes of young drivers are contributory to road crashes, and (secondly) they are treatable, is good enough that a large-scale experiment is worth conducting. This might, as part of the driver licensing process, randomly assign (say) 8000 17-year-olds to \$500-worth of individual and group psychotherapy each, that would treat attitudes and behaviours (that might broadly be labelled discourteous). A comparison group would receive no treatment, and the crash records of both groups would be monitored. Five years later, there would be enough data that the answer, one way or the other, would be known with confidence.

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