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Statens
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1971: 81

Justitie-
departementet

Den mänskliga faktorn i väg- trafiken

Trafiksymposium

DOSS

Betänkande avgivet av trafikmålskommittén
Stockholm 1971

Statens offentliga utredningar 1971

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Statens offentliga utredningar

1971:81

Justitiedepartementet

Den mänskliga faktorn i vägtrafiken

Trafiksymposium

Betänkande avgivet av trafikmålskommittén
Stockholm 1971

Contents

Till Herr Statsrådet och Chefen för Justitiedepartementet . . .	5
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The criminal on the road

Sociological and criminological factors in road traffic offences by <i>Terrence Willet</i>	7
Summary in Swedish	27
Criminological and psychological aspects of drunken drivers by <i>Wouter Buikhuisen</i>	29
Summary in Swedish	50
Opposition to the papers of Terence Willet and Wouter Buikhuisen by <i>Norman Bishop</i>	52
Opposition to the papers of Terence Willett and Wouter Buikhuisen by <i>Hans Klette</i>	53
Summary by <i>Gunnar Johansson</i> of the discussions regarding The traffic offender from a criminal-psychological and sociological aspect	58

Drives a man as he lives?

Connection between penal code crimes and traffic offences by <i>Ingmar Dureman, Tomas Berggren and Orvar Olsson</i> . . .	59
Summary in Swedish	70
Summary by <i>Gunnar Johansson</i> of the discussions regarding The connection between penal code crimes and traffic offences	72

Diagnostic measures

Diagnostic measures for driver selection by <i>B. M. Biehl</i> . . .	73
Summary in Swedish	81
Diagnostic difficulties in traffic safety by <i>J. O. Brown</i> . . .	83
Summary in Swedish	93
Summary by <i>Gunnar Johansson</i> of the discussions regarding Diagnostic measures	94

Therapeutic measures

Therapeutic measures and the traffic offender by <i>Anders Tallqvist</i>	95
Summary in Swedish	114
Some necessary requirements for driver selection and improvement by <i>Anders Englund</i>	115
Summary by <i>Terence Willett</i> of the discussion regarding Therapeutic measures	120

The law and the driver

Present traffic law problems concerning mainly the prevention of traffic offences by <i>Carl-Johan Cosmo</i>	123
Summary in Swedish	130
Insurance premiums and training of drivers by <i>Lennart Lindstrand</i>	131
Summary by <i>Terence Willett</i> of the discussion on the subject of The present traffic law problems concerning prevention of traffic offences	133

Background material

Some legal aspects as a background to the discussions by <i>Carl-Johan Cosmo</i>	135
Report on certain therapeutic measures used in the U.S.A. by <i>Anders Tallqvist</i>	141

Discussion

Den mänskliga faktorn i vägtrafiken. Diskussion vid Svenska Försäkringsbolags Riksförbunds årsmöte den 21 november 1969	161
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Participants

Participants at the symposium	193
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Till Herr Statsrådet och Chefen för Justitiedepartementet

Genom beslut den 23 mars 1961 bemyndigade Kungl. Maj:t chefen för justitiedepartementet att tillkalla högst fem sakkunniga med uppdrag att undersöka möjligheterna att förenkla handläggningen av trafiköverträdelser och därmed sammanhängande frågor.¹⁾

Med stöd av detta bemyndigande tillkallade Herr Statsrådet den 20 april 1961 följande sakkunniga att verkställa utredningen, nämligen dåvarande borgmästaren Yngve Kristensson, ordförande, advokaten Sten Agvald, numera avlidne häradshövdingen Nils G. Fröding, försäkringsdirektören Lennart Lindstrand samt numera avlidne överåklagaren Martin Lundqvist. Efter särskilt bemyndigande den 15 april 1966 tillkallade Herr Statsrådet den 24 maj 1966 ytterligare två sakkunniga, nämligen rättschefen Bertil Holmquist och numera polismästaren Kurt Lindroth. Vidare förordnades överåklagaren Berndt Erik Berndtsson, som den 29 november 1966 utsetts till expert, den 25 augusti 1967 till ledamot i kommittén.

Att som experter biträda utredningen förordnades den 20 april 1961 numera professorn juris doktorn Carl M. Elwing, den 11 september 1961 poliskommissarien Erik Settergren, den 5 november 1963 professorerna Gunnar Johansson och Knut Sveri, den 17 juni 1968 numera länsrådet Karl-Gustaf Hjelmqvist, den 17 oktober 1968 professorn Ingmar Dureman och den 7 februari 1969 länsassessorn Jan Berntsen.

Till sekreterare förordnades den 8 maj 1961 assessorn i Svea hovrätt Carl-Johan Cosmo och den 20 september 1968 assessorn i Göta hovrätt Stig Iversen.

De sakkunniga har antagit namnet trafikmålskommittén.

Kommittén har till Herr Statsrådet överlämnat dels den 14 maj 1963 ett delbetänkande, kallat Trafikmål (SOU 1963: 27)²⁾, dels den 7 december 1967 ett delbetänkande, kallat Förundersökning (SOU

1967:59 och dels den 25 maj 1968 ett delbetänkande, kallat Trafikmålsutredningar (SOU 1968:19).

Kommittén har med anledning av remisser från justitie-, civil- och kommunikationsdepartementen avgett ett flertal utlåtanden.

Kommittén får härmed överlämna ett fjärde delbetänkande. Detta betänkande innehåller främst redovisning av vissa av de sakkunnigutredningar som utförts för kommittén. Betänkandet är väsentligen tryckt på engelska.

Under utredningsarbetet har kommittén funnit det nödvändigt att söka klarlägga vetenskapens nuvarande ståndpunkt i olika för kommittén väsentliga frågor. Den internationella utvecklingen i trafikrättsliga frågor går för närvarande snabbt och det har bl.a. därför inte varit möjligt för kommittén att genom egna experter verkställa utredningar kring alla de frågor som är av betydelse. Därtill kommer att det inom trafikrätten med dess starka internationella anknytning ofta är så att framstående expertis finns att söka utomlands. Tack vare samverkan med Svenska Försäkringsbolags Riksförbund har det också visat sig möjligt för kommittén att lämna uppdrag åt olika europeiska forskare att utreda vissa för kommittén väsentliga frågeställningar. Svenska Försäkringsbolags Riksförbund har också genom att bekosta ett symposium, som anordnats i Stockholm under tiden 19—20 november 1969, gjort det möjligt för kommittén att få dessa utredningar belysta vid överläggningar med kommitténs egna experter.

Kommittén har ansett det lämpligt, att redan nu någon tid innan huvudbetänkandet är färdigställt, överlämna dessa utredningar. Utredningarna har offentliggjorts och diskuterats vid ett offentligt möte den 21 november 1969. Därtill kommer att kommittén tidigare följt den principen att publicera arbeten som inom ramen för kommitténs utredningsarbete ut-

förts av olika sakkunniga. Här kan erinras om arbetet Samhällsreaktioner vid trafikbrott, Wenner-Gren Center, 7, Nor-

stedts 1966, och Ungdomen i bilåldern, Statens trafiksäkerhetsråds rapport nr 153, 1969.

Stockholm den 14 oktober 1971

Yngve Kristensson

Sten Agvald Berndt E. Berndtsson

Kurt Lindroth Bertil Holmquist

Lennart Lindstrand

/Carl-Johan Cosmo

Stig Iversen

Sociological and criminological factors in road traffic offences

Terence Willett

Introduction

In this paper my aim will be to discuss the nature and the influence of the specifically societal factors on the phenomenon of road traffic offences, and by "societal factors". I mean those that are built into the social structure of societies and affect all who live in them to a considerable extent. Hence, I shall be concerned mainly with group phenomena, and only incidentally with those of an individual nature.

I shall begin by trying to place the driver and his vehicle in a social setting in which he, like everyone else, is expected to conform to expectations derived from the roles he plays and the status accorded to them; I shall then discuss the ways in which the social process has been affected by the motor vehicle and vice-versa. Finally, I shall make some observations on the operation of the penal system as it affects motoring offenders and offer some recommendations about its rationalisation.

Such an approach is still relatively unusual since it is only in the last decade or so that serious consideration has been given to the view that motoring offences (and major accidents also) might be attributable to something other than chance, individual idiosyncrasy, the construction of the highway, or the design of the vehicle. The human factor has been rather neglected, especially where it is compounded of group rather than individual factors. This neglect is understandable because those concerned with social control tend naturally to prefer dealing with factors that they can manipulate as, for example, highway construction, vehicle design and, of course, the law; these are definite matters, "things one can put one's finger on", but with humans there is no such firm ground and it is all too easy to become lost in vague speculation.

Vague speculation is a trap that I shall

try hard to avoid, but there is so little "hard" sociological data in this field that I must perforce base much of that I will be saying about wider societal influences on postulations that are not supported as yet by adequate substantive evidence. I realise that it is merely "soft" material, useful only in that it might stimulate some badly needed research; hence, it will be with some relief that I shall be able to turn at the end of this paper to the effects and effectiveness of sentencing upon which we have some recent research evidence.

Lack of hard data is one difficulty with which I am faced; another is the vast range of the behaviour under review. It is because of this that we find a universal tendency to treat motoring offences (and accidents also) as if they were homogeneous events though the only thing they have in common is that they involve motor vehicles and take place on the highway. There is a similar tendency to treat crime and delinquency as if they constitute homogeneous phenomena, though we know perfectly well that they comprise such a variety of activities as to make the terms meaningless in themselves.

One way of overcoming this difficulty is to try and distinguish between "serious" and "less serious" offences, an exercise that is appallingly arbitrary and fraught with subjective difficulties. Nevertheless, I have adopted it in my research work concerning motoring offences since it seemed that it would be credible as criminology only if it could be shown that these offences—or at least some of them—can be equated realistically with what most laymen mean by criminal behaviour, and I defined this as behaviour in which *two* of the following criteria could be present: deliberate intent, harm to persons or to property, and dishonesty. (Indeed this may be rather too strict a definition since any one of the elements might be considered enough for many people to use the term 'crime' for its consequences.) What I am suggesting is that most people

use these criteria to decide whether or not to take offence behaviour seriously, and in talking about serious and less serious offences I shall be doing as they do.

It is, however, one thing to speak of offences in this way and quite another to speak of the offenders, and the difficulty is especially great when considering motoring offenders since it is obvious that one who commits a series of less serious offences can be more pathological than another who commits a single serious offence. Classifying offenders or making a typology is of critical importance in penology and it is fraught with problems; hence, it is not surprising that criminologists and lawyers take the most direct and straight-forward line and use the offence as the main criterion and, to some extent also, the frequency or persistence of offence behaviour. But the credibility of this is severely reduced when we introduce the very difficult question of differential exposure to risk of temptation, provocation and detection; this is a matter of considerable importance in relation to motoring offences, and it depends inter alia on societal factors, e.g. age, sex, occupation, where and when most of one's driving is done, the extent to which the police enforce the law and—following from that—the prevailing social attitudes towards the offences. Let us now consider some of these societal factors: which, it is suggested, must be understood before an effective solution to the problem can be devised.

Social change and 'cultural lag'

One of the few sociological postulations that can claim the status of a scientific law is that of 'cultural lag' devised by the American sociologist, W. F. Ogburn (1946). By this he meant the tendency for societal factors of a cultural nature such as conventions, moral precepts, legal prescriptions to change much more slowly

than those of a technological and practical nature e.g., the physical environment, inventions, economic organisation and development. This concept is particularly relevant to the social changes in attitudes to drivers and motor vehicles, for as recently as thirty years ago in most countries other than the USA the ownership of a car and the skill of driving it were privileges reserved to a small, enthusiastic and relatively well-off section of the population. There were, of course, the professional drivers of buses and trucks, but for the most part those who owned and drove cars were seen as rather special people who were the objects of admiration, envy, irritation and amusement; indeed we might bracket them with those who flew the early aircraft, though undoubtedly the latter have always been regarded as a more esoteric species! So, until quite recently, the driver was looked upon as a daring adventurer by comparison with the pedestrian and those who moved at the speed of the horse and carriage; and it is interesting, incidentally, to reflect for a moment on the habit we have of relating the speed of thought and mind to the speed of movement in applying values to the adjectives 'quick' and 'slow'.

The effect of all this was to give the driver a special status as exemplified by the law relating to motoring and some of the ways in which it has been, and still is, enforced; moreover, this special status has been enhanced by the fact that both driver and vehicle are the focii of one of the most important industries of the developed world which has much to gain by emphasising it. Hence, the fight to obtain and keep a privileged status for the driver has been waged with great energy by both private and commercial pressure groups. (See Willett, 1964 ch. 3.)

Gradually, therefore, motoring has become a social institution in itself, using the term in its sociological sense according to McIver (1953) i.e., "established forms of procedure characteristic of group activity". And in this, as in other struc-

tured forms of human behaviour, status and respect are accorded to the possession of special skill, the possession of special and "different" equipment as, for example, powerful and distinctive vehicles, and the erst-while qualities of initiative and bravery in using these things.

That publics have long been conditioned to see motoring in this way is very evident from the media of advertising, literature and art, as well as from the development of motor sport which, because of its fusion of the more primitive components of maleness with technological sophistication has always appealed very strongly to men and in a rather different way to many women also. This all fits into the perennial tendency of societies to create heroic forms of behaviour, the traditions of which change very little; it is interesting that Robin Hood, the legendary English outlaw who defied the guards of the rich nobles to rob them and give their wealth to the poor, not only fought well but rode fast temperamental horses too; so did the equally legendary highway-man Dick Turpin, and the heroes of the western films. All of them were predecessors of the contemporary film and television heroes epitomised by James Bond with his very special Aston-Martin super-car. It is, perhaps, significant that the heroes of the past were not found riding hacks in the age of the horse and carriage any more often than they are now pictured as driving family cars in the age of the motor vehicle. Indeed, we even find the motor car becoming a hero in its own right; the symbolic appeal of the film "Chitty Chitty Bang-Bang" is an amusing illustration of this.

The status and role of the driver

It seems plausible that since the turn of the century opportunities have been increasingly limited for the majority of individuals to show initiative and daring by

exhibiting special skills, save in time of war; at other times these desires have had to be confined to fantasy. But with the recent increase in the availability of personal motor vehicles the opportunity has come to act out these fantasies as well as to find expression for the great social pressures—one might even call them compulsion—on males to prove their manhood. It seems that there is a desperate effort to keep the primitive character components or traits alive despite the evolution of social and technological conditions that make them less and less relevant; these efforts help to preserve the "subterranean values" in society to which I shall refer later. An interesting parallel can be drawn here with economic behaviour as cited by Whyte in his study "The Organisation Man" (1956); writing of American society he postulates that as the opportunities for opportunist, frontier-style free enterprise are becoming more and more restricted in a bureaucratically organised economic system, so there is more verbalisation of the old-style free enterprise values and more expression of them in symbolic forms e.g. in leisure, literature and drama. And, I would submit, he might usefully have added driving to these modes of sublimation. An example of this primitive behaviour is the competitive jockeying for position that is so evident in rush hour traffic in our cities; technological development has made this sort of thing unnecessary and pointless, yet people still risk their lives and one of their most valued possessions (their cars) to get through a bottleneck before the faceless and unknown individual who is alongside them in the traffic stream. Clearly habit systems and values have not kept up with the demands of a technological civilisation.

However, skill, bravery and initiative have for long been highly valued in human societies and especially as criteria of "masculinity"; they may be less relevant than they were, but they are still there at all levels. And here I would quote two

anecdotal examples from the interviews carried out in the course of my research into the characteristics of serious motoring offenders in an English police district in 1959 (Willet, 1964). One was with a young motor-cyclist convicted of dangerous driving who claimed that his girl friends were "the worst" in provoking him and his friends to drive faster and take more risks; in his view the girls admired the dare-devil, and in all he said one could sense the attraction of the power-speed-noise nexus that is highlighted in motor-cycling. Another was with a senior police officer with much experience as a motor-cycle traffic patrolman who said "when you criticise a man's driving you criticise his virility". And in considering this last quotation one is reminded of Talcott Parson's observation that in contemporary urban societies the active, daring, dominating and aggressive qualities are still associated with maleness and their opposites with femininity; hence his point that to be "bad" is to be a real man, but to be "good" is to be a cissy. (Parsons 1954)

Sex differences

A particular feature of typical conflict and offence provoking behaviour in traffic situations is what I shall call the dominance-submission situation exemplified by the irrational resistance to being overtaken—especially when the overtaker is a female. And it will be no surprise to point out that the great majority of the offences of dangerous driving in all my research studies have been derived from overtaking situations of a competitive nature. That among 285 offenders who committed this offence all were men is an instance of one of the most striking features of the motoring offence phenomena; that it is mainly a preserve of males. Indeed this is one of the many respects in which it is no different from the general phenomenon of crime and sociopathology.

One explanation for this—perhaps one could say as a sociologist that it is *the* explanation—is that this is just a manifestation in behavioural terms of the social conditioning of males and females in societies. Its reality can be assessed from the fact that for Britain alone in 1967 there were 15 men to every woman found guilty of a motoring offence although the proportion of men to women among licence holders is about six to one; for offences of all kinds the ratio was rather lower at about 11 to 1. A similar picture is reported from the USA where Coppin (1961) has shown that about 96 % of negligent drivers in California were males.

Unfortunately we have very little sociological or psychological evidence about women as drivers and even less about them as motoring offenders, perhaps for the simple reason demonstrated above that they are so seldom convicted. When they do come before the courts in Britain and the USA it would seem that they are generally older and of higher social status than their male counterparts. (Coppin 1965, Willet 1966), and that they are much less exposed to risk in that their annual mileages are lower. Indeed as with men we find that the offenders tend to drive more than women drivers in general (Coppin 1961) and that they are more often single or living separately from their spouses. As I have said, they are very rarely found among serious motoring offenders, but when they are I have discovered them to be predominantly among those convicted of failing to stop after an accident; in my study of nearly 700 serious motoring offenders in an English police district there were only 54 women over half of whom had committed this offence which seemed to be a manifestation of a tendency to panic on the one hand and anxiety about becoming involved in trouble on the other. There is also a tendency for drunken driving to be present among the few serious offenders but, perhaps significantly, one rarely finds them among those convicted of dangerous driving.

Though I am not concerned in this paper with the accident phenomenon except in so far as it affects offences, I would say in passing that much the same differential between men and women is found here also and this is reflected in the tendency in Britain and the USA for them to be regarded by insurers as better risks. But here again we have the difficult question of relative exposure to risk entering to upset our comparison, and indeed some recent work in the British Road Research Laboratory has suggested that the accident performance of women may be rather worse than that of men when exposure to risk is controlled. However, the gap is so wide in respect of offences that it is doubtful if even the differential exposure could explain it as against the more powerfully convincing inferences that can be made from offence behaviour and what we do know about sex differences in attitudes. As Miles and Terman (1937) and others since have shown, women tend to be more conforming to social norms, more strict about ethical matters, less inhibited about expressing anxiety and less inclined to take risks for the sake of doing so; and, most important, we find with M. Mead (1949) that females have less "need" than males to prove themselves by dominating people or situations. Hence, we find the image of the woman driver as being compounded of timidity as manifested by slow cautious driving, indecisiveness, lack of mechanical and technical competence, and lack of interest in vehicles save as "things to get about in" or in their usefulness as fashion accessories: True or not, that is how males seem to see women on the roads and it is interesting that all of the criteria cited are direct opposites of male motoring values, and when men display them they are usually the objects of irritated derision as "old women": and curiously enough they often are old.

Now another characteristic that is relevant to this discussion of sex differences is that of self-confidence since this is often considered to be a male trait, and

indeed it seems to be if it is true that men are especially "touchy" about criticism of their driving. In this connection it is interesting that in a comparison between 181 serious motoring offenders and 163 non-offending drivers yet unpublished I found that 39% of the former rated themselves as better than most other drivers as compared with 28% of the latter; and support for this comes from the Netherlands where Dr. Buikhuisen reported that a comparison between two groups of drivers, one with many accidents and the other with few or none, showed that the former were by far the more confident about their ability as drivers.

Perhaps as an ex-pilot of aircraft I might be allowed to digress here and comment on the strange difference between pilots and motorists in that the former are rarely heard to say that their flying ability is greater than that of other pilots and modesty or, indeed, humility is the convention. Perhaps pilots take flying much less for granted than drivers do their driving, yet the complexity of the driving problems in heavy traffic today makes such an attitude rather unrealistic. Maybe this is another instance of cultural lag.

Whether this high degree of confidence among offenders is justified is hard to say: on the basis of experience it may be, but on the evidence of their offending behaviour it is highly questionable and it is instructive that only one in five of a sample of dangerous drivers in one of my researches were prepared to accept any blame themselves for what they had done. Humility is clearly not characteristic of dangerous drivers.

Much of this is perforce speculation but one hard fact is not: the sheer size of the gap between male and female offence rates for motoring offences. Given this one must begin to think that there is a lot in Lady Wootton's aphorism that "if men behaved like women the courts would be idle and the prisons empty". (Wootton, 1959)

That such a transfer of roles is unlikely

in our time is rather obvious, but that it seems so bold to suggest it is interesting having regard to what has been said about cultural lag. For there is less and less reason nowadays for dichotomies in role behaviour especially where, as in driving private cars, physical strength is not required; in other words there is less and less reason now for driving to be "the man's job" though one has only to look at a stream of cars in which men and women are travelling together to see that it still is. And so long as men and women see it this way and continue to value the more primitive components of sex-role-differences, we can expect to find the differences in the rates of offences in which aggression, risktaking and speed are central. Perhaps the way out of the difficulty is to change the concept of virility to emphasise other qualities like self-control, discipline and skill, all of them prerequisites to "good" driving.

Further support for the view that much offence behaviour, whether motoring or non-motoring, is linked with the need to emphasise virility and sharpen sex differences is provided by the marked tendency for most offenders to be young males. And here I would suggest that the influence of the age factor is more to do with role playing than it is to do with maturation, though one cannot exclude the latter entirely.

Age

One of the first students of motoring offenders to suggest that they were forms of proving behaviour was Gibbens (1958) who considered that this was often demonstrated in interviews with offenders who took and drove away cars for joyrides. These people tended then, and still do tend to be mainly in their teens, but it is in the twenties that we find the average offender convicted of careless or dangerous driving whether in a car or on a motor-cycle. Indeed drivers and riders

in their teens and twenties have a bad image almost everywhere research into offences and accidents has been done. Their accident rates and offences rates are much higher than those in the thirties and older and, hereagain we find a similarity with criminal behaviour of all kinds, but especially that which is aggressive, in that offence rates decrease markedly with age. (Coppin 1965). It is curious that the young seem always to drive fast in much the same way as they always tend to run everywhere when they are younger, and Buikhuisen can report a study of his in which he found that of several hundred drivers timed in passing a busy Dutch cross-road the fastest drivers were the youngest. In my own studies I have found that serious offenders, with the exception of drunken drivers who are inclined to be older, are mostly under thirty. There was in my earlier study a tendency for the more serious dangerous drivers to be in their mid twenties and this was found also in the more recent study. Interviews suggested that these were men at stages in their lives at which societal pressure was great: they were not yet secure in their jobs or in marriage and still had to prove themselves in competition for status. In most societies also these young men are interstitial between the permissively favoured young and the tolerated old: they are on their own. Moreover, the legitimate outlets for their physical strength and aggression are likely to be progressively limited by comparison with earlier youth and they no longer take part in the "rougher" kinds of game. Also those forms of leisure in which drinking is usual are often more favoured. Finally, they tend to be at the most mobile periods of their lives, often living and working away from home and prepared to travel long distances in contrast to the more "settled" older individual. Information from research interviews suggests also that to this age group a car is a particularly important status symbol epitomising independence and the break with youth; hence a man will go to great

lengths to run his vehicle even though he cannot afford to licence and maintain it properly—hence their prominence among insurance offenders and those prosecuted for driving vehicles without licences and in an unsafe condition.

It would, however, be a mistake to concentrate too much on the younger age groups and so overlook the contribution of the middle-aged and those even older. Studies by Van Ooijen in the Netherlands and my own work in Britain show that the middle-aged driver is apt to be found among drunken and dangerous driving groups in substantial proportions and that these are an especially intractable problem in that they are inclined to be a "law unto themselves" and be even more resentful than the young of police and court efforts to control their behaviour. Among these are often the very experienced drivers who think that they know best how fast one should drive and deeply resent penalties and the criticism that is implicit in them; in our recent research on the effects of sentencing on 181 serious motoring offenders we found this age group to include some of the most hostile and most resistant offenders. Typically the serious offender in this age group is a heavy drinker with a mass of marital and business worries who needs help but is too conscious of his status as a man of the world to ask for it or to accept it if it is offered; perhaps that is why so few are put on the probation that they, more than most others, really need.

About the drivers who are past middle age we have very little research information since they, like females rarely offend. But perhaps it is more rational to apply to them the argument that is levelled so often against females: that it is not the offences that they commit that are important so much as those they provoke, albeit unwittingly. If this is the case, we are faced with a fast-increasing problem since it can be excepted that old people will want to hold on to their driving privileges as long as they can, especially when growing isolation from their kins-

folk will make them as dependent on transport as anyone else and they, like most others, will prefer that it should be their own personal vehicle. Given their potential as highway hazards, unwitting instigators of offences by others, as well as offenders themselves they constitute a formidable problem in social control. Yet in Britain and most other countries this control is avoided by both licencing authorities and by medical practitioners who leave it to the insurers to do the job by, for example, requiring a medical examination before renewing the insurance policy. Perhaps it is fair to say that the problem of the very old is more within the psycho-biological field than that of sociology and that it is rather irrelevant to a discussion of societal factors; but, on the other hand, one must point to the nature of the change in the pressures operating on the older age groups to resist ageing and hold on to the attributes of relative youth. So we might find the laws of regression working to make the elderly driver try like the teenager to drive beyond his capabilities and prove that he is as virile and active as anyone else.

There is then a marked difference between the offence behaviour of the age groups in motoring crime which reflects the societal roles that tend to typify each of them. Among the teenage and "breaking twenty" groups are found—in the serious category—offences to which Albert Cohen's (1955) classical criteria of gang delinquency might be applied, i.e. "malicious, negativistic, non-utilitarian, short-term hedonism" as is found in the growing incidence of "borrowing" or stealing vehicles and leaving them in a stripped or damaged condition, and in the strange and worrying growth of "car vandalism" in which new vehicles are deliberately scratched and sprayed with acid in the streets. As the role (and the status) changes so we get more deliberate, aggressive offence behaviour together with that of a more "situational" kind in which—as in many cases of drunken driving

—an individual gets “involved” through a complex set of circumstantial pressures in his daily life.

Social class

Another concomitant of cultural lag is a failure to see the importance of changes in the distribution of vehicles among different occupational or class strata as an influence on offence (and accident) phenomena.

As I said earlier, a characteristic of the early motorists was their wealth and privileged status as rather special people, and it seems that this image of them persists. Evidence of this is the reaction among police officers and lawyers to my initial proposal to do a criminological study of serious motoring offenders; I was told that it was waste of time as these people were as “different from the criminal classes as chalk is from cheese”. Further evidence is in the nature of the penalties imposed on motor offenders which include the almost unique sanction of disqualification from driving and this presupposes that an unsupervised offender has the strength or will to refrain from driving for a long period: a response that one might expect from the upright respectable middle-class citizen that the motoring offender was supposed by our British legislators to be.

It seems, however, that this stereotype is now very much out of date; it has been so in the USA since the 1930's, in Britain since the 1950's and it is probably becoming so rather less quickly in most other countries in which motoring is within the reach of more than the elite minority of the population. Contrary to expectations induced by cultural lag, research has shown that serious motoring offenders come mainly from the manual working occupational groups. And so far as Britain is concerned, the proportions are increasing; in my first study of some 700 offenders convicted between 1957 and

1959 I found that 62 % were manual workers, and in the second of 181 convicted in 1965 I found that the proportion had increased to 73 %. And these are significant proportions when contrasted with the percentage of manual workers in the driving population of England in 1967 i.e. 54 %. Moreover, it is interesting that in the latter study manual workers were in the majority in all classes of offence whether it was a “driving” offence (involving the handling of the vehicle) or a “dishonest” offence (involving driving while uninsured or while disqualified). Even the drunken drivers were mainly from the manual working occupations, a finding that is in conflict with most studies in European countries though it is supported by the large scale work in the USA by e.g. Borkenstein (1964). In the US this is not very significant as the class distribution of licence holders is much the same as that for the population in general; but for Britain the picture is very different since, as we have seen, manual workers are very much under-represented still in the driving population.

It is, however, one thing to say that a phenomenon exists and quite another to explain it, and where the class factor is concerned explanation is especially difficult.

One postulation is that individuals in the lower social strata, and especially the young men, are “picked on” by the police who are particularly aggressive towards them. Whether there are good reasons for this or not, my own research work in Britain, that of Buikhuisen in Holland and much American work (e.g. Piliavin and Brian, 1964) shows that there is a substantive evidence that some bias exists and it is reflected especially in the relatively high proportions of young manual workers among those prosecuted for licensing and insurance offences as well as for driving while disqualified. These are the people who the police often stop on suspicion whereas they let the more obviously middle-class driver or rider drive on; the latter is only detected for such offen-

ces if he is involved in a collision or some other incident. It is also true that the police are much harder on individuals they know to have criminal records and often pick them up for this particular kind of motoring offence as the frequency of them among the long list of offences in the records of some of my offenders shows very clearly. Moreover, lower-class offenders draw the attention of the police by driving old, dilapidated and often manifestly unsafe vehicles which they cannot afford to tax and insure. And it must be pointed out that my recent study of the operation of the court processes in serious motoring cases shows that their conviction rates may be affected by their readiness to plead guilty to the charges alleged and reluctant to either seek legal assistance or defend themselves in court.

Even so, the fact remains that when the police look for them the offences are there, and it seems obvious that many of them are more an artifact of lower class ways of life than of police prejudice. This can be seen in relation to the licencing and insurance offences to which I have already referred and which, with driving while disqualified, have been called the "dishonest" motoring offences, in contrast to "driving" offences (Steer & Carr-Hill, 1967). Interviews in my own research show that manual workers often do not understand the complexities of insurance and do not take it very seriously; it is not something that they are prepared to spend money on unless they have to; and as premium rates increase the temptation to drive without insurance is increased also. The same is true of driving and vehicles licences. As regards driving while disqualified the manual worker is in a rather exposed position as he often depends more on personal transport for work than is often supposed. Many of these people work on night shifts when public transport is not running and they often join syndicates with other workers who pay them to drive them to work; hence the disaster to a number of people when the driver

is disqualified and the pressure on him to continue driving. And it should be remembered that, in contrast to the middle-class offender, the manual worker's wife usually cannot drive and he can rarely afford to pay anyone else to do it for him.

Much of this is self-evident, but what is often more challengeable is the possibility that manual workers commit more "driving" offences than those higher in the occupational strata (Steer & Carr-Hill, 1967). My own work in England has shown this to be the case, especially the recent study of 181 serious offenders which found them in the majority among those convicted of causing death by dangerous driving, drunken driving and the relatively minor offence of driving without due care and attention—as well as the "dishonest" offences. However, I understand this is not quite so true of continental countries, perhaps because the ownership of motor vehicles is not yet so widespread throughout the social classes; it is true, however, of the USA as Coppin and others have shown.

Here again I would submit that the most convincing explanation for class differences lies in the respective ways of life and social conditioning, and in this respect motoring offences are no different from the majority of non-motoring ones. Our interviews with offenders and control groups of non-offenders in England showed marked differences in ways of life; the offenders tending to live with large families in poorly kept houses and caravans in contrast to the relatively well kept and furnished houses of the controls, and this applied where both were "working class". The differences in attitudes to life were also evident in the tendency for most offenders to have the minimum education and the lowest level jobs which they changed at will in contrast to the controls who, although they had much the same formal education, had made more efforts to supplement this since leaving school by night classes and apprenticeships, and their work records were

much more stable. Indeed this criterion of job stability, that has been found to be so relevant in comparisons between offenders and non-offenders in Europe and the USA is of special interest where motoring offenders are concerned.

Rather more speculative are some differences in the social psychology of the lower and middle strata as postulated by, for example, Spinley (1953) who stresses the inability of the former to postpone gratification from their earliest years and their consequent tendency to act on impulse to satisfy their needs. This is quite a plausible explanation of the already stressed offences involving running vehicles before they can be afforded; it is also relevant to dangerous driving. And it is relevant to a wide area of social discipline which Spinley shows to be much more a characteristic of middle class than lower class upbringing.

It must, however, be stressed that Spinley was writing of the most deprived sections of the lower strata, and as we have seen from our control groups there is a substantial body of manual workers which is under-represented among offenders; these are the skilled manual group and this includes professional drivers of public service vehicles and long distance trucks. And though these groups do undoubtedly have their "tearaways" (see Holliwell, 1968) they are very much a minority and it would seem that there is much to be said for the professional, disciplined approach to driving as an antidote to the propensity to offend.

But if impressions of driving behaviour are our yardstick, the picture presented by the class distribution of convicted offenders is not convincing. If it were, we would have a sharp contrast between irresponsible and disorderly lower class drivers and relatively law-abiding and steadily competent middle classes. (Of the upper class we know little, perhaps their numbers are so small, and on the road they are often indistinguishable from the middle class, save in the cases of a few owners of Rolls-Royces.) But there is not

this difference; indeed there seems to be a massive disobedience of the traffic laws on many roads in Britain, Western Europe and the USA unless there are police actually present. Moreover, we have found some evidence of the attitude among middle-class dangerous drivers that the law is absurd and the police should have better things to do than to enforce it against them; "why don't they do what they are paid for ... catch criminals?" they ask. These people, in common with most others, reflect the view that there is an essential distinction between motoring offences and "criminal" offences: one that holds good between motoring and non-motoring offenders as well.

Attitudes towards motoring offences

This distinction between motoring offences and non-motoring offences, or "crimes" is widespread in Britain and it seems to be also in most places where research on motoring offence behaviour has been done. It is even so in those countries in which an effort is made not to discriminate between motoring offenders and "criminals" by sending the former to prison when convicted of, say, drunken driving. But in Sweden and Holland where this is done there is no question that the distinction remains and this is exemplified by the practice of reserving particular prisons mainly for traffic offenders who go for very short periods, sometimes at their own convenience. Also there seems to be less stigma applied to conviction for a motoring offence and I found in my research interviews that the social repercussions were negligible. I gather from Dr. Buikhuisen that this is general in Europe also though not for drunken drivers who find that employers—especially prospective ones—discriminate against them.

There are, however, some differences as between age groups and occupational

groups in their attitudes to these offences according to some questions put to offenders and non-offenders in Britain during our researches. There was a tendency for the lower manual workers and the young to regard some serious motoring offences like causing death by dangerous driving, and drunken driving as more serious than such non-motoring offences as stealing from one's employer or breaking into property, whereas the older and higher occupational groups always rated non-motoring offences as more serious than motoring offences. But one interesting feature of this exercise was the unanimity of all the respondents in rating driving while disqualified and driving without insurance in that these offences secured very few ratings of "criminal" or "serious" from any of the respondents. It is, therefore, not surprising that both these practices are so common.

It is in these attitudes towards the criminality of motoring offences that we can again see the operation of cultural lag; these are still the tolerated misdemeanours of a rather special kind that occur in unique sociotechnical circumstances that have no parallel in other areas of social behaviour. From this viewpoint the usual criminal criteria of intent and dishonesty are rejected as irrelevant and there is strong resistance to treating offenders as "criminals". It is this attitude that has done much to maintain the staunch resistance of legal authorities—influenced powerfully by the motoring interests—to imposing controls on drivers and restricting their rights; in Britain among the easiest licences to get and to hold is one to get married, and the next easiest is one to drive a motor vehicle though, it must be conceded, it is necessary to pass a rudimentary test to get a driving licence. Perhaps, where Britain is concerned, the best example of this reluctant control is in the long drawn out argument about imposing an objectively based law proscribing driving with 8 % or more of alcohol in the blood and the imposition of roadside testing at rand-

om; although the former is now in existence, albeit contentiously, the latter has been opposed vigorously and with success on the grounds that it is an invasion of a citizen's rights.

The same attitude has caused resistance to citing the non-motoring convictions of offenders convicted of motoring offences prior to sentence since it is thought that the two classes of offence are mutually exclusive and have no relevance to each other. Moreover investigations of offenders' social background are said to be invasions of privacy unjustifiable in these cases. Yet we have found in research that it is not unusual for serious motoring offenders to have criminal histories: in my 1964 study 23 % of the 700 subjects were found to have them and in my recent study of 181 serious offenders the proportion was 40 %; this is striking when compared with a sample of 800 English drivers taken in 1967 which produced only 8 % with such records.

One explanation for this attitude is that the serious motoring offences have become confused with and obscured by the overwhelmingly large number of regulatory offences which are "absolute prohibitions" in that the police and the court are not concerned with why or how the act was done: that it was done at all is enough. There is no interest whatsoever in intent or fault. And the growth of the so-called traffic court has helped this tendency to treat motoring offences and offenders as different from crime and criminals and to rule out sociopathology.

Another highly speculative and somewhat involved explanation is suggested by Matza's postulation (1964) that there is a "subterranean" set of values running through all social classes, indeed characterising an entire society, that is recognised and accepted, but never overtly; indeed it is often overtly proscribed and "theoretically" eschewed. An example is the ambivalence towards anti-social behaviour that manifests the male values of skill, initiative and bravery that is shown at one extreme by women who tend to

prefer the man who is "a bit of a devil" to the impeccably behaved "old woman" (as they so contemptuously call him) and at the other by the open admiration given to the man who perpetrated the admittedly brilliant Great Train Robbery in England recently. The growing child must recognise the existence of these values which seem to conflict with those to which lip-service is paid, and he must satisfy them if he is to acquire status and affection; and here we have a class difference since it must be more difficult for the middle-class child to meet these expectations and discern their subtlety than it is for the child in the lower strata in which social controls are neither so evident nor so consistently imposed; so he does not find the same discrepancy between the subterranean values and those which are overt. For the middle-class youngster and for that matter, the adult also the motoring situation is an almost perfect one in which to express these subterranean values. It is one in which anonymity is relatively great, and it is one in which there is a feeling of universality in that "everyone does it"; it is, in other words, an almost perfect crowd situation in which perverseness can be acted out with a minimum of risk. And, even better, the behaviour can be rationalised in a manner that is reminiscent of Sykes and Matza's techniques of neutralisation which, they suggest, are used by young delinquents when taken to task for their misbehaviour (1957). These are five in number, i.e. The Denial of Responsibility in always blaming another or the circumstances in which the offender happened to be; the Denial of Injury in that no real harm was done and it was scarcely a crime or antisocial action: in any case the victim's insurance would pay and he wouldn't suffer or, even if he did, he is well-off and can afford it; The Denial of the Victim who is seen as "having had it coming to him" or "having asked for it by the way he was driving"; The Condemnation of the Condemners in that the other drivers, the police and the magi-

strates are hypocrites, deviants in disguise and in no position to criticise the offender (at interviews with drunken drivers one so often hears this kind of statement); and The Appeal to Higher Loyalties instanced by the allegation that he (the offender) will fight for his rights against the police who are always out to get the motorist, and the injured dignity implicit in the often heard statement that "they (the magistrates) don't understand a driver's problems; if they were drivers themselves they would have handled matters differently and dismissed the case". Perhaps the last of the "techniques" is the least applicable, but it seems to me that the other four fit the situation very neatly . . . particularly with regard to the tendency to blame anyone but oneself that is so characteristic of many motoring offenders.

These "techniques" were derived from studies of delinquents in an urban setting, boys who know that it is wrong to do as they do and are not, as some theorists have suggested totally alienated from the norms of the wider society. But they are seen as victims of urban deprivation, of the impersonalness and laissez faire of city life; and in this also they have something in common with the driver who spends much of his time in heavy traffic in the urban environment. Like the young delinquent who is caught in the conflict between the demands society is making on him and the inadequate equipment he has to meet them, the driver is caught in the conflict between the demands of a daily schedule increasingly packed with appointments apparently made feasible by mechanical transport, and those of the environmental and legal restraints which frustrate his movement through the crowded streets. It is increasingly difficult for either to "succeed" or "survive" without breaking the law, especially when "everyone's doing it". And lest it be thought that this is peculiar to the middle-class driver, let me mention also the well-known tendency of employers to raise daily mileage expectations for goods drivers to points that compel them to

break speed limitations where, as in Britain, the law specifies the maximum number of hours a driver may drive in any day; there is also the tendency for the labourer owner-driver to take on more and more spare time jobs to earn extra money to run his car, so he too is always in a hurry.

That the motor vehicle has greatly altered social life by drastically telescoping time and space is all too plain, but it is not often realised that this is as true of leisure time as it is of that in which we work; a fact that is evident from the tendency found in my own recent researches for more serious motoring offences to be committed while driving "for pleasure" than when driving during work or to and from it.

It is a commonplace to say that the motor vehicle has become an almost essential adjunct to the use of leisure in most of the free developed societies; and, as in the work situation, it has made it possible to pack into a given time more and more; at least in theory. I say "in theory" because the increasing congestion on the roads at week-ends and at holiday times places an unexpected impediment in the way of carefully planned and eagerly anticipated leisure activities, thus adding frustration to the hazards that already exist in plenty at these times. The rush to "get places quickly" is therefore as great as during the working week, and often the places concerned are focal holiday centres which attract young exhibitionist drivers in large numbers. The recent invasions of British seaside resorts, popular with the lower strata, by large numbers of young riders of motor-scooters and motor cycles have caused much concern to the local authorities and the police and have given rise to alarmist reports in the press of a new form of "gang delinquency", a term that seems hardly justified by the realities, worrying though they are. It is tempting to analyse this phenomenon in sophisticated sociological terms to do with, say, class or inter-generational conflict, but the fact seems to be that it

is no more than the perennial youthful search for excitement and a proving ground for one's fitness to be treated as "attractive" by the other sex. aggressive and vandalistic behaviour of these youngsters also might imply a desire to intimidate and dominate others: perhaps the only way in which most of them could or will ever do so. More thorough sociological or sociopathological analysis is needed of this kind of thing, but the work of S. Cohen is of interest to serious students of it, as is the literature on the "hells angel" groups in the USA for those who like something more sensational.

Discussion of the relationship between driving and leisure must include the influence of drink and drugs, but since this is dealt with at length by Dr. Buikhuisen I will merely touch upon some of its less sociopathic aspects. So far as Britain is concerned there is no doubt that the consumption of alcoholic drink by drivers increases considerably during leisure and holiday periods; it was initially influenced by the Road Traffic Act, 1967, introducing the 0.8% level of alcohol in the blood and the objective tests, but enquiries suggest that consumption levels are gradually returning to what they were before the Act. It would seem that some of the strong culturally-included habits, for example, the linking of drinking with a "good time" are as firmly entrenched as ever. And, where young males are concerned, one might add yet another criterion of maleness to those mentioned above by referring to the status accorded to one who can "drink with anyone who comes and still stay reasonably sober"; indeed the ability to drink quite heavily and carry it with dignity has long been a measure of the extent to which the youth has ceased to be a boy and become adult, hence the tendency to use drinking as an initiation rite by men. The contrast here between males and females is interesting since most cultures proscribe such behaviour for the latter, so we can see this as another segment of the virility syndrome that can be pieced together to

explain the very marked differences between male and female drivers which seem to be most evident in the younger age groups. It is interesting also that drinking usually precedes carrying out feats of daring, almost as a ritual through which the young man is expected (according to the subterranean value-system) to pass.

Of drugs we can say little, since nearly all that has been written concerns their sociopathic use; an exception is the work of Howard Becker (1963) and his school of interactionist sociologists to whom I will be referring again below. Becker showed clearly that the use of drugs, especially those of the so-called "soft" variety, is often made to secure status in an admired group: e.g. those involved in pop or jazz music professionally. But, so far as is known, drugs do not seem to have become associated with "driving for kicks" in the same way as alcohol, though this may happen and lead to acute difficulties since the presence of drugs is so hard to detect save in extreme forms: a fact that must be well-known to users and potential users. That the threat of this is a real one must follow from realisation that pleasure motoring is for many, like drink and drugs, an escape from the pressures and boredom of everyday routine. In an interesting but very subjective analysis of 26 subjects under hypnosis, Black (1966) showed that most of them saw cars as means of escape, usually to the places in which they had enjoyed holidays. And they saw the ideal car to go in as a powerful, sleek and fast creation with themselves as objects of admiration by the other sex; hence we may have one reason why so many manufacturers of sports cars advertise them containing beautiful girls in such highly improbable places as the sandy seashore!

Perhaps we have seen enough so far to realise that the motoring scene is really no more than a microcosm of the society in which it is nowadays an essential part. Hence we find ample impressionistic evidence—it can hardly be other—of

contrasts between the driving behaviour of different nations; driving in Paris is said with good reason to be different to driving in London, New York, Cairo or Rome, and it would be difficult to convince those who experienced it that this was just an artifact of the physical environment. The explanation is fairly straightforward in that people can logically be expected to drive—as they do other things—according to their social conditioning since their earliest years. There may indeed be a symbiotic relationship between man, car and highways but it seems beyond dispute that the free and adaptive element is the man—the driver himself—who is essentially a creature of the culture in which he is reared.

So far we have properly been concerned with societal or group factors in the offence phenomenon, but before discussing the processing of offenders through the legal system it might be useful to consider some sociological points concerning the formation of their attitudes; how they become motoring deviants, in other words.

The motoring offender as a deviant

S. M. Lemert (1951) has described two stages in the process of becoming a deviant; the primary stage in which the individual is labelled tentatively as, say, an offender and treated as such though he still identifies with law-abiding conventional people. The secondary stage is a good deal further along the road towards fully developed deviation, and it occurs when the label begins to "stick" and the individual begins to believe that it does in fact describe him; then he starts to see himself as one of the deviant group and ceases to identify with the conventional others: he becomes in his own eyes what Becker has so aptly called an "outsider".

In crime and delinquency, and in many other kinds of deviance such as neurotic sex aberration, the drift from primary to

secondary status is often gradual, chance influenced and almost imperceptible. Can we say this of motoring offenders? It would seem that we can, where the motoring offences are one aspect of a way of life that is deviant from the standards of reasonable conformity, as is often found among drunken drivers whose marriages and jobs have collapsed, or among individuals who are scraping a precarious living by buying and selling old cars which they often drive without tax, insurance, or driving licence. Also the drift from primary to secondary deviation is often evident from the case histories of young offenders who begin by driving without insurance once, twice and thrice, they are eventually disqualified for several years and find it intolerable; they then drive while disqualified and are further disqualified which again becomes intolerable, and so they go on until they are put in custody and may begin to identify with and mix with more sophisticated offenders who show them how easily cars can be stolen and disposed of. Indeed contact with the used car trade often brings one to the borderland of the criminal culture which is deeply involved in it; stolen cars are not only a lucrative criminal investment but they are essential nowadays for most criminal operations. As Black has shown, it is not unjust or inapposite to call the modern used car dealer the true successor of the horse trader of the past.

Another power influence in the process of becoming a deviant or problem driver is constant interaction with other offenders from whom the techniques are learned. In a recent study of attitudes to disqualification among young men in an English Borstal I was surprised at the number who had learned all they knew about driving and running vehicles from their "mates". They moved in a strange social setting in which it was quite usual to drive on a forged driving licence and insurance certificate (the former can be bought readily in England for £5); vehicles were usually "borrowed" or actu-

ally stolen and used primarily for pleasure jaunts, though sometimes for criminal expeditions. What sort of drivers they were it is hard to tell; indeed it has been suggested by Gibbens in his study of car thieves that they drive with careful regard to the law so as not to attract attention, and indeed it is true that offences involving the manner of driving were not usual, though drink seemed to have played a substantial part in the events antecedent to their offences. Indeed interviews with offenders show that alcohol is a very real influence in many offences in which the police and the court do not mention it; in my recent study of 181 serious motoring offenders in England there was evidence of heavy drinking before the offence in 63 cases though drunken driving was charged in only 46 of them. A typical example is that of a 17 year old unskilled who took and drove away a bus after drinking heavily; his friends got him to drive it to a shopping area where they broke into several shops while he remained driving the bus round the block. He was stopped by police who know him to be a disqualified driver; he was charged with driving while disqualified and sent to detention with a further order of disqualification. To one "obsessed by driving and cars" (as his probation report said) this was a penalty that soon provoked further offences which, in his case, led in natural progression from those of a purely motoring nature to theft and breaking into property.

However, it should be noted that serious motoring offenders can be made such by being the victims of others. Indeed it is one of the almost unique features of serious motoring offenders that they have an acceleratory effect on the incidents of offences by provoking their victims to retaliate against their aggressive driving and so commit offences themselves. When the victim is punished and the provocateur goes free it is not surprising that the former should be turned against the law to which he looked for protection.

Effects of the legal system

This brings us to the effects of the crimino-legal structure—the police, the courts and the penal system on motoring offenders—a topic with which my recent research into the effects of sentencing in serious motoring cases has been concerned.

It should, one would think, be the purpose of systems of social control to prevent and reduce offences. Yet it seems that, in relation to motoring, the opposite is done in that offences are almost encouraged, and here I should stress that I am speaking primarily of Britain. An example of what I mean is the whole organisation of licencing and insurance which is unnecessarily complicated and protracted; it is often beyond the understanding or the patience of the minimally educated, especially the young. Young drivers in my research often forgot to renew their insurance policies or failed to understand that they could not drive away a newly purchased vehicle under the cover of its previous owner's policy (they were frequently told by dishonest or unbusinesslike vendors that they could, but this is no defence in law). And to many other insurance premium rates seemed so expensive, especially after a conviction, that they "took a chance". Insurance is but one of the items of paper work that must be undertaken by people who are ill at ease with forms of any sort and quite uneducated in dealing with them; the car must be taxed, often a fitness test and certificate must be obtained for the vehicle, hire-purchase formalities must be gone through (usually well above the understanding of the hirer who often happily sells the vehicle before the hire-purchase contract is paid up and so commits another offence), and finally a driving licence must be obtained ... all several days work and waiting, intolerable to the young man whose characteristic is "immediate gratification".

The same ignorance and irresponsibility militate against the lower-class offender when he is taken to court for a serious motoring offence. As my research showed, he rarely takes legal advice before the trial or seeks to be represented in court by a lawyer; it is incredibly common for these people to defend themselves, often with pathetic results. Most plead guilty "to get it over and keep the cost down" without realising that they are laying themselves open to substantial fines with long periods of disqualification. And so cursory and minimal are the enquiries before sentence that mitigation depends almost entirely on what they say for themselves. It is not surprising that we found so much hostility to the courts and so strong a sense of injustice. Though sentences were generally quite lenient (average fine £25 (mode), and average period of disqualification one year (mode)) most of the subjects thought them to be unjust. Even so, only four of the 181 offenders bothered to appeal against conviction or sentence, and the reported effects on social or financial hardship were minimal. Only 34 of the 181 lost their jobs because of the case, and in every instance this was due to losing the driving licence they needed for their work. It was indeed disqualification that was said to have "hurt" more than any other thing that was done to the offender; but, though it was the most "painful" of the penalties, the reconviction rate of those who experienced it was higher than for those who had not (perhaps with justification, we can say that the disqualified were the worst risks in the first place, but that does not discount the ineffectiveness of the penalty in their cases). Also 35% of those who were disqualified drove while the order was in force, and most did so within a few weeks of being before the court.

The virtually negative effects of the offence and court experience are demonstrated by the fact that two thirds of the offenders showed that their attitudes to the law and to driving were not changed

in any way from what they had been before. They said that the influence of the sentence was either "none at all" or really negative in that it made them antagonistic to the law, the police and the courts. That this depressing effect is supported by the factual outcome is shown by the reconviction rate, since nearly 40% of the subjects had been reconvicted within four years of the research offence, mainly for motoring offences of which a high proportion were similar to the ones for which they had been interviewed.

Hence we find, in respect of motoring offenders, that the manner in which they are treated in the penal system seems to achieve nothing very useful and does not seem to be a very profitable return for the time, money and energy spent in dealing with them. And the same is true for offenders of other kinds also, as Hood has shown. (1967)

The reasons are many, but a few are salient and easy to isolate.

One is derived from the failure of the system to discriminate efficiently between offences and offenders in terms of administrative criteria on the one hand, and sociopathic criteria on the other. In England and many other countries a vast number of offenders are processed through the courts under criminal and quasi-criminal procedure, most of them have committed no more than an administrative mistake made through ignorance or carelessness. Serious and trivial are treated much alike, one after the other in the same courts by justices whose information is gravely limited and whose freedom of action is increasingly restricted by the insistence of the motoring public and their pressure groups that the "punishment should fit the crime" rather than the offender. Treatments tend to be ritualistic and over-dependent on the belief in deterrence for its own sake; hence the use of heavy fines, long disqualification and, in some countries, imprisonment. But if one probes beneath these penalties and enquires just what is done in the course of them to change the offender's

attitudes to his behaviour, the answer is usually "very little". Incarceration, "hitting the pocket", hard labour and deprivation from driving are thought to be enough to "teach them a lesson". Yet the paradox is that these treatments are not really severe enough to deter other than the trivial offenders; for the others they are irritants, mainly because they are designed to make life more difficult for an often already inadequate individual. They teach him nothing save how to lay bricks or to do a bit of carpentry; they quite ignore the one thing about which the offender is able to be enthusiastic... motor vehicles and the art and thrill of driving them. Perhaps the best example of this paradoxical attitude towards treatment of motoring offenders is the strong opposition of magistrates to a proposal by the staff of an English borstal institution to run classes in vehicle maintenance and driving for inmates, most of whom were inside for motoring offences; the belief was that the training would merely make them better equipped to steal or take away cars!

It seems to me that we must try first to simplify and streamline the procedures for licensing and insuring vehicles and drivers, so encouraging people to do things properly. Moreover, these elementary requirements of adult citizenship should be taught to people in school and the reasons for them explained. We should then put the administration and control of driving in specialist hands: the licensing authorities are the obvious choice, and here one has in mind the excellent systems operating in West Germany and in parts of the USA, e.g. California. Routine failures to refer to administrative requirement could be dealt with by these authorities without recourse to the criminal courts save where appeals are made against injustice, this would leave the latter to deal with the serious offenders. But this proposition makes it necessary to have a typological scheme to discriminate between the serious and less serious, or between those whose cases are appro-

pritate to the criminal courts and the remainder who are best dealt with elsewhere.

Typologies are notoriously controversial, especially with regard to the question as to whether they should be based on offences or on individual traits and I realise that the one I am offering has many shortcomings, but it will provide a basis for our discussions. It comprises three categories based on the concept of a serious offence as defined in the first section of this paper, and on the importance of frequency in committing offences of any sort, but particularly on the relationship between motoring and non-motoring offences as manifestations of the same anti-social traits.

1. Those who commit minor regulatory offences occasionally, and/or more serious offences in which chance or inadvertence are the obvious causal elements *and* who have no previous history of offences save for those of a minor and regulatory nature or in the distant past. These are the trivia.

2. Those who commit, apparently for the first time, serious offences in which there is advertence but where the offender has no record of previous offences save those of a trivial nature.

3. Those who commit motoring offences of any kind persistently (say, three or four times a year over a period), and those who commit serious offences *and* who have a history including criminal non-motoring offences.

Also extremely important is the need for greatly improved information about deviant drivers: those in the second and third categories of my typology *and* those who are frequently involved in accidents. An efficient diagnostic service is needed for the licencing authorities and for the courts, and also for insurance companies and those who employ large numbers of drivers with responsibility for carrying passengers. I have in mind here the traffic clinics which operate in West Germany, Austria and in the USA, e.g. in Detroit and Chicago. I have described

these in detail in my book 'Criminal on the Road'.

Finally there is the obvious and almost unnecessary observation that if deterrence is important in dealing with motoring offenders—and I think it is, though I do not think it is predominant over other means—it is most effective when it increases the risks of detection and this is a direct function of the visibility and efficiency of the police. So here again we find ourselves discussing the problem in terms no different to those in which we discuss crime in general. But once we leave this area of general deterrence through risks of detection and we reach the difficult issues of treatment it seems wisest to eschew such blanket concepts as crime and delinquency . . . and motoring offences, and make the effort to break down into categories the phenomena with which we are concerned. For, to make a realistic analogy, no doctor would succeed in restoring his patient to health without first making a diagnosis and relating his treatment to it.

Let me now summarise what I have said by putting forward six points as a basis for discussion.

1. It is important to realise the effects of cultural lag and to counter it with education about the real nature of the motoring situation and its essentially social context. We must convince drivers that they do drive as the sort of people they are conditioned by their society to be.

2. We must try to distinguish those areas of social control affecting driving that are essentially administrative from those that are more appropriate to the criminal courts and the penal system. Until this is done attitudes will be confused and the influence of the crimino-legal system will be weakened.

3. We should do all we can to simplify the licensing and insurance procedures and seek generally to prevent offences rather than facilitate them.

4. We should think again about the application of the concept of deterrence since

we have all too little evidence on which to base our assumptions about it. We must ask if the efficiency of enforcement is adequate to support deterrent policies; if it is not they are almost useless and bring the law into disrepute.

5. We must improve diagnostic information since treatment without information is almost impossible, and so much that is done in sentencing now is apparently waste of time and money.

6. We must be more realistic about our penal programmes for dealing with convicted motoring offenders and make an effort to utilise some of the basic interest that offenders may have in driving. The aim should be to produce a more competent and disciplined driver; it should also combat cultural lag by teaching that discipline and self-control are just as "virile" as aggressive risk-taking and pointless competition with others.

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Summary in Swedish

Den mänskliga faktorn har hitintills varit förbisedd i trafiksäkerhetsarbetet. Detta gäller i synnerhet gruppnormernas betydelse. Denna underlåtenhet är förklarlig eftersom det för den som sysslar med sociala kontroller är lättare att påverka individen genom vägbygge eller bilens konstruktion. Då det gäller den mänskliga faktorn finns det ingen sådan fast grund att stå på och det finns risk för att gå förlorad i vaga spekulationer.

Willett erinrade om att t.ex. sociala förhållanden och moraluppfattningar inte förändras lika snabbt som t.ex. tekniken och ekonomin. Detta medför bl.a. att bilföraren fortfarande har en privilegierad ställning. Vi har således ännu inte dragit konsekvenserna av att bilen är var mans egendom. Det har också funnits ett starkt motstånd mot att betrakta trafikbrottslingen som kriminell. De beslutande organen har inte heller velat kontrollera bilförarna eller inskränka deras rättigheter i den utsträckning som varit motiverat.

Det är därför nödvändigt att inse att vi ännu inte vuxit in i bilsamhället. Vi måste därför alla uppfostras i bilkörningens verkliga natur. Bilförarna måste få klart för sig att de kör som den sorts människa deras samhälle har gjort dem till.

Vi måste också se till att skilja mellan sociala kontroller av väsentligen administrativ natur — t.ex. registreringsfrågor — och sådana som är mera lämpade för brottmålsdomstolarna och straffsystemet. Ända tills detta har skett kommer bl.a. betydelsen av det straffrättsliga systemet att vara försvagat.

Avskräckande sanktioner

Vidare måste vi på nytt överväga betydelsen av sanktioner med avskräckande syfte. Vi har således alldeles för lite bevis för att kunna bedöma betydelsen av repressiva åtgärder. Det finns också an-

ledning överväga, om rättsväsendet fungerar på ett sådant sätt att det på ett adekvat sätt kan understödja repressiva kriminalpolitiska åtgärder.

Mycket av det som nu görs i samband med att trafikanter döms för trafikbrott är uppenbarligen ett slöseri med tid och pengar. Vi måste därför förbättra våra diagnostiska metoder eftersom behandling på grundval av ett dåligt beslutsunderlag är nästan omöjlig.

Vi bör vidare vara mera realistiska i våra straffrättsprogram för behandling av trafikbrottslingar och därför försöka utnyttja det intresse för bilkörning som trafikbrottslingen har. Syftet måste vara att skapa en mera kompetent och disciplinerad förare. Våra åtgärder bör också söka motverka den brist på bilkultur som finns genom att lära ut, att disciplin och självkontroll är lika manligt som aggressivt risktagande och meningslöst tävlande med andra.

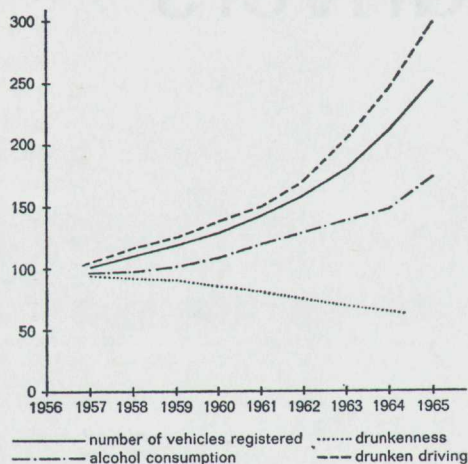
Criminological and psychological aspects of drunken drivers

Wouter Buikhuisen

Introduction

The number of subjects convicted for drunken driving has increased steadily in the past 20 years in many European countries. Although in a way this development is alarming it is nevertheless a quite natural phenomenon. Drunken driving is a function of the amount of alcohol consumed in a country and the number of vehicles present and both have increased nearly everywhere. We should therefore expect an increase in drunken driving. On the other hand we can predict that other alcoholic offences like public drunkenness will decrease in the same period. (figure 1)

Fig. 1 Development of drunken driving, drunkenness, number of vehicles registered and alcohol consumption between 1956 and 1965



As figure 1 shows in the Netherlands these relations clearly exist. Between 1956 and 1965 alcohol consumption¹⁾, the number of registered vehicles as well as the number of people convicted for drunken driving have steadily increased²⁾. From 1956 till 1961 there was no difference in speed of development. After 1961 we can see that drunken driving increased more rapidly. On the other hand, as we expected, public drunkenness is continually decreasing. Times are changing. People do not walk any more. They drive. In-

stead of "drunken walking", we have "drunken driving".

Drunken driving as a drinking problem

Above we suggested that because our society has changed, the way in which excessive drinking manifests itself has changed too. Of course this is only a hypothesis. If it is true however we might expect that drinking has always played a great part in the life of subjects convicted for drunken driving. There is evidence which supports this assumption. For instance: in a recent study in which we compared 94 drunken drivers with a control group of 94 non-delinquents, matched on age, profession and number of miles driven annually we found significant differences in that:

1. Even as adolescents more of the drunken drivers liked drinking ($p < .05$).
2. More drunken drivers admitted to drinking in the day-time ($p < .02$).
3. Subjects convicted for drunken driving drink considerably more ($p < .001$).

Besides, if our hypothesis is true, we should observe among drunken drivers more subjects convicted for public drunkenness as might be expected by chance alone. This is indeed what we found. 12 % of a group of 375 subjects convicted for drunken driving had been convicted for public drunkenness. In our control group matched on age, sex (all were male), profession and the time they had a driving licence, the corresponding percentage was 2.8. Although these percentages are low we should remember that there is a great dark number in this respect. In another Dutch study for instance, not based on police records but on interviews with members of the family of drunken drivers it was found that the majority of them had drinking problems.

Other studies in which reference is made to alcohol offences committed by drunken drivers are:

1. Van Ooyen: In his study in which he analysed police records of more than 600 subjects convicted for drunken driving in Holland, he found that 38 % had previous convictions for alcohol offences³).
2. Händel compared the personal histories of 1 000 drivers, convicted for drunken driving in Germany with those of a control group of 1 000 drivers convicted for offences whilst not under the influence of alcohol. He found that 38 % of the alcohol group had other alcohol offences on their record. The corresponding percentage of the nonalcohol group was 3.5⁴).
3. Of 146 drinking drivers involved in a fatal traffic accident in the U.S.A. 35 (75 %) were alcoholics, according to Selzer and Weiss⁵).
4. Waller in the U.S.A. tried to identify problem drinkers among groups like: drunken drivers (N=150), sober drivers involved in accidents (N=117) and 150 incident-free drivers. Screening criteria for problem drinkers were 2 or more previous arrests involving drinking or identification by a community agency as a problem drinker. According to this criterion 63 % of the drunken drivers were problem drinkers⁶). The corresponding percentages of the sober drivers involved in an accident and of those who were incident-free were respectively 14 and 3.
5. According to Goldberg who collected data about 2 000 subjects convicted for drunken driving in Sweden 45.4% of them were alcoholics⁷). The corresponding percentage for the general population is 8.8%.
6. In analysing 4 000 police records of drunken drivers in Sweden Klette found that 20 % had previous convictions for drunkenness. The corresponding proportion in the general population of drivers is 1 %⁸).
7. Bjerver et al state that 1/3 of the subjects who were involved in traffic accidents had received treatment in a clinic for alcoholics or had been convicted for public drunkenness in the past ten years.
8. Buikhuisen and Van Weringh studied a group of 1 654 subjects convicted for drunken driving in Holland. 46 % had previous alcohol offences¹⁰).
9. Undeutsch and Schneider analysed the police records of 273 subjects convicted for driving while under influence of alcohol in Western Germany. 20 % of this group had previous convictions for drunken driving¹¹).
10. Middendorf found that in his group of 600 West-German drunken drivers 16 % had been previously convicted for the same offence¹²).
11. Finally, in Willett's study 14 % of the 104 subjects convicted for drunken driving in England had additional alcohol offences¹³).

All these studies—it would not have been difficult to mention more—have one thing in common: among subjects convicted for drunken driving there is a high percentage of alcohol recidivists. This suggests that many of the drunken drivers have drinking problems.

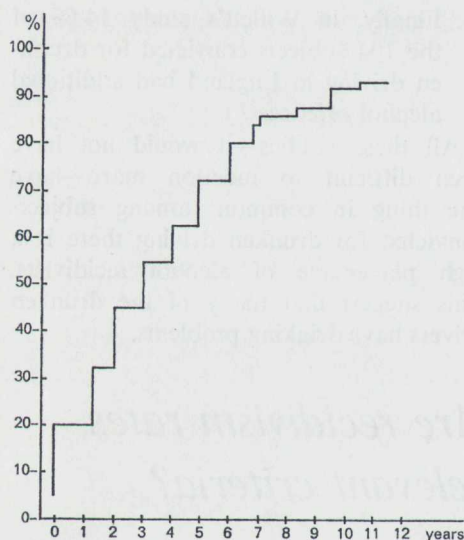
Are recidivism rates relevant criteria?

Above we have quoted many studies in which it has been found that there is a great deal of alcohol recidivism among drunken drivers. Now one could argue whether recidivism rates are not misleading. Literally a subject is a recidivist if he has committed the same offence before. In itself this is of course a very broad criterion. If a subject was convicted in 1968 for drunken driving and he had been convicted too in 1948 for driving under influence of alcohol it hardly makes sense to call him a recidivist. It is important, as Bjerver et al did, to select a fixed period, for instance of 10 years and to

see whether in this period there has been any recidivism.

In order to know more about the rate of recidivism Buikhuisen and Van Weringh carried out a follow-up record study of 1 872 subjects convicted in 1955 and 1956 for drunken driving in the Netherlands.¹⁴⁾ Of this group 36.3% were tried again for drunken driving after 1956. For this group of 679 alcohol recidivists we calculated how much time elapsed between their conviction in 1955 or 1956 and their next arrest for drunken driving. The results are presented as a cumulative frequency distribution. (figure 2)

Fig. 2 Recidivism rate of subjects reconvicted of drunken driving

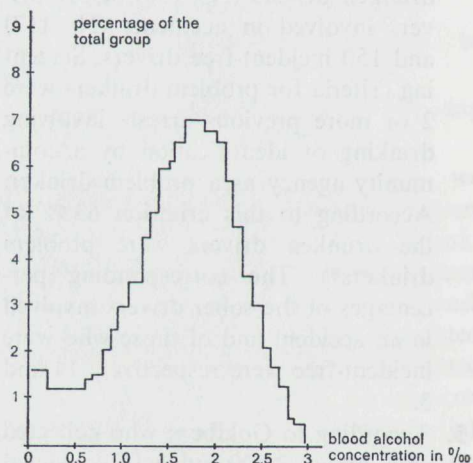


From figure 2 it can be seen that 20 % of the recidivists were reconvicted for drunken driving within one year. Within three years half of them had been arrested for drunken driving. Figure 2 clearly shows that it does not take much time before drunken drivers are convicted again for driving under influence of alcohol. This is a remarkable fact, especially when we realise that there is a great dark number for drunken driving. Buikhuisen, Jongman and Oving found that of 2 971 cases of self reported drunken driving only 3 were detected.¹⁵⁾

How much does the drunken driver drink?

In the preceding paragraphs we have seen that there is a high percentage of alcohol recidivism among drunken drivers. This could mean that drunken drivers drink frequently. It does not necessarily mean that they drink much. To prove that drunken drivers are excessive drinkers we need other information, for instance data about their blood alcohol level at the time they were arrested. In the Netherlands Froentjes and Verburgt analysed nearly 10,000 blood samples of subjects *suspected* of driving under influence of alcohol.¹⁶⁾ In figure 3 we present the distribution of blood alcohol concentrations found in this group.

Distribution of blood alcohol concentration of subjects suspected of drunken driving (N=9,758)



As can be seen from figure 3 the average blood alcohol concentration of this group lies between 1.75 and 1.85‰. In only 16% of the analysed blood samples was a blood alcohol level found of less than 1‰. In more than a quarter of the cases the blood alcohol concentration even exceeded the 2‰ level. If we would apply Goldberg's criterion for alcoholism (a blood alcohol concentration of 1.5‰ or higher) 62% of this group would be alcoholics.

In Germany Ponsold¹⁷⁾ analysed 15,000 blood samples of drunken drivers. He too found an average blood alcohol concentration of about 1.8‰. The average found by Middendorff in his study was 1.9‰.¹⁸⁾ In Buikhuisen's study of blood alcohol levels among about 600 subjects convicted for drunken driving in the Netherlands less than 5% had a blood alcohol level under 1‰, and 83% had a blood alcohol concentration of 1.5‰ or higher. The average blood alcohol level found was 1.85‰.

In his study in England Willett found an average urine alcohol concentration of 2.75‰.

All these results leave no doubt that drunken drivers are excessive drinkers. Based on this evidence we could label more than half of the subjects convicted for drunken driving as pre-alcoholic or alcoholic. Rather than call them "criminals on the road" we could more properly call them "patients on the road"; for many drunken drivers are not just social drinkers, they seem to be problem drinkers.

Criminal records of drunken drivers

Above we have found that there is a high percentage of alcohol recidivism among drunken drivers. There is however evidence that subjects convicted for driving under influence of alcohol do not confine themselves to alcohol offences.

Undeutsch and Schneider¹⁹⁾ found in West-Germany that in a group of 273 drunken drivers 33% had been convicted for an economic offence (theft etc.) In their control group the corresponding percentage was 10.

According to Middendorff 28% of 600 subjects convicted for drunken driving in West-Germany had previously committed non-traffic crimes.²⁰⁾ Buikhuisen and Van Weringh analysed 1 872 cases of subjects convicted for drunken driving in the

Netherlands. Of this group 52 % had convictions for non-traffic crimes.²¹⁾

Willett reports that of his group of 104 British subjects guilty of driving under influence of alcohol 18 % had convictions for serious non-motoring offences.²²⁾

In most of the above mentioned studies no information is given about the percentages of subjects with previous convictions in comparable groups of licence holders not convicted for drunken driving. In his paper presented to the Fourth European Conference of Directors of Criminological Institutes in Strasbourg in 1966 Willett stressed the importance of this point. Therefore Buikhuisen and Doddema started a study in which a group of 375 subjects convicted for drunken driving were compared with a control group of 375 license holders matched on sex (all were male), age, profession and the time they possessed a driving license. It was found that of the drunken drivers 53 % had previous convictions for serious non-motoring offences. The corresponding percentage of the control group was 16.

Summary:

From the studies mentioned in the preceding paragraphs it clearly emerges that drunken drivers are no random sample of the population of license holders. As a group they include significantly more alcohol recidivists as well as serious non-motoring offenders.

The driving record of drunken drivers

Studies like those Borkenstein, Vamasi, Holcomb, Freudenthal and Lucas have clearly established the fact that subjects driving with a blood alcohol level exceeding 0.8‰ are significantly more involved in accidents than sober drivers. Several authors, like Griep in the Netherlands, have calculated the percentage of accidents for which drivers under influence of alcohol were responsible. Although these studies have many merits they are all based on theoretical deductions. In

order to see whether subjects convicted for driving under influence of alcohol are indeed a greater risk in traffic the Criminological Institute of the State University of Groningen carried out a follow-up study in which the criminal records of a group of 384 subjects convicted in 1955 or 1956 for drunken driving were compared with those of a control group of 384 licence holders. The control group was carefully matched on factors like age, profession, the year they got their driving license and sex (all were male). Two

periods were distinguished: 1st of January 1956—31st of December 1959 and 1st of January 1960—31st of December 1966. For both periods separately information was collected about traffic offences and non-traffic offences committed during these intervals. In table 1 the results are presented for the second period (1960—1967). By choosing this period we can be reasonably sure that driving experience cannot be an intervening variable. In 1960 both groups can be regarded as experienced drivers.

Tab. 1 Comparison of driving records and criminal records of drunken drivers and a matched control group of license holders (observation period 1960—1966)

	N	Number of accidents involved in	Number of serious traffic offences	Number of minor traffic offences	Driving while disqualified
Drunken drivers	384	159	247	117	37
Control group	384	46	87	18	3

Table 1 hardly needs any comment. In all respects the driving record of drunken drivers is worse than that of the control group. Drunk or sober: subjects convicted for drunken driving form a deviant group. These results are in concordance with what has been found by Selzer et al in their study in which they compared 50 alcoholics. They too found that alcoholics are much more involved in traffic accidents and commit more traffic law violations.²⁴⁾

Personality traits of drunken drivers

In the preceding paragraphs we have seen that drunken drivers are in many respects a deviant group. They are more involved in accidents, are characterized by a relatively high alcohol recidivism and as a group have committed many additional non-motoring offences, especially against property.

In criminology it is a well established fact that delinquents differ from non-delinquents with regard to personality traits like neuroticism, self-control, etc. On the other hand it has been found that alcoholics have a different personality structure. Therefore it is surprising that so little systematic research has been done about personality traits of drunken drivers. Most authors confine themselves to describing the group in rather broad terms e.g.: among drunken drivers a high percentage is alcoholic or has other serious social problems. Below we will present the results of several studies in this area.

Erkkilä carried out an extensive investigation in Finland and found an astonishing large proportion of somatic and psychosomatic diseases among subjects convicted for drunken driving.²⁵⁾ Glatt states that 80 % of the drivers interviewed in his study turned out to be alcoholic.²⁶⁾ For years they had driven after having drunk vast quantities of alcohol. Chetta concludes in her article about alcohol, drugs and driving that there is strong

evidence that alcoholics and problem drinkers are responsible for a large proportion of fatal accidents.²⁷⁾ Kunkel administered in West-Germany the Rorschach test to two groups: one convicted for drunken driving, the other sentenced for various other misdemeanors. The protocols of 42 alcoholics were found to be different from 33 other delinquents by containing more water-responses and fish responses.²⁸⁾ According to Santamaria²⁹⁾ in England some 35 000 road casualties per annum result from drunken driving, the majority of the drivers having a blood alcohol concentration exceeding 0.8 ‰. Such drivers tend to be either alcoholics or "problem drinkers" rather than social drinkers. In the U.S.A. Selzer, Payne, Gifford and Kelly examined 67 drivers arrested for driving under influence of alcohol.³⁰⁾ They found that 78 % of the arrested drivers had pathological drinking problems, 67 % suffered from recognizable psychiatric illness exclusive of alcoholism. Of their group of pathological drinkers (N=52) 40 had classifiable psychiatric illness in addition to their drinking problem. This group of 40 subjects consisted of 29 passive-aggressive personalities, 2 sociopaths, 1 unstable personality, 1 paranoid personality, 4 were depressed and 3 schizophrenic. In another study Selzer³¹⁾ states that the alcoholic's drinking often releases behaviour motivated by underlying personality traits that result in serious accidents or traffic law violations. As important traits in this respect Selzer mentions: chronic hostility, depression, self-destructiveness and feelings of invulnerability and omnipotence. Hoff and Kryspin-Exner also point to the importance of the desinhibiting effect of alcohol.³²⁾ Smart and Schmidt correctly state that as alcoholics have high blood alcohol concentrations at the time of their accidents it cannot be ignored that sensorimotor impairment is an important factor too in the accidents of alcoholics.³³⁾ They conclude that studies of alcoholic's adaptation to alcohol and their person-

ality characteristics suggest that the two sets of variables interact in a complicated manner.

Smart studied personality traits of two groups of alcoholics.³⁴⁾ The first one consisted of alcoholics who had been involved in one or more accidents, the second one had been accident free. The Maudsley Personality Inventory, The Rosenzweig Picture Frustration test and the Wechsler Adult Intelligence Scale were administered. No significant differences were found.

Studies about personality traits of drunken drivers: some critical notes

In the preceding paragraphs we have presented several studies dealing with personality traits of drunken drivers. With regard to these studies we should like to make some remarks.

1. The number of studies carried out in this field is very small. Especially in Europe, hardly any research has been done. Besides most studies deal with what we should like to call *psychiatric* concepts like alcoholism, personality disorders, etc. *Psychological* personality traits like neuroticism, introversion-extraversion, intelligence, self-control etc. have been neglected almost entirely.
2. From a methodological point of view most of the studies are very unsophisticated. For instance: Many of them give no information about the extent to which the group studied is representative for the general population of drunken drivers. Most of them do not define the concepts they use. In this respect there is for example a great discrepancy between the ease with which many authors label their subjects

as alcoholic and the difficulties most writers on alcoholism have in defining this concept. This lack of definition makes comparison of results very difficult. For instance: According to Selzer et al 57% of the group of drunken drivers they studied was alcoholic. Schmidt et al found that only 28% of a group of 427 drunken drivers charged with drunken driving in the USA appeared to be alcoholics. How should we explain these differences? Have they studied different populations or have they used different definitions (criteria) for being alcoholic?

In most studies no matched control groups have been used. Yet this is essential. The only way to know what is characteristic of a special group is to compare the group with a control group. This control group should be carefully matched.

Psychological traits of drunken drivers

In 1966 the Dutch Minister of Justice asked the Criminological Institute of the State University of Groningen to study some problems regarding traffic delinquency, especially drunken driving. Special attention was to be paid to the possibilities of constructing a treatment program for subjects convicted for driving under the influence of alcohol. In order to get more insight in the phenomenon of drunken driving a research program was carried out. This program consisted of several projects and in one of these we studied personality traits of drunken drivers. The aim of this study was to see whether subjects convicted for drunken driving differed from non-traffic delinquents with regard to several psychological traits. In order to be able to answer this question we administered a number of paper and pencil tests measuring personality traits to both groups.

The following test were used:

1. De Amsterdamse Biografische Vragenlijst (Amsterdam Biographical Questionnaire) usually abbreviated as A. B. V. This questionnaire has about the same structure as the Maudsley Personality Inventory. It measures neuroticism, introversion-extraversion and neurosomatic complaints. The A. B. V. has been standardised for the Dutch population.
2. Standard Progressive Matrices. This intelligence test constructed by Raven measures non-verbal intelligence.
3. California Personality Inventory. From this test four scales were used viz the socialization scale, the responsibility scale, the self-control scale and the flexibility scale.
4. The Nigni Drive. In fact this test consists of two existing tests viz a rigidity questionnaire of Nigniewitsky and the Drive test of Brengelmann. Both tests were united to one.
5. The Hofstee. A Dutch test constructed by Hofstee, which is supposed to measure the propensity to take risks.
6. A test of all-inclusive conceptualization, constructed by Snider. This questionnaire measures the propensity to make generalizing remarks.

The samples

The above mentioned tests were administered to two groups: drunken drivers and a matched control group. The group of drunken drivers consisted of subjects convicted for driving under the influence of alcohol, who were sentenced to imprisonment. All were male. They served their sentence in Bankenbosch, a special prison for traffic delinquents. In the Netherlands more than half of the subjects convicted for drunken driving are sentenced to prison, but those below the age of 23 and offenders with a substantial record of serious non-motoring offences are not allowed to serve their sentence in

Bankenbosch. Neither of these categories is represented in our sample. However, the majority of drunken drivers sentenced to imprisonment serve their sentence in Bankenbosch, so we can say that our sample is rather representative of drunken drivers in the Netherlands who are sentenced to imprisonment.

The size of the groups tested varies between 150 and 270 according to the test administered.³⁵⁾ All subjects were randomly selected. The control group consisted of citizens of Groningen. They were carefully matched on age, profession and sex.

Results

The results of this study are presented below. In order to make our tables more comparable we have divided our test scores into three categories viz low, medium, high. This has been done by transforming all scores into decile scores. A score is defined as low if it belongs to the first three deciles (1, 2 and 3), as high if it belongs to the last three deciles (8, 9 or 10). The other scores (in decile 4, 5, 6 or 7) are called medium. For the statistical analyses, however, the original raw scores were used. To test the significance of the difference the Mann Whitney U was applied, except in case of the

A.B.V. The scores of this test are usually presented as decile scores. Here the chi square was applied. This was also done for the Raven.

Intelligence

As can be seen from table 2 in intelligence no differences were found between drunken drivers and the general population. The distribution of scores of our group of drunken drivers is almost identical with those of the general population.

In comparing motoring offenders in England with a control group matched on age and social status Brand found that both groups differed in intelligence, the motoring offenders being less intelligent.³⁶⁾ To solve this discrepancy we tested a second sample of drunken drivers imprisoned in Bankenbosch. As table 2 shows also for this sample no difference in intelligence was found. We therefore may conclude that in the Netherlands intelligence is no differentiating factor. But as Brand's sample consisted of *motoring* offenders in general while we have tested *drunken drivers* it is possible that the difference in results could be explained by the fact that the populations studied are not identical.

Comparison of drunken drivers and the general population on non-verbal intelligence Tab. 2

	Drunken drivers sample I	General population	Drunken drivers sample II	General population
N	98		132	
Score A (high)	11	9.8	8	13.2
B	14	14.7	31	19.8
C	23	24.5	29	33.0
D	28	24.5	33	33.0
E (low)	22	24.5	31	33.0
	98	98.0	132	132.0

X²=1.0; df=4; p > 0.9

X²=8.9; df=4; p < .10

Neuroticism and neurosomatic complaints

As can be seen from table 3 drunken drivers are significantly more neurotic. In a recent study in which we compared drunken drivers (N=113) with a control group (N=100) matched on age, profession, and number of miles driven annually the same results were obtained ($p < .005$).

With regard to neurosomatic complaints no differences were found. This

result could be an artefact. All drunken drivers sentenced to prison have to pass a medical examination. Only those who are in good physical health are allowed to enter Bankenbosch. We therefore had a special selection. On the other hand there is some evidence that this factor could be of importance. In another study Buikhuisen, Dijksterhuis and Zweens compared two matched groups: one consisted of drunken drivers and the other of citizens of Groningen. The drunken drivers mentioned significantly more neurosomatic complaints ($p < .01$).

Tab. 3 Comparison of drunken drivers and general population on neuroticism and neurosomatic complaints*)

N	Neuroticism		Neurosomatic complaints	
	drunken drivers	general population	drunken drivers	general population
	194		194	
Testscore:				
High	43	30	28	30
Medium	33	40	39	40
Low	24	30	33	30
	100%	100%	100%	100%

$$X^2=15.10; df=2; (p < .001)$$

$$X^2=1.10; df=2; p > .70$$

Extraversion

Table 4 clearly shows that drunken drivers are significantly more extravert. In a recent study in which Hemmel, member of the Criminological Institute of

the State University of Groningen, compared drunken drivers (N=100) with a matched control group (N=100) consisting of citizens of Groningen the same results were obtained. Drunken drivers were found to be more extravert ($p < .005$).

Tab. 4 Comparison of drunken drivers and the general population on social extraversion

N	Drunken drivers sample I	General population	Drunken drivers sample II	Control group
	194		113	100
Testscore:				
High	44	30	43	35
Medium	37	40	37	29
Low	19	30	20	36
	100%	100%	100%	100%

$$X^2=23.47; df=2; p < .001$$

$$X^2=6.48; df=2; .02 < p < .05$$

Selfcontrol, responsibility and socialization

As mentioned above we also used several scales of the California Personality Inventory, a test which has been much used in research with delinquents. As can be seen from table 5 it is able to differentiate between drunken drivers and non-traffic delinquents.

Table 5 clearly shows that there is a great difference between our drunken drivers and the control group. The

drunken drivers score lower on the responsibility scale, lower on the socialization scale and have less self-control.

In a replication study in which more than 200 subjects participated, half of them convicted for drunken driving, the other half consisting of citizens of Groningen matched on age, profession and number of miles driven annually, exactly the same result was obtained. In this study too we found drunken drivers to be less socialised ($p < .0001$), more impulsive ($p < .03$) and less responsible ($p < .001$).

Comparison of drunken drivers and a matched control group on self-control, responsibility and socialization **Tab. 5**

	Responsibility		Socialization		Self-control	
	drunken drivers	control group	drunken drivers	control group	drunken drivers	control group
N	198	169	198	169	198	169
Testscore:						
High	28.8	53.3	48.0	68.9	33.3	47.3
Medium	41.9	34.3	35.5	24.5	37.9	36.7
Low	29.3	12.4	16.5	6.6	28.8	16.0
	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
	$p < .0001^*)$		$p < .0001^*)$		$p < .0001^*)$	

Flexibility and rigidity

Our test battery also included the Fx scale of the C.P.I., measuring flexibility and the Migni-Drive, a test which is supposed to measure drive and rigidity. Neither of the two tests was able to differentiate between drunken drivers ($N=267$) and a matched group of non-traffic delinquents ($N=261$). We have replicated this study recently but no difference could be found in rigidity between the drunken drivers and our control group.

Propensity to generalize

Snider's test of all-inclusive conceptualization is supposed to measure something like a propensity to generalize. This test was administered to 229 drunken drivers and a matched control group of 209 citizens of Groningen. The results are presented in table 6.

Tab. 6 Comparison of drunken drivers and a control group on Snider's all-inclusive conceptualization test

	Drunken drivers	Control group
N	229	209
Testscore:		
High	40.7	35.9
Medium	41.9	37.8
Low	17.4	26.3
	100.0%	100.0%
$p < .07^*)$		

According to table 6 there is a slight tendency for drunken drivers to have a higher propensity to generalize. However, the difference in this respect is not very large.

Propensity to take risks

In the Netherlands Hofstee has constructed a test to measure the propensity to take risks. 202 drunken drivers took this test. The "Hofstee" was also administered to a control group of 167 non-traffic delinquents. The results are presented in table 7.

Tab. 7 Comparison of drunken drivers and a control group on the propensity to take risks

	Drunken drivers	Control group
N	202	167
Testscore:		
High	24.2	16.8
Medium	38.2	37.1
Low	37.6	46.1
	100.0%	100.0%
$p < .02^*)$		

From table 7 it can be seen that drunken drivers score significantly higher on a test measuring the propensity to take risks.

*) The Mann Whitney U was applied on the ungrouped scores.

Summary

Summarizing it can be stated that with regard to personality traits differences could be established between drunken drivers and non-traffic delinquents.

Drunken drivers were found to be more neurotic, more extravert, more impulsive, less socialized, they showed a greater propensity to take risks, and to generalize and finally scored lower on a responsibility scale.

No differences were found with regard to intelligence and rigidity.

Psycho-biographical characteristics of drunken drivers

In the preceding paragraphs we have seen that drunken drivers are in several respects a deviant group. Many of them could be called problem drivers. In order to know more about the life of drunken drivers and their problems the Criminological Institute of the State University of Groningen carried out a research in which we compared two groups of about 100 drivers. The first one consisted of subjects convicted for drunken driving, the second consisted of drivers who had no convictions for driving under influence of alcohol. Both groups were matched on sex, age, socio-economical status and number of miles driven annually.

All subjects were extensively interviewed. Topics discussed in the interview were:

1. Pre-adolescence: how did they behave as youngsters.
2. Parents: how did they perceive their father and mother.
3. Adolescence: how did they feel and behave as adolescents.
4. Job history: number of jobs, unemployment, job characteristics, job satisfaction.

5. Family: relationship with wife and children.
6. Friends: number of friends, perception of friends.
7. Leisure activities.
8. Individual traits: how do they feel, are they satisfied, do they have problems.
9. Drinking behavior and attitudes towards drinking.

In order to make group comparisons possible, the questionnaire used was highly structured (precoded answers, scales, semantic differentials etc. were used).

Results

Pre-adolescence: In the literature about alcoholism many references are made to the way alcoholics have been reared by their parents. It is postulated for instance that alcoholics have dominant mothers, who are overanxious etc. In our study we could not find any such differences. As a matter of fact, with respect to the questions we have asked about their early youth (till about 13 years) hardly any difference could be found, neither with regard to the behaviour of their father, nor with regard to the way they described their mother. At school too they did not behave in a deviant way. This also applies to their leisure activities at that time. The only significant difference we found was that drunken drivers played more alone ($p < .07$) and were, as they say, more spoiled by their father ($p < .01$).

Adolescence. In the interview we also asked how they behaved and felt when they were about 17. Some differences could be found between the two groups. It turned out that drunken drivers felt more lonesome at that time ($p < .09$), were more bored ($p < .06$), were less satisfied with their youth ($p < .10$) and more liked drinking ($p < .10$). As the p -values show, these differences are not very great however.

Job history. Some differences were found between drunken drivers and the

control group. Drunken drivers seem to have less fixed working hours ($p < .10$), they have to travel more ($p < .04$), they have more business meetings ($p < .07$) and meet more stress in their work ($p < .09$). They seem to have no fixed income ($p < .025$).

As can be seen most differences are rather small.

With regard to unemployment, relation to colleagues and job satisfaction no differences were found between both groups.

Family life. This factor turned out to be one of the most important differentiating items. Almost in every respect drunken drivers differed from the control group, especially with regard to relationship with their wives. They are less in agreement with their wives about the way the children are educated ($p < .01$), they showed less affection towards their wives ($p < .005$). They state that their wives are more discontented ($p < .07$), are less cooperative ($p < .07$), do not understand them ($p < .04$), are less compliant ($p < .07$). There is less communication with their wives ($p < .02$), they quarrel more ($p < .01$).

They have been more disappointed by their marriage ($p < .03$). They have more problems in their family ($p < .07$) and finally they complain more about the atmosphere at home ($p < .0003!$).

Friends. Their friends too seem to play an important role. In general they state that their friends have a bad influence ($p < .01$) and that they are not of much help to them ($p < .07$). With regard to drinking habits we found that their friends hardly changed their drinking pattern if they had to drive ($p < .001$).

Leisure activities. There is a tendency that drunken drivers have less hobbies ($p < .10$), their hobbies do not mean much to them ($p < .005$), they are less interested in reading ($p < .10$), they more go out ($p < .10$), they more like to play cards ($p < .025$), they more like gambling ($p < .01$), they more go to a café ($p < .001$) and they less pay a visit to their family ($p < .05$).

Individual characteristics. It was found that drunken drivers liked to go out more ($p < .07$), were more careless with money ($p < .005$), liked to take risks more ($p < .08$), felt more lonesome ($p < .10$), were more dissatisfied with their sexual lives ($p < .005$) and were less satisfied with life in general ($p < .005$).

Drinking behaviour and attitude towards drinking. It is of course no surprise that with respect to this item great differences were found between drunken drivers and the control group. Drunken drivers drink considerably more ($p < .001$), they drink more in the day-time ($p < .02$), they say they have a greater tolerance for alcohol ($p < .001$), and, as may be expected, their drinking brought about many more personal problems ($p < .0001$).

Finally more of them state that drinking 5 glasses (b.a.c. $0.80/_{00}$) has no influence on their driving capacity ($p < .0001$).

Summary: By comparing a group of 100 drunken drivers with a matched group of 100 non-offenders several differences were found of which three stand out: family life, drinking behaviour and level of satisfaction with life in general. There are strong indications that unsatisfactory family life is of special importance.

Predicting recidivism among subjects convicted for drunken driving

In the preceding paragraphs we have seen that there is a high percentage of alcohol recidivism among drunken drivers. Therefore it will be interesting to consider whether there are any differences between recidivists among drunken drivers and non-recidivists. In order to be able to answer this question we have

carried out a follow-up study. We started with those subjects who had been convicted for drunken driving in 1955 or 1956. In 1967 we analysed their criminal records to see which of them had committed offences between 1956 and 1966. The size of the group studied was 1872.³⁷⁾

Table 8 shows how many of them relapsed into crime after their conviction in 1955 or 1956.

Number of subjects relapsing into crime after being convicted for drunken driving in 1955 or 1956*)

Convicted for drunken driving after 1956	679	(36.3%)
Convicted for a serious motoring offence (drunken driving excluded)	218	(11.6%)
No conviction for a serious motoring offence after 1956	975	(52.1%)
Total:	1872	(100.0%)

From table 8 it can be seen that almost half of the subjects convicted in 1956 for drunken driving have committed a serious motoring offence in the period between 1956 and 1966. More than one third were convicted for driving under influence of alcohol.

Is there any difference between the group of alcohol recidivists ($N=679$) and the subjects who did not relapse into crime after 1956 ($N=975$)? In order to be able to answer this question we compared both groups on a number of variables like age, social status, marital status, level of urbanization of dwelling-place, time of arrest (which hour, which day), habitual drinking, blood alcohol level when convicted in 1955 or 1956, number of crimes committed before 1955 or 1956, number of serious motoring offences committed before 1955 or 1956, number of serious non-motoring offences committed before 1955 or 1956.

*) This table only deals with recidivism about serious motoring offences. Recidivism with regard to non-motoring offences has been excluded.

Results

For all the above mentioned variables alcohol recidivists and non-recidivists were compared. Many differences were found. Below we will present the results.

Age: more recidivism among subjects between 30 and 45.

less recidivism among subjects of 45 and over ($p < .05$).

Social status: more recidivism among middle-class people.

less recidivism among members of the upper class ($p < .005$).

Marital status: with regard to this factor no differences were found between recidivists and non-recidivists.

The need of a car in his profession: there is more recidivism among subjects who need a car to carry out their profession ($p < .005$).

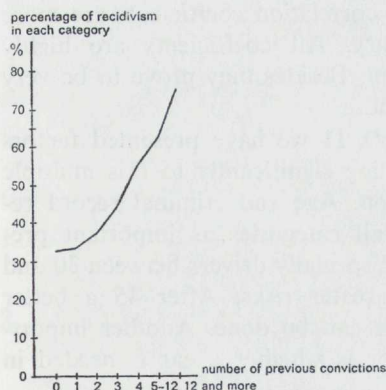
Contact with alcohol in his profession: more recidivists have professions in which drinking is quite common ($p < .001$).

Habitual drinking of alcohol: among recidivists more habitual drinking of alcohol was found ($p < .001$).

Blood alcohol level at time of arrest: the blood alcohol level of recidivists was significant higher ($p < .05$).

Number of serious offences committed: recidivists had committed more serious offences before they were convicted for drunken driving in 1955 or 1956 ($p < .0001$).

4 Recidivism rates according to number of times previously convicted



As can be seen from figure 4 there is almost a perfect linear relation between the number of previous convictions and the percentage of recidivists in the proper groups.

Number of previous serious motoring offences: recidivists had considerably more previous convictions for serious motoring offences ($p < .001$).

Number of previous alcohol offences: recidivists had considerably more previous convictions for alcohol offences ($p < .001$).

Number of previous serious non-motoring offences: recidivists had considerably more previous convictions for serious non-motoring offences like crime against property etc. ($p < .001$).

Level of urbanization of dwelling place: with regard to this factor no differences were found between recidivists and non-recidivists.

Time of arrest: with regard to this variable no differences were found between recidivists and non-recidivists.

Correlation between some variables and recidivism (single correlations)

For all the variables which were able to differentiate between recidivists and non-recidivists we calculated correlations with recidivism.³⁸⁾ In order to examine the consistency of our correlation coefficients we divided our group of 1654 drunken drivers convicted in 1955 or 1956 into two groups. The first ($N=845$) consisted of subjects convicted in 1955. The second ($N=809$) consisted of subjects convicted for drunken driving in 1956. For each group separately correlation was calculated between the various variables (age, social status etc.) and recidivism. The results are presented in table 9.

Tab.9 Correlations of some variables with recidivism

Factors	Correlation coefficient	
	1955 group (N=845)	1956 group (N=809)
Age	— .07	— .06
Social status	+ .05	— .02
The need of a car in his profession	+ .08	+ .10
Drinking as part of his profession	+ .06	+ .08
Habitual drinking	+ .06	+ .07
Blood alcohol level	+ .10	
Number of serious traffic offences committed	+ .20	+ .24
Number of alcohol offences committed	+ .18	+ .23
Criminal record	+ .20	+ .15

.07 is significant at the .05 level.

Although, due to the size of the groups, most correlations are statistically significant, the correlation coefficients are very low. The only coefficients of relative importance are those related to previous convictions.

Correlation between some variables and recidivism (multiple correlations)

In the preceding paragraph we have calculated single correlations between some factors and recidivism. Most of the correlation coefficients were unsatisfactory. Of course it is possible that if we combined all variables and calculated a multiple correlation the correlation coefficients would be more satisfactory. This possibility was investigated. Three criteria for recidivism were used, respectively based on the number of times a subject was convicted for drunken driving after

1955 or 1956 (recidivism index), the time it took before he was convicted again for drunken driving (recidivism rate). The third criterion was the simplest one. Here we only dishotomized the drunken drivers as between alcohol recidivists and non-alcohol recidivists (simple recidivism).

The results of our calculation are presented in table 10.

The factors correlated with recidivism were age, social status, the need of a car in his profession, drinking as part of his profession (differential opportunity), number of previous convictions for traffic offences, number of previous convictions for alcohol offences, number of previous convictions for serious non-alcohol traffic offences, number of previous convictions for serious non-motoring offences, number of previous convictions for less serious offences, the time between his conviction in 1955 or 1956 and his last previous conviction.

Multiple correlation of 10 factors with respectively recidivism, recidivism rate and recidivism index

	Subjects convicted in 1955 (N=845)	Subjects convicted in 1956 (N=809)
Correlation with recidivism	.30	.33
Correlation with recidivism rate	.35	.36
Correlation with recidivism index	.37	.35

As can be seen from table 10 the multiple correlation coefficients are more satisfactory. All coefficients are highly significant. Besides they prove to be very consistent.

In table 11 we have presented factors contributing significantly to this multiple correlation. Age and criminal record return in all categories as important predictors. Especially drivers between 30 and 45 are greater risks. After 45 a better prognosis can be done. Another important factor is whether a car is needed in

his profession. Social status too seems to be of importance. Especially representatives of the middle classes seem to be recidivism-prone. The best predictor un-

doubtedly is criminal record. There is significantly more recidivism among subjects with previous convictions (see also figure 4).

Factors contributing significantly to the multiple correlation of 10 factors with 3 re- Tab. 11
cidivism indices

Recidivism		Recidivism rate		Recidivism index	
1955	1956	1955	1956	1955	1956
Age	Age	Age	Age	Age	Age
Social status		Social status			
Car necessary for profession		Car necessary for profession			
Criminal record		Criminal record		Criminal record	

Effectivness of sanctions

In the preceding paragraphs we have considered the question whether it is possible to identify alcohol recidivists. Multiple correlation coefficients were calculated which are promising. By adding other variables these coefficients certainly can be improved. In fact we succeeded in getting correlation coefficients of .40 and higher by using the court sentence as a predictor. If we realize that especially, because of the great dark number, our recidivism criterion is unreliable, it certainly seems worthwhile to continue studies in this field. But what if we found reliable predictors? Should we give "recidivism-prone" subjects special treatment? Would it be of any help to sentence them in a special way? What is the effectiveness of our present sanction system? Does it have any prevention power? In order to be able to answer these questions we have carried out a study in which we investigated recidivism rates of drunken drivers:

- 1. who only were fined for drunken driving
- 2. who were conditionally sentenced to imprisonment

- 3. who were unconditionally sentenced to imprisonment
- 4. who were disqualified from driving
- 5. who were not disqualified from driving

Recidivism rates of drunken drivers sen- Tab. 12
tenced in different ways

	Percentage reconvicted for drunken driving
Unconditionally sentenced to prison (N=1243)	38
Conditionally sentenced to prison (N=545)	38
Subjects sentenced with a fine (N=534)	32
Disqualified from driving (N=1149)	36
Not disqualified from driving (N=404)	37

Table 12 clearly shows that although the applied sanctions differ in severity there is hardly any difference in effect. These results are in accordance with what has been found previously by Midden-dorff³⁹⁾ and by Buikhuisen.⁴⁰⁾ Findings like these leave at least much doubt as to the pedagogical value of existing forms of punishment. Now it could be argued that sanctions are not randomly assigned.

Drunken drivers conditionally sentenced to prison probably will, as a group, differ from drunken drivers who have been unconditionally sentenced to prison. This is indeed what we found. The unconditionally sentenced group had significantly more previous convictions for serious motoring offences as well as for non-motoring offences. The study of Middendorff,⁴¹ however, clearly shows that the fact that we did not find any difference in effect cannot be explained by this inequality of our groups. Middendorff found (with comparable groups) that recidivism among subjects conditionally sentenced to prison is as high as recidivism among subjects unconditionally sentenced to prison.

Disqualification from driving

Withdrawal of the driving licence has been quite generally accepted as one of the best sanctions to combat drunken driving or traffic delinquency in general. This sanction is supposed to be effective in two ways. At first it should keep these drivers out of traffic for some time. Secondly the inconvenience of not being allowed to drive should make convicted drivers drive more carefully in future. Many experts believe that disqualification from driving worries motoring offenders more than any other penalty to which they are liable.

Are these assumptions correct? The correctness of the first one viz. that disqualification from driving keeps these drivers off the road for some time might be seriously doubted. Because of lack of control many of these offenders do drive despite this disqualification. Coppins for instance found that within 6 years 33% of those whose licences had been suspended disobeyed the court order not to drive, and 68% of those whose licences were permanently cancelled did so.

Does withdrawal of a driving licence really have any special preventive power? Above we have seen that with regard to recidivism it does not make any difference whether subjects are disqualified

from driving or not (see table 12). It might be possible, however, that within the group of subjects disqualified from driving a relation exists between length of the period of withdrawal and recidivism. It seems reasonable to expect that less recidivism will occur among subjects disqualified from driving for a long period and conversely that relatively much recidivism will occur among offenders whose licence has been withdrawn for only a short period. Is there any such relation? To answer this question we have calculated recidivism rates for subjects whose licence has been withdrawn for different periods. The results are presented in table 13.

Recidivism percentages of drunken drivers whose licence has been withdrawn for different periods

Licence withdrawn for:	Percentage of subjects reconvicted for drunken driving
less than 1 year (N=493)	35
1—2 years (N=453)	33
2—3 years (N=190)	49
more than 3 years (N=83)	37

Table 13 clearly shows there is no inverse relation between length of time a licence is withdrawn and recidivism. On the contrary! If any relation exist it is a positive one. There is relatively more recidivism among subjects who have been disqualified from driving for a long period. We have calculated the correlation between both variables. The correlation coefficient was +.23.

Withdrawal of licence as perceived by subjects convicted for drunken driving

Above it was stated that according to experts withdrawal of licence is experienced as the most severe sentence by motoring offenders. To investigate the correctness of this thesis we asked 107 subjects convicted for drunken driving what they would prefer: being disqualified

fied from driving for some time or sentenced to prison. 51% preferred imprisonment rather than losing their driving licence. 49% would rather be disqualified from driving than be sent to prison. These percentages show that the threat of being disqualified from driving is not alike for all offenders. Profession and social status play an important role in this respect. Offenders who need a car to carry out their profession prefer imprisonment. Subjects with high social positions prefer losing their driving licence to being sent to prison ($p < .05$).

The effectiveness of imprisonment

In order to see whether any relation exists between time imprisoned and recidivism we divided our group of drunken drivers sentenced to prison according to the period imprisoned into three groups. The first group was sent to prison for less than 1 month, the second one for a period of 1—3 months, the third for more than 3 months. For each group we calculated the number of subjects reconvicted for drunken driving. The results are presented in table 14.

14 Recidivism percentages according to time sent to prison

Sentenced to prison for	Percentage reconvicted for drunken driving
less than 1 month (N=979)	37
1 to 3 months (N=180)	39
more than 3 months (N=84)	46

From table 14 can be seen that no inverse relation exists between time sentenced to prison and recidivism. On the contrary. A positive relation was found. There is more recidivism among subjects sentenced to prison for relatively long periods.

Recommendations

Drunken driving is a combination of drinking and driving. Both drinking and driving play a powerful role in our present society. It would be very difficult to imagine our society without cars. Indeed automobiles are becoming more and more indispensable, both in business as well as in leisure activities. In future we even can expect that the private car will be our main medium of transport.

Drinking too—because of its masculine image, its disinhibiting qualities and especially because it can relieve unpleasant feelings—will become more and more important in our society. Increasing anomie, increasing alienation and frustration will enlarge the demand for alcohol and other drugs. It will not be difficult therefore to predict a rise in the incidence of drunken driving in future; indeed it will be very hard to stop this development.

What can we do to combat drunken driving? In the preceding paragraphs we have seen that punishment is not very effective. It does not make much difference whether subjects are sentenced to imprisonment or only to a fine. Even disqualification from driving does not help. Two reasons could be advanced for the ineffectiveness of these penal sanctions.

1. As long as the chance of being caught for drunken driving is very low, we can hardly expect our penal sanctions to have any deterrent power. We know from our research that drunken drivers are not very worried about the activities of the police. According to them being detected is just bad luck.
2. Many subjects convicted for drunken driving are problem drivers. They need alcohol to function more effectively and alcohol is like a medicine to them. As our present system of sanctions leaves these problems untouched we should not be surprised to find a high reconviction rate among drunken drivers.

In order to make our penal system more effective we should like to propose the following:

1. A more systematic police control. Every driver should know that driving under the influence of alcohol is a risky affair, not only for the traffic in general, but especially for him.
2. In every case of drunken driving a report on the suspect should be presented to the court giving inter alia information about drinking habits, family life, job history and the general way of life of the suspect. Special attention should be paid to whether there are any problems which might explain the drinking behaviour of the suspect.
3. If any problems are present the Court should refer the drunken driver to institutes, offices or clinics which are specially suited for dealing with matters of this kind. In case of alcoholism this should be a consultation office for alcoholics, in case of marriage problems reference should be made to institutions for family and marriage problems etc. Only if we succeed in tackling these underlying problems can we hope to combat recidivism among drunken drivers.
4. As we have seen, subjects convicted for drunken driving (whether sober or not) are more involved in traffic accidents and commit significantly more traffic offences than subjects in a matched control group who have never been convicted for driving under the influence of alcohol. It might therefore be worthwhile to have them pass a driving test. If their performance is unsatisfactory the court should require them to go to a driving school or clinic.
5. There should be no unconditional withdrawal of a driving licence. Offenders should have the right to use a car for their profession. In Holland I have proposed a blue driving licence which allows the owner to drive his car professionally, but not for leisure

activities. For most drivers this would mean that they are allowed to drive in the day-time, but not in the evening, at night or during the weekends. In case of contempt of court there should be no unconditional withdrawal of the licence. Instead I should like to propose that the car should be confiscated, the subject be told of this possibility in advance.

In order to facilitate police control it might be efficient to give the cars of subjects convicted for drunken driving a special registration plate.

6. All subjects convicted for drunken driving should get a substantial fine. This money should be used for constructing and applying treatment programs.

It seems to me important to change the way in which we generally inform people about alcohol. The purpose of this information usually is to make drivers refrain from drinking only if they have to drive, but it is undeniable that many drivers start driving after drinking. We should (although reluctantly) accept this reality and look for campaigns to minimize the risks. This means that our alcohol information should not be so one-sided as it is nowadays. It should also contain information about for example the alcohol metabolism, the effect of an empty stomach, about the effect of fatigue, about the effect of "long" versus "short" drinks. We should allow the driver to profit from this information, even though this might encourage a certain amount of drinking before driving; at least it would most likely be safe, moderate drinking in contrast to the extremes that now occur. If we accept the reality that an alcohol-free traffic is an utopia, it might be safer to promote drinking intelligently than to insist on abstinence.

It should be stressed, however, that this alcohol information would not help our problem drinkers; they will continue drinking excessively, unless we succeed in solving their problems.

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Summary in Swedish

All forskning visar, att rattfylleristerna är personer med överdrivna dryckesvanor. Mer än hälften av alla rattfyllerister synes således vara alkoholister eller personer i ett förstadium till alkoholism. De är väsentligt mera inblandade i trafikolyckor och begår ett större antal både allvarliga och mindre allvarliga trafikbrott än normalbilisten. Anmärkningsvärt är också att de begår ett förhållandevis stort antal icke trafikbrott, särskilt förmögenhetsbrott.

Även vad gäller personlighetsdrag kan man finna skillnader mellan rattfyllerister och normalbilister. Det har således visat sig att rattfyllerister är mera nevrotiska mer impulsiva, mindre socialiserade, de visar en större benägenhet att ta risker och att generalisera och slutligen visar de mindre ansvarskänsla. Rattfylleristen har vidare mycket ofta ett otillfredsställande familjeliv.

Vad gäller möjligheterna att förutse återfall i rattfylleri synes särskilt åldern samt tidigare brottslighet vara av stor betydelse. Förare i en ålder mellan 30—45 år synes vara benägna att återfalla i rattfylleri.

Risken för återfall är emellertid störst om rattfylleristen tidigare gjort sig skyldig till brott. Detta gäller oavsett om det tidigare brottet utgjorts av rattfylleri, annat allvarligt trafikbrott eller annat brott än trafikbrott.

Återfallsprocenten

Buikhuisen har också undersökt om återfallsprocenten skiljer sig i de fall där beslut meddelats om ovillkorligt frihetsstraff, villkorligt frihetsstraff, bötesstraff och körkortsåterkallelse eller beslut om körkortsåterkallelse ej meddelats. I likhet med andra forskare har emellertid Buikhuisen funnit att återfallsprocenten närmar sig 40 oberoende av vilken sanktion som använts. Det har också visat sig att detta inte kan förklaras av att de grupper som får olika påföljder också är olika sammansatta.

Det uttalas sammanfattningsvis att både alkohol och motorfordon spelar en betydande roll i vårt samhälle och sannolikt kommer att spela en allt större roll. Man torde därför böra räkna med ett allt större antal rattfyllerister, under alla förhållanden kommer det att bli mycket svårt att stoppa en sådan utveckling. Detta inte minst därför att samhällsingripandena mot rattfylleri visat sig så föga effektiva. Buikhuisen anger två huvudskäl för detta. För det första den bristfälliga trafikövervakningen och för det andra det förhållandet att rattfylleristerna har alkoholproblem och att nuvarande sanktioner inte angriper detta problem. Det kan nämnas att Buikhuisen synes räkna med att mellan en och två procent av rattfylleribrotten upptäcks.

Förslag till åtgärder

För att bota bristerna i nuvarande sanktionssystem föreslår Buikhuisen därför en effektivare trafikövervakning. Det förordas också att vi försöker angripa de bakomliggande orsakerna till rattfylleristens alkoholproblem och familjesvårigheter. En närmare undersökning av trafikskunnandet bör också ske. Vidare förordar Buikhuisen att vi i fortsättningen inte skall använda oss av ovillkorliga körkortsåterkallelser vid rattfylleri. Trafikanten bör ha rätt att använda bilen i yrket men inte under fritiden. Om trafikanten bryter mot detta bör bilen konfiskeras. För att göra övervakningen lättare bör dessa förare ha särskilda registreringsskyltar. Frihetsstraff bör inte användas vid rattfylleri men däremot kraftiga bötesstraff.

Slutligen förordas en omläggning av informationen om problemet alkohol och trafik. Vi bör således, även om det bör ske med försiktighet, acceptera det förhållandet att många förare kommer att köra bil även efter att de druckit alkohol. Informationen bör därför inte som f.n. syfta till total avhållsamhet utan lämna upplysning om skillnaden mellan olika alkoholdrycker, om följden av att dricka alkohol med eller utan samband med mat etc.

Opposition to the papers of Terence Willett and Wouter Buikhuizen

Norman Bishop:

Both Willett and Buikhuizen put forward a number of characteristics which they suggest may distinguish driving offenders from non-delinquent drivers. Both admit that a good deal of their evidence is not very "hard" though in the first part of his paper Willett makes a number of interesting speculations—they are no more—on the basis of certain general sociological concepts. Later, however, Willett comes as he says with some relief to recent research on the effects and effectiveness of sentencing of motoring offenders. The essential value therefore of Willett's paper in its first part, is that it is pointing to the absence of sufficiently rigorous studies and it directs attention to a number of desirable research areas. At this stage it is clearly unwise to use it as a basis for constructing policy.

Buikhuizen also admits that the research studies which he reports have serious weaknesses. They are few in number, classify characteristics of drunken drivers by reference to somewhat vague psychiatric terms and too seldom to valid psychological test measurements. They have in addition other methodological weaknesses e.g. they do not always use matched control groups, do not state to what extent the drunken driver sample is or is estimated to be representative of drunken drivers as a whole.

Both Willett and Buikhuizen fail to mention one other problem in methodology which I believe to be of some importance. In criminology generally we have seen for many years, great effort expended on a hunt for characteristics which will reliably distinguish criminals from non-criminals (I speak here of crime in general and not motoring offences in particular). It is only recently that we have begun to see which characteristics have been deduced from a detected, caught,

prosecuted and punished sample of offenders. To some extent recent studies of hidden delinquency have as they have developed, suggested that the earlier profiles of offenders which we have come to accept have been distorted. In the case of offenders generally, a major distortion has been an over-emphasis of personal psychopathology. More recently still sociological studies have taken the process further not only by examining hidden criminality but by looking closer at the working of the criminal justice system itself. Studies of this kind show that the system of control does not function impartially, but differentially. This adds the possibility of further bias to results obtained, and has led one sociologist (Denis Chapman—"Sociology and the Stereotype of the Criminal") to suggest that the hunt for specific characteristics is a chimera. Now it is widely recognised that the amount of hidden criminality in road traffic offences is very high. It is not only that detection rates are low unless there is bodily damage or a severe accident, but even after detection only some persons are prosecuted, and only some persons prosecuted are sentenced. Willett himself gives excellent examples of police discrimination in checking on drivers, and then shows how those "picked on" when "picked up" are precisely those most likely to plead guilty and fail to use legal help.

Convicted offenders are therefore, when the huge dark figure and differential operation of the criminal justice system are taken into account, a biased sample. Nor is this all. Given this methodological problem it would seem that unless special care is taken, any control group used for comparison may itself be subject to serious bias because it may contain a substantial proportion of uncaught, undealt-with offenders, not yet officially classified as such. I should perhaps make clear here

that these observations are more likely I think, to be relevant to a numerous large group of persons we know at the extreme end of a continuum as offenders or as deviants with major personal disorders. Thus my argument is perhaps not applicable to certain kinds of drunken drivers but could be relevant to more ordinary motoring offenders. Supporting evidence for this might be seen in Tallqvist's paper where he shows how the rigorous removal from the road of those with violations and accidents, from the driving population would have only a small effect upon general accident rates.

I now want to say something about the typology of driving offenders put forward by Willett. His proposed typology is based on offences and the frequency of their commission. Such a typology could be of use to the courts in choosing sanctions and the practitioners concerned with treatment. They might be useful to police or prosecutors in deciding prosecution policy, and it is clear that the points system is constructed on this basis. But given the fact of the sizeable dark figure for undetected offences one might ask if typology based on offences and frequency of commission is not a very insecurely based typology. Mannheim and Wilkins in their well-known prediction study on the effects of treatment applied to a sample of young men sentenced to Borstal training in England were able to administer statistically associated factors which had relevance for policy and treatment decision-making. It would seem at least worth attempting something similar in respect of convicting motoring offenders. Such predictive factors might assist us more in the construction of typologies.

Willett suggests—I think convincingly—that low rates of detection do much to bring the law into disrepute and lead to its non-observance. It would certainly seem desirable to attempt to detect, but not necessarily punish, more. Certainty of detection has long been considered as having a greater general effect than occasional severe punishment.

Hans Klette:

The road traffic system is only one subdivision of the social system. It consists of the interaction between the driver, the vehicle and the environment. The function of the road traffic system is to produce communication (transportation) and recreation. The most important demands of the system are that it functions safely and efficiently, i.e. that it provides transportation which is obtainable, comfortable, inexpensive and rapid. These aims and demands are in conflict within the current road traffic system. In fact, the current traffic system is in conflict with the aims and the demands of many other subdivisions of the social system.

This broader outlook has particular relevance to the driver's situation in the social system and has the greatest importance when one wishes to study the criminological, psychological and sociological factors in road traffic offences. If the criteria for the most acceptable behaviour in one of the other sub-systems do not match those of the road traffic system, then accidents and offences may occur. This is especially true if an immediate inconvenience is caused by meeting the criteria of the road traffic system.

The most important area of social control of the road traffic system from the point of traffic safety is the interaction between the driver and his environment. This is a complex issue of the driver's interaction with the physical environment, the legal environment and the social environment. I will confine my remarks to the second and third of the crucial areas.

The theoretical frame for research on social control in this area can be summarized in the following conceptual scheme which incorporates the most important factors mentioned by Buikhuisen and Willett but considers other variables as well. The purpose of the scheme is to clarify the research problem with reference to the literature of social control and empirical observations derived from many descriptive studies.

Driving behavior

The dependent variable is the driving behavior. The papers of Buikhuisen and Willett require supplementation at three points.

(1). In relation to traffic offences the driving behavior can be categorized as non-offences, unregistered offences and registered offences. It is imperative that the existence of the second category be recognized. The third category of registered offences entails an selection by the police, prosecutors and courts among all offences that have occurred. Buikhuisen is only concerned with this selected group and this is essentially true of Willett as well. There are no data available in Europe on unregistered traffic offences beyond Klette's material on drunken driving in Sweden.

(2). Traffic offences can be divided in two different groups: serious offences and less serious offences or minor regulatory offences (violations). In the first group the correlation with accidents is relatively much higher than in the second. Among the serious traffic offences one can distinguish between two broad categories. The first category includes careless-dangerous driving and drunken driving. These types of behavior can be called serious driving offences since they primarily involve the manner in which a vehicle is driven on the road. These offences have a very high correlation with traffic accidents. Careless-dangerous driving nearly allways means that an accident has occurred; in the cases of drunken driving an accident has often occurred or the risk for an accident has been very high. In the second category of serious traffic offences are driving while disqualified and hit-and-run driving. These actions can be called serious dishonest offences since they primarily involve some calculated dishonesty and are not connected primarily with the way in which a vehicle is driven. Driving while disqualified has a relatively low correlation with traffic accidents. Hit-and-run driving is assigned to the second category, because

the accident has already occurred but has not been reported. In many cases this offence reflects panic and fear rather than calculation, but the element of dishonesty in failing to report the accident is the dominant consideration. From a strict traffic safety point of view it is most important to concentrate on the first category of driving offences, careless—dangerous driving and drunken driving.

(3). In relation to the driving behavior it is important to distinguish between the quantitative aspect of frequency and the qualitative aspect of seriousness. Regarding careless-dangerous driving the seriousness can be measured in terms of the types of accidents resulting in property damage, injury or death. In the case of drunken driving the blood alcohol concentration can be used to differentiate the degree of seriousness. The quantitative and qualitative aspects have been little discussed in the two papers.

Buikhuisen's treatment of the distribution of blood alcohol concentrations among registered drunken drivers indicates an average of around 1.8 per mill. As a person with 1.5 per mill or more is considered to be an alcoholic it is not surprising that he found alcohol problems in this highly selected group. For the practical purpose of treating the drunken drivers in Holland this selection is of no disadvantage. But for the general theoretical question of social control and prevention of traffic offences the process by which the registered offenders are selected is of greatest concern.

I will only comment a few of the most important independent and intervening variables in the conceptual scheme.

Motivation

The factor of motivation is assumed to be the most important in the social control system. Buikhuisen has not discussed this factor at all and Willett has only considered it indirectly. In commenting upon this factor in relation to drinking and driving it should be recognized that what is said has relevance to driving in general.

Motivation can be divided roughly into the search for reward or pleasure or the avoidance of punishment or unpleasantness. In seeking to induce the driver not to operate a vehicle under the influence of alcohol one must be aware of the motivational factor. Either one must stop the drinking before driving or the driving after drinking. That is why it is relevant to raise the question, what rewards does a person receive in drinking and driving? What is the motivation for drinking and driving?

Motivationally, driving fulfils a limited range of needs. Its principal function is to provide a change of location and much driving serves only this function. But driving can also satisfy other auxiliary demands. These include the important psychological function of providing a feeling of power and status discussed by Willett and the equally important demand for a substitute room which has special relevance for the teenagers who have no place at home or elsewhere where they can meet or be alone with their friends. It is very difficult to find adequate reward for not driving. The discovery of alternatives to basic satisfactions provided by driving might include free public transportation, residential places for teenagers and the conveyance of feeling of power and status through other means.

The motivation for drinking can be traced either to the fulfilment of individual needs or to social influences. Most drinking is closely associated with social functions and drinking to fulfil an individual need is usually additional to this rather than an alternative to it. For an alcohol-dependent person the rewards for not drinking will be in direct opposition to the rewards for drinking. Rewards for drinking among non-alcohol-dependent persons must be seen in relation to rewards relating to self-approval, approval by primary and secondary groups, satisfaction of taste, relief of tension, etc. The rewards for drinking seems to be more compelling among many drivers than the rewards for not drinking, or better expressed, the existence of rewards for not

drinking has not been made clear. This is especially true in reference to driving after drinking. Here education and information is of greatest importance although this factor has not been sufficiently appreciated in Europe.

Education and information

In order to change the drinking-driving behavior of the general population the following minimum information should be distributed in the educational system (the upper classes of general schools and driving schools) and through mass media: (1) Alcohol occurs too often in traffic accidents e.g., in 25—50% of traffic fatalities and in less percentages in other accidents. (2) The risk of involvement in an accident begins around 0.5 per mill and increases steadily to an especially high point around and over 1.0 per mill. (3) Alcohol decreases the efficiency of all functions necessary to driving, sight, hearing, reactions, concentration. The most dangerous factor is that one's judgement decreases at the same time as one's confidence in one's own capability increases. The driver under the influence of alcohol is not conscious about the degree of intoxication and perceives the traffic situation in an abnormal way: (4) It is best not to combine drinking and driving; but this is especially necessary for persons inexperienced in driving and inexperienced in drinking, and all persons with medical conditions and those who have been taking medications. (5) If other groups must combine drinking and driving a reasonable guide is never to pass the threshold level of 0.5 per mill. The blood alcohol level depends primarily on the amount and kind of alcohol consumed, intake with or without food, and body weight. On the average, a man of 70 kg. can drink 5 cl of whiskey, or 2 glasses (20 cl) of wine or 2 bottles of beer without passing the 0.5 per mill. (6) The approximate combustion of alcohol per hour is 0.15 per mill or 2—2.5 cl of whiskey, or 1 glass (10 cl) of wine or 1 bottle of beer.

Traffic supervision and risk of detection

According to many studies from different countries it seems that increased traffic supervision decreases the number of accidents and certain traffic violations. This seems to be the case when the risk of detection is raised above a certain limit. The important factor is not the objective risk of detection but the perceived or subjective risk of detection. This factor has been studied by Klette in Sweden. The average driver in a highly urbanized area perceived the risk as follows: speeding 30 km/hour over the limit 1—5%, drunken driving without abnormal driving 0.5—1%, drunken driving in a reckless way 10%, driving without a licence in a normal way 1 per mill and driving against red light with intent endangering pedestrian safety 10%.

The risk of detection must be increased very significantly to have an effect upon the social control system. If we can't have many more policemen it may be necessary to have a group of traffic supervisors comparable to parking guards, whose sole duty will be to supervise moving traffic.

Social consequences of punishment and disqualification

The social consequences of the disqualification of the driving license has been studied in Sweden by Klette. About 30% of the disqualified drivers lost their jobs and about the same percentage lost good working opportunities and suffered a decrease in salary. The average loss of income because of disqualification was around SKr 5,000 per person and in cases of imprisonment 2.5 times less this amount. If the risk of detection for driving while disqualified can be raised, this may become the most effective deterrent of all legal actions. This measure is feasible with the assignment of certain police patrols or traffic supervisors to the supervision of the relatively small group of disqualified drivers.

Insurance

The insurance system offers one of the few mechanism for utilizing rewards in addition to penalties. It would be possible to reward the good drivers through lower insurance rates and to impose higher rates on dangerous drivers to a greater degree than is the case at present. A plan for built-in motivations towards responsible driving among new drivers could call for the introduction of a provisional licence. The licensing authorities in conjunction with the insurance companies could inform the newly licensed driver that he has only a provisional licence and that he must demonstrate safe driving before he can receive the final licence. The insurance companies could establish levels of driving skills, each defined by a special number of driving experiences under different conditions. After each level is reached without accidents or violations the premium could be lowered. This is but one area where motivation can be exploited to achieve traffic safety.

Hans Klette: A conceptual scheme for research on social control of serious driving offences in relation to the social environment and the legal environment

Education and information	Group norm	Drinking behavior	Public transportation	Insurance	Penal legislation and licensing legislation	Traffic supervision and risk of detection
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Independent variables

Motivation	Perception of group norm	Attitude and knowledge (perception of legislation)	Perception of public transportation	Perception of insurance	Perceived social consequences of punishment and disqualification	Perceived risk of detection
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Intervening variables

Sex	Age	Social class	Civil status	Profession	Personality	Exposure to risk
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The driving behavior (careless-dangerous-driving and drunken driving)		
Non-offences	Unregistered offences	Registered offences
frequency and seriousness		

Dependent variable

Summary by Gunnar Johansson of the discussions regarding The traffic offender from a criminal-psychological and sociological aspect

The rule system is an essential part of traffic. The present group standards are inadequate and obsolete. It is no longer fitting, for instance, to have a sporting attitude towards car driving.

In the case of other traffic systems, for instance aviation and railways, the system is entirely different and more strict. The pilots or engine drivers are not allowed to drive as they please. An analysis of the accidents determines the rules to be followed, as laid down, for instance, by the Aeronautics Board.

Why is it natural to use safety belts in airplanes but not in cars?

A greatly increased control of drivers and their behaviour must be established:

1. Mechanical control: Here electronic devices are recommended.
2. Traffic supervision by the police: The police have to take action immediately, to an entirely different extent than at present,

in the case of wrong behaviour in traffic. This can suitably be done by way of an admonition—which is not reported. A penalty is not necessarily required. The main aim should be to create proper traffic behaviour.

There are different opinions as to how far we should go in supervising drivers. Shall we in a general sense convert the car driver into an engine driver? Shall the police have charge of the traffic supervision or shall it be conducted by a staff not connected with our penal system?

Professor Buikhuisen has studied both sober and non-sober drivers' way of observing what happens in traffic. A film has shown that these two categories differ from one another in a drastic way. To sort out drivers on the basis of accidents is no practicable way towards safer traffic. In practically all traffic accidents it is "the normal car driver" who is involved.

Connection between penal code crimes and traffic offences

Ingmar Dureman, Tomas Berggren, Orvar Olsson

In a Report entitled "Trafiksäkerhet II" (Traffic Safety II), submitted by the Traffic Safety Investigation Committee appointed in 1953 (published in Stockholm 1957), one of the conclusions reached by the investigation committee was that "a person as a rule drives as he lives". This statement was based on a number of investigations reported or carried out. These have, as a rule, been effected by choosing a certain category of drivers and then out of this category selecting a group with extreme accident encumbrance (or guilty of many traffic offences) and a group not involved in any accidents (or not guilty of any traffic offences). The number of times both of these groups have appeared in different records (for instance the records of the Correctional Administration Board or the National Board of Excise) has subsequently been compared. It has then been found that the criminal encumbrance has been far more predominant in the group involved in accidents (or similar incidents) than in the comparative group. On the basis of these results the conclusion was drawn that it would be valuable from a traffic safety point of view if persons with criminal encumbrance could be prevented from appearing in traffic as motor vehicle drivers. The suggestion was therefore made inter alia that the obligation of the courts to submit information should be extended to include not only, as heretofore, traffic offences, drunkenness and unlawful disposal of motor vehicles, but also cover "assault and other crimes which imply violence against somebody. This type of crime discloses to a greater extent than any other type of criminality a rash state of mind on the part of the offender" "As regards other criminal offences, the investigation has found that it would suffice with a stipulation to the effect that the driving licence authorities shall be informed when

the person sentenced has committed a crime whereby he has shown such lack of consideration towards others and such other characteristics that there is reason to question his fitness as a driver of a vehicle requiring a driver's licence", (ibid. p. 264).

At present the following crimes are taken into consideration

- 3:1 murder
- 3:2 manslaughter
- 3:5 assault
- 3:6 grave assault
- 3:9 exposing others to danger
- 4:1 kidnapping
- 4:2 unlawful deprivation of liberty
- 4:3 putting someone in distress
- 4:4 unlawful coercion
- 4:5 unlawful threat
- 4:7 molestation
- 6:1 rape and sexual assault
- 6:2 carnal abuse by violence
- 8:3 robbery
- 8:6 aggravated robbery
- 13:1 arson
- 13:2 grave arson
- 13:3 devastation endangering the public
- 13:4 sabotage
- 13:5 gross sabotage
- 13:6 carelessness endangering the public
- 17:1 violence or threat against public servant
- 17:2 outrageous conduct towards public
- 17:4 violent resistance

The following are examples of crimes which are not taken into consideration

- 8:1 theft
- 8:4 grand larceny
- 9:1 fraud
- 9:3 grave fraud
- 9:4 extortion
- 9:5 usury
- 9:6 receiving stolen goods
- 10:1 embezzlement
- 10:3 gross embezzlement
- 10:4 unlawful disposal
- 12:1 inflicting damage
- 12:3 inflicting gross damage
- 14:1 document forgery
- 14:3 grave document forgery

The methods followed in the investigations and the proposal based thereon, as regards which crimes ought to be taken into consideration, are not entirely void of objections.

In the first place it appears questionable to select only crimes of violence and exclude other crime categories without examining more in detail whether this method is reasonable, particularly in view of the fact that certain results reported in the investigations appear to indicate that no great difference exists.

In the second place, the investigation has been based on an incorrect trend of connections, i.e. accident encumbrance (and traffic offences) in relation to criminality without any connection with traffic, whilst on the other hand the predictions so far as driving licence rulings are concerned are drawn up from crimes of violence to traffic behaviour.

The purpose of the following investigation is to attempt to illustrate, on the basis of the above critical viewpoints, the connection between various crimes under the Penal Code and traffic offences.

Population and selection

The investigation is based on information submitted by the courts and prosecutors to the crime register and relate to crimes for which such sanctions are imposed as are recorded in the general crime register. The Crime Register Office sends a copy of these details to the Central Bureau of Statistics and the selection made and samples referred to are based on this material.

The material comprises so-called "serious" crimes. As such the following are included:

a) Crimes for which such sanctions have been imposed as are recorded in the general crime register (i.e. imprisonment, suspended sentence, probation, youth imprisonment, internment, surrender for

care in accordance with the Mental Health Act, surrender for open psychiatric care and, if imprisonment is stipulated for the crime committed, surrender for care according to the Temperance Act.); b) Crimes for which the sentence imposed implies surrender for care in accordance with the Child Welfare Act in cases where the local Child Welfare Board has suggested that the minor shall be handed over for social care and—in the opinion of the court—sanctions should have been imposed which should be recorded in the crime register;

c) Crimes which the prosecutor has decided not to prosecute and—in the opinion of the prosecutor—sanctions should have been imposed which should be recorded in the crime register and when the decision to not prosecute has been established in accordance with the Act of the 20th March 1964 with special stipulations re juvenile offenders, the Act of the 29th April 1960 re society's care of youth and children (the Child Welfare Act, § 69) or, in the case of a person previously sentenced to youth imprisonment, RB 20:7, p. 2 (Code of Procedure).

Only 9 crimes of the same type have been included in one and the same sentence. The investigation comprises the years 1965–1968. The number of persons comprising the population is during 1965–1967 25,270, 28,684 and 31,483, respectively. The figures for 1968 are not available at the time this report is prepared. In these population figures the term "person" relates to sentence; he who during the year of report on several occasions has been found guilty of crime is counted as *one* person for each time he has been convicted of crime by a pronounced sentence or a decision of the prosecutor not to prosecute.

For other details regarding the size and composition of the population, we would refer to "Statistiska meddelanden", R 1967:29, R 1967:38 and R 1968:22. Corresponding publication of crimes committed during 1968 has not yet been issued.

Out of this population details were obtained regarding Swedish citizens born on the 20th of each month between 1901 and 1950. This selection thus came to comprise 2,269 persons, who with reference to their age are divided up as follows:

born yr:	no. ind.:
1901—10	69
1911—20	225
1921—30	346
1931—40	429
1941—50	1,200
<hr/>	
Total ind.	2,269

The median age is 28 years, i.e. persons born in 1941.

The individual connections arrived at are reported with the aid of percentages. In order to obtain an idea of the contribution to traffic offences by the various crime categories, a crime quota has been worked out as follows:

$$\text{crime quota} = \frac{\text{number of traffic offences committed by individuals of a certain crime category}}{\text{number of individuals included in this crime category}}$$

It should be pointed out that the reported connections do not constitute or express some kind of causal relationship, only coexistence.

Results

The connections arrived at are reported in table 1. This table also shows the number of Penal Code crimes committed by the different categories, the frequency of the various traffic offences and the crime quotas. Penal Code crimes for which fines and day-fines also may be imposed have not been included, nor such crimes as have been committed by only a few individuals included in the samples

(for instance murder, manslaughter, arson, sabotage). How the table should be read is shown by the following example:

In the case of each crime category, the first that is indicated is the total relationship for the entire period of time. The *assault* category thus indicates that of 181 persons (who during the years 1965—1968 were sentenced for 270 crimes referred to in 3:5 and/or 3:6) 54 or 30% have also been sentenced for traffic offences during the same period. The number of traffic offences committed by these 54 individuals was 184. Of these 184 traffic offences 5 or 2.7% relate to carelessness in traffic.

If the 184 traffic offences are put in relation to the 181 individuals sentenced for assault, this would give a crime quota of 1.02, which consequently expresses the number of traffic offences in relation to the number of individuals, i.e. the average number of traffic offences per individual.

In as much as the investigation to a certain extent touches on the effect of driving licence decisions which might lead to an increased frequency of driving without a licence, the above mentioned relationship has also been calculated after omission of such persons as have been guilty only of driving without a licence or doing so under grave circumstances (§ 3). In the assault category there then remains 39 persons guilty of traffic offences, which makes 22% of the total of 181.

The results presented in table 1 cover the total co-existence during the period in question, regardless of the sequence between the various types of crime. In cases where the traffic offences have preceded the Penal Code crimes, this has contributed to the connection arrived at. In order to find out to what extent this connection might have a different effect in case of different crime combinations, this connection has, as regards assault and fraud categories, been calculated in such cases where the traffic offences follow on Penal Code crimes (it has not been possible entirely to eliminate certain influence of cases with the reverse time

relation; when traffic offences and Penal Code crimes are included in the same sentence, the chronological order between these crimes cannot be established on the basis of the details collected; such details only make it possible to determine the chronological order between the different convictions). These connections are reported in table 2. Of 26 individuals, for instance, who were found guilty of assault in 1965, 10 of them or 38.5% were also sentenced for offences against TBL (Traffic Offence Act) in 1965 and/or 1966. The two-year period was chosen because of the fact that it covers the period which has to elapse after deprivation of the driver's licence in these cases, before a new licence may be issued.

A further analysis of our material makes it necessary to look into the age-distribution of the sample in relation to different categories of crime. Among persons born 1901—1950 in our total sample, 50% of the persons convicted were born 1942—1950. Therefore, in the following a bisection of the group will be made of "younger" (born 1942 or later) and "older" (born 1941 or earlier). Table 3 shows the distribution of traffic offences among these two age groups, as a supplement to table 1.

In order further to analyze the possible cumulative effect of crimes listed in the Penal Code (CPC) on proneness to repeat offences against the Road Traffic Offences Act (RTOA), subjects belonging to each offence category were subdivided into groups according to the number of sentences imposed from 1965 to 1968, inclusive. In table 4—6 this subdivision is put in relation to the number of traffic offences committed during the same period.

Discussion and conclusions

Certain characteristics in the material presented should be taken into consideration

in interpreting the connections or relations arrived at.

a) Due to the fact that only "grave" crimes have been subject to investigation, persons referred to in the samples might have committed crimes which have not been included. This is the case to the extent that they during the period involved, apart from being sentenced for "grave" crimes, also have been sentenced to fines or day-fines for traffic offences. The figures arrived at might thereby be presumed to be *lower* than the actual number.

b) For technical reasons in connection with the analysis, crimes of a less grave nature have in certain cases been excluded, as they have been deemed to have little or no effect on sanctions in comparison with other crimes. This circumstance might also be presumed to lead to an underestimation of the actual connections.

c) In as much as the sanctions vary in the case of different categories of crime, the exposure factor also varies. Due to the scale of penalties, for instance, and the frequency of conditional sentences, the actual possibility of committing traffic offences will vary between different types of crime. The difference in connections might consequently more or less be the result of differences in sanctions. (As an example may be mentioned that the number of conditional sentences or (alternatively) probation in the case of persons where assault (3:5) was the dominating crime was 227 out of 856 in 1965, whereas in the case of fraud (9:1) the corresponding figure was 742 out of 1020. In both cases the maximum and minimum sanctions are alike—2 years and one month, respectively).

d) The fact that certain crimes are taken into consideration might be presumed to affect the connection, as the purpose of taking such consideration is simply to try to prevent individuals guilty of crimes of violence to act as motor vehicle drivers. This ought consequently to lead to fewer traffic offences on the part of this cate-

gory than others. But if the inclination to drive without a driver's licence is equal within the different categories, the number of cases of driving without a permit or doing so under grave circumstances ought to show an increased in relation to other traffic offences. No such apparent difference between crimes taken into consideration and those not taken into consideration exists, however, according to the material submitted.

e) The connections reported refer to traffic offences according to the Traffic Offence Act, not breach of the Road Traffic Ordinance or traffic accidents.

The results obtained show that there does not appear to be any decided difference between the investigated crimes taken into consideration and those not taken into consideration so far as the connection with traffic offences is concerned. Of the largest category of the former type of crime, assault, the co-existence is 30%, and for the largest category of crimes not taken into consideration, i.e. theft and fraud, the figure is 30% and 25%, respectively. If persons guilty only of driving without a licence are excluded from the traffic offence group, the corresponding figures will be 22, 19 and 16%. The number of traffic offences per individual is somewhat higher in the case of assault (1.02) than in the case of the other two categories. In the total number of traffic offences, the percentage of those driving without a licence and the quota for such driving is least in the case of assault, which appears remarkable in view of the fact that this latter crime is taken into consideration and consequently ought to increase the percentage.

The highest figure in the material, 76%, has been obtained for the category theft and grand larceny in the case of cars and/or motor-cycles. The high figure here depends to a very large extent on the high percentage of those driving without a licence. These constitute 80.3% of all traffic offences within this category of crime.

Crimes such as robbery, aggravated robbery, and rape, sexual assault, etc. which at present are taken into consideration, show a very small connection with traffic offences. Of 19 individuals in the robbery and aggravated robbery category only 1 has also been sentenced for traffic offences. The corresponding figures for rape, sexual assault and other crimes against morals are 32 and 2. Particularly in the case of these categories, however, the connection must be put in relation to the number of persons involved. As a general rule it may be said that the reliability of the values arrived at decreases in relation to the decreased number of individuals in the category concerned.

A possible explanation of the connections between crimes which are not taken into consideration and traffic offences is that this connection to a large extent can be caused by individuals who also have been sentenced for other crimes taken into consideration. To probe into this possibility individuals sentenced for assault and/or fraud have been subdivided into the following categories: a) individuals sentenced for assault but not for fraud; b) individuals sentenced for fraud but not for assault; c) individuals sentenced for assault and fraud. In table 7 these categories are put in relation to offences against the Road Traffic Act. The table shows that the connections remain. Of 373 individuals sentenced for fraud (table 1) 20 or 5% have also been sentenced for assault. For the remaining 353 individuals in the fraud category the portion with RTO:s are 88 or 25% and for the remaining 161 individuals in the assault category 45 or 28%.

A corresponding subdivision of the embezzlement category shows the same trend. Of 79 individuals with embezzlement only 3 are also sentenced for assault.

As regards the figures in table 2 it may be said that the main impression from table 1 remains. Thus there is no essential difference between assault and fraud as regards co-existence of traffic offences. The variation recorded between

the different years in each category may be presumed to depend on the reduced number of individuals.

When persons guilty of driving without a licence or doing so under grave circumstances are excluded, the co-existence shows a considerable decrease in the case of all categories. This situation should be taken into consideration when estimating the effect of driving licence withdrawal. The effect that such consideration might have with reference to traffic safety is rather related to this lower co-existence figure than to such as also include individuals guilty only of driving without a licence.

An analysis of table 2 shows in every category small differences between the "older" and "younger" criminals. The "younger" have a somewhat higher connection with traffic offences and somewhat higher crime quotas. Naturally table 3 should be interpreted with a certain restriction, due to the fact that the number of individuals in the various categories is comparatively small and varies for the different categories.

The interpretation of the results shown in table 4—6 must naturally be made with consideration taken to the number of persons appearing in the grand totals. However, the trends emerging when comparing the different crime categories are rather clear. A general trend is that when the number of CPS:s increases, the number of RTO:s also tends to increase. Compared to the assault category, there is probably a more obvious cumulative effect on the RTO:s in the categories of fraud and theft. Comparing "older" and "younger" groups in each category with regard to cumulative effects, there is a slight tendency towards steeper gradients in the younger groups. This is most easily seen in the fraud and theft categories. The difference between fraud and theft, on the one hand, and assault on the other, may to a certain extent depend on the fact that assault is recorded in the driving licence register. Another possible explanation of the difference might be that the

same factors are relevant here as those commented above in connection with the discussion about certain characteristics in the material of significance in interpreting the results arrived at (paragraph c).

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Mr. Cosmo of the Ministry of Justice has gone through the material before transcription and has given us many valuable viewpoints. For invaluable help in translating the manuscript we are in debt to Mrs Sigrid Berg.

Tab. 1 No. of individuals with crimes against the penal code (No. of crimes within parenthesis), correlation with RTO:s, distribution of RTO:s, % and crimequotients¹⁾

Crime category	No. of ind. 1965-1968	Portion with RTO:s		No. % Quotient	Distribution of RTO:s						Σ
		No.	%		Sec. 1, P. 1	Sec. 1, P. 2	Sec. 3	Sec. 4, P. 1	Sec. 4, P. 2	Sec. 5	
Assault	181 (270)	54	30	No.	5	2	114	37	21	5	184
				%	2.7	1.1	62.0	20.1	11.4	2.7	100
				Quotient	0.03	0.01	0.63	0.20	0.12	0.03	1.02
— § 3	181	39	22	No.	5	2	63	37	21	5	133
				Quotient	0.03	0.01	0.35	0.20	0.12	0.03	0.73
Violence or threat to public servant	81 (97)	33	41	No.	11	1	51	18	10	5	96
				%	11.0	1.0	53.0	19.0	10.0	8.0	100
				Quotient	0.14	0.01	0.63	0.22	0.12	0.06	1.19
— § 3	81	26	32	No.	11	1	32	18	10	5	77
				Quotient	0.14	0.01	0.40	0.22	0.12	0.06	0.95
Theft, grand theft (unauthorized takings and theft of motorcars)	38 (76)	29	76	No.	6	1	94	10	5	1	117
				%	5.1	0.8	80.3	8.5	4.3	0.8	100
				Quotient	0.16	0.03	2.47	0.26	0.13	0.03	3.08
— § 3	38	11	29	No.	6	1	43	10	5	1	66
				Quotient	0.16	0.03	1.13	0.26	0.13	0.03	1.74
Embezzlement, gross embezzlement	79 (176)	15	19	No.	6	—	24	11	3	6	50
				%	12.0	—	48.0	22.0	6.0	12.0	100
				Quotient	0.08	—	0.30	0.14	0.04	0.08	0.63
— § 3	79	13	18	No.	6	—	18	11	3	6	44
				Quotient	0.08	—	0.23	0.14	0.04	0.08	0.56
Theft, grand theft (burglary)	951 (3917)	284	30	No.	62	6	604	168	78	35	953
				%	6.5	0.6	63.4	17.6	8.2	3.7	100
				Quotient	0.07	0.006	0.64	0.16	0.08	0.04	1.00
— § 3	951	188	20	No.	62	6	334	168	78	35	683
				Quotient	0.07	0.006	0.35	0.18	0.08	0.04	0.72
Fraud, gross fraud	373 (1560)	97	26	No.	24	3	218	58	24	10	337
				%	6.4	0.8	64.7	17.2	7.1	3.0	100.6
				Quotient	0.06	0.008	0.58	0.16	0.06	0.03	0.9
— § 3	373	69	18	No.	24	3	141	58	24	10	260
				Quotient	0.06	0.008	0.38	0.16	0.06	0.03	0.70

1) Distribution of RTO:s. Sec. 1, P. 1: reckless or dangerous driving; Sec. 1, P. 2: "serious" reckless or dangerous driving; Sec. 3: driving while disqualified; Sec. 4, P. 1: driving under the influence of drink or drugs (≥ 1.5 per mille); Sec. 4, P. 2: driving under the influence of drink or drugs (0.5—1.5 per mille); Sec. 5: "hit- and run-driving".

Predictions from crimes against the penal code to offences against the RTOA.
Prediction periods are two years (1965—65, 66; 1966—66, 67; 1967—67, 68)

Tab. 2

Crime category	No. of subj. 1965	Portion with RTO:s		No. of subj. 1966	Portion with RTO:s		No. of subj. 1967	Portion with RTO:s		Distribution of RTO:s							Σ
		No.	%		No.	%		No.	%	Sec. 1, P. 1	Sec. 1, P. 2	Sec. 3	Sec. 4, P. 1	Sec. 4, P. 2	Sec. 5		
Assault	26	10	38							—	1	18	7	4	2	32	
— § 3	26	9	35							—	1	17	7	4	2	31	
Assault				45	15	33				—	—	36	8	5	—	49	
— § 3				45	9	20				—	—	10	8	5	—	23	
Assault							71	16	22	3	—	15	7	6	2	33	
— § 3							71	13	18	3	—	12	7	6	2	30	
Fraud	78	22	28							4	—	46	9	5	2	68	
— § 3	78	12	15							4	—	25	9	5	2	53	
Fraud				97	30	31				4	2	62	13	7	3	91	
— § 3				97	20	21				4	2	40	13	7	3	79	
Fraud							115	23	20	8	1	39	10	3	4	65	
— § 3							115	16	14	8	1	22	10	3	4	48	

A bisection in “younger” and “older” of the material presented in table 1

Tab. 3

Crime category		No. of subj. 1965-1968	Portion with RTO:s No. %		No. Quotient	Distribution of RTO:s							
						Sec. 1, P. 1	Sec. 1, P. 2	Sec. 3	Sec. 4, P. 1	Sec. 4, P. 2	Sec. 5	Σ	
Assault	“older”	75	23	31	No.	1	—	37	22	11	1	72	
					Quotient	0.01	—	0.49	0.29	0.15	0.01	0.96	
	“younger”	106	31	29	No.	4	2	77	15	10	4	112	
					Quotient	0.04	0.02	0.73	0.14	0.09	0.04	1.06	
Violence or treat to public servant	“older”	26	6	23	No.	3	—	9	5	2	1	21	
					Quotient	0.12	—	0.36	0.19	0.08	0.04	0.81	
	“younger”	55	27	49	No.	8	1	42	12	8	4	75	
					Quotient	0.15	0.02	0.76	0.22	0.15	0.08	1.36	
Theft, grand theft (unauthorized takings and theft of motor cars)	“older”	7	6	(86)	No.	1	—	18	2	1	1	23	
					Quotient	0.14	—	2.57	0.28	0.14	0.14	3.29	
	“younger”	31	23	74	No.	5	1	76	8	4	—	94	
					Quotient	0.16	0.03	2.45	0.26	0.13	—	3.03	
Theft, grand theft (burglary)	“older”	319	85	27	No.	10	—	159	83	26	6	284	
					Quotient	0.03	—	0.50	0.26	0.08	0.02	0.89	
	“younger”	632	199	31	No.	52	6	442	85	52	29	669	
					Quotient	0.08	0.01	0.70	0.13	0.08	0.05	1.06	
Embezzlement, gross embezzlement	“older”	64	11	17	No.	4	—	14	10	3	5	36	
					Quotient	0.06	—	0.22	0.16	0.05	0.08	0.56	
	“younger”	15	4	(27)	No.	2	—	10	1	—	1	14	
					Quotient	0.13	—	0.67	0.07	—	0.07	0.93	
Fraud, gross fraud	“older”	234	64	27	No.	11	1	122	44	15	—	198	
					Quotient	0.05	—	0.52	0.19	0.06	0.02	0.85	
	“younger”	139	33	24	No.	13	2	96	14	9	5	139	
					Quotient	0.09	0.01	0.69	0.1	0.07	0.04	1.00	

Tab. 4 Assault in relation to offences against the Road Traffic Act**a. all together**

No. of as- saults	No. of subj. with RTO:s					Portion with RTO:s	
	0	1-2	3-4	5-6	7-	No.	%
1	96	21	6	5	5	133	37 28
2	17	5	3	2	—	27	10 37
3-	14	4	1	—	2	21	7 33
Σ	127	30	10	7	7	181	54 30

b. older

No. of as- saults	No. of subj. with RTO:s					Portion with RTO:s	
	0	1-2	3-4	5-6	7-	No.	%
1	44	12	3	1	3	63	19 30
2	5	—	2	1	—	8	3 (38)
3-	3	1	—	—	—	4	1
Σ	52	13	5	2	3	75	23 31

d. all together disregarding "driving without licence"

No. of as- saults	No. of subj. with RTO:s					Portion with RTO:s	
	0	1-2	3-4	5-6	7-	No.	%
1	107	14	4	4	4	133	26 20
2	20	3	3	1	—	27	7 26
3-	15	4	1	—	1	21	6 29
Σ	142	21	8	5	5	181	39 22

c. younger

No. of as- saults	No. of subj. with RTO:s					Portion with RTO:s	
	0	1-2	3-4	5-6	7-	No.	%
1	52	9	3	4	2	70	18 26
2	12	5	1	1	—	19	7 37
3-	11	3	1	—	2	17	6 35
Σ	75	17	5	5	4	106	31 29

Tab. 5 Fraud and gross fraud in relation to offences against the Road Traffic Act**a. all together**

Fraud	No. of subj. with RTO:s					Portion with RTO:s	
	0	1-2	3-4	5-6	7-	No.	%
1-2	162	25	4	3	11	205	43 21
3-6	45	7	7	2	1	62	17 27
7-	69	19	7	5	6	106	37 35
Σ	276	51	18	10	18	373	97 26

b. older

Fraud	No. of subj. with RTO:s					Portion with RTO:s	
	0	1-2	3-4	5-6	7-	No.	%
1-2	89	19	2	2	5	117	28 24
3-6	31	6	5	1	1	44	13 30
7-	50	13	3	4	3	73	23 32
Σ	170	38	10	7	9	234	64 27

d. all together disregarding "driving without licence"

Fraud	No. of subj. with RTO:s					Portion with RTO:s	
	0	1-2	3-4	5-6	7-	No.	%
1-2	172	18	3	3	9	205	33 16
3-6	46	6	7	2	1	62	16 26
7-	86	8	5	2	5	106	20 19
Σ	304	32	15	7	15	373	69 18

c. younger

Fraud	No. of subj. with RTO:s					Portion with RTO:s	
	0	1-2	3-4	5-6	7-	No.	%
1-2	73	6	2	1	6	88	15 17
3-6	14	1	2	1	—	18	4 22
7-	19	6	4	1	3	33	14 42
Σ	106	13	8	3	9	139	33 24

6 Theft and grand theft in relation to offences against the Road Traffic Act

a. all together

Theft	No. of subj. with RTO:s						Portion with RTO:s	
	0	1-2	3-4	5-6	7-		No.	%
1-2	412	75	22	7	18	534	122	23
3-6	150	39	22	6	8	225	75	33
7-	105	40	24	15	8	192	87	45
Σ	667	154	68	28	34	951	284	30

b. older

Theft	No. of subj. with RTO:s						Portion with RTO:s	
	0	1-2	3-4	5-6	7-		No.	%
1-2	156	28	8	4	8	204	48	24
3-6	50	14	5	3	1	73	23	32
7-	28	7	4	2	1	42	14	33
Σ	234	49	17	9	10	319	85	27

d. all together disregarding "driving without licence"

Theft	No. of subj. with RTO:s						Portion with RTO:s	
	0	1-2	3-4	5-6	7-		No.	%
1-2	446	49	20	6	13	534	88	16
3-6	174	24	17	5	5	225	51	23
7-	143	17	16	10	6	192	49	26
Σ	763	90	53	21	24	951	188	20

c. younger

Theft	No. of subj. with RTO:s						Portion with RTO:s	
	0	1-2	3-4	5-6	7-		No.	%
1-2	256	47	14	3	10	330	74	22
3-6	100	25	17	3	7	152	52	34
7-	77	33	20	13	7	150	73	49
Σ	433	105	51	19	24	632	199	31

7 Assault and/or fraud in relation to offences against the Road Traffic Act

Crime category	No. of subj.	Portion with RTO:s	
		No.	%
Assault but not fraud	161	45	28
Fraud but not assault	353	88	25
Assault and fraud	20	9	45

Summary in Swedish

Människan kör i allmänhet som hon lever. Den slutsatsen kom 1953 års trafiksäkerhetsutredning till i sitt betänkande Trafiksäkerhet II (Stockholm 1957). Det har sedan i allmänhet uppfattats som ett axiom i trafiksäkerhetsdebatten. Professor Ingmar Dureman och två av hans medarbetare vid Uppsala universitets psykologiska institution, forskningsassistenterna Tomas Berggren och Orvar Olson har tagit upp de undersökningar som legat till grund för uttalandet till förnyad granskning.

Till grund för den s.k. Mossbergska utredningens uttalande låg ett antal refererade eller verkställda undersökningar. Dessa har som regel tillgått så, att man valt ut en viss kategori förare och sedan ur denna kategori tagit fram en grupp extremt olycksbelastade (eller trafikförseelsebelastade) och en grupp olycksfria (resp. fria från trafikförseelser). Dessa båda grupperns förekomst i olika register (t.ex. fängvårdsstyrelsens, kontrollstyrelsens) har sedan jämförts. Brottbelastningen har därvid visat sig vara långt mer markant i den olycksbelastade (eller motsvarande) gruppen än i jämförelsegruppen.

Utifrån dessa resultat drog man slutsatsen, att det ur trafiksäkerhetssynpunkt skulle vara värdefullt om individer med brottslig belastning kunde förhindras att uppträda som motorfordonsförare. Man föreslog därför bl.a. att domstolarna skulle underrätta körkortsmyndigheterna om brott, som innefattar våld mot person eller annan straffbelagd gärning varigenom ådagalagts sådan brist på hänsyn till andra eller sådana egenskaper i övrigt att enligt trafiksäkerhetsutredningen anledning finns att ifrågasätta förarens lämplighet som förare av körkortspliktigt fordon. Detta förslag har lett till att f.n. beaktas i körkortshänseende t.ex. misshandel och rån men i princip inte stöld och bedrägeri.

Är Mossbergs slutsatser vetenskapligt grundade?

Det tillvägagångssätt som f.n. tillämpas i praxis är enligt Dureman inte invändningsfritt. För det första framstår det som tvivelaktigt att endast välja ut våldsbrotten och utesluta övriga brottskategorier utan att närmare pröva det rimliga i detta förfaringsätt, speciellt med tanke på att vissa av de redovisade undersökningarna tycks peka på att ingen större skillnad föreligger.

För det andra har man utgått från fel sambandsriktning, dvs. olycksbelastning (och trafikförseelser) i förhållande till brottslighet utan trafikanknytning, medan däremot prediktionen när det gäller körkortsbesluten sker från brott till trafikbeteende. Man har här gjort sig skyldig till ett elementärt statistiskt felslut.

Vad visar den nu genomförda undersökningen?

Till grund för Duremans undersökning ligger de uppgifter som domstolar och åklagare översänder till kriminalregistret och avser brott vilka föranleder en påföljd, som antecknas i det allmänna kriminalregistret. Urvalet kom att omfatta 2 269 individer.

Det erhållna resultatet visar att någon avgörande skillnad mellan de undersökta f.n. av körkortsmyndigheten beaktade resp. icke beaktade brotten beträffande sambandet med trafikbrott inte tycks föreligga. Nuvarande praxis vid körkortsåterkallelse synes således felaktig. För den största kategorin av beaktade brott, misshandel, är samförekomsten 28 procent, för de största kategorierna av icke beaktade brott, dvs. stöld och bedrägeri 30 procent resp. 25 procent. Om individer med enbart olovlig körning på trafikbrottssidan tas bort blir motsvarande siffror 19, 19 och 16 procent. Antalet trafikbrott per individ är något högre för stöld (1,0) än för de båda övriga kategorierna. Den olovliga körningens andel av samtliga trafikbrott samt brottskvoten för olovlig

körning är lägst vid misshandel, vilket förefaller anmärkningsvärt med tanke på att beaktandet borde höja dessa tal.

Det högsta sambandet i materialet, 76 procent, har erhållits för kategorin stöld och grov stöld av bil och/eller mc. Det höga sambandet beror till mycket stor del på den höga andelen olovlig körning, som utgör 80,3 procent av samtliga trafikbrott inom denna brottskategori.

Summary by Gunnar Johansson of the discussions regarding The connection between penal code crimes and traffic offences

There is no scientific proof for the opinion that a driver who has committed acts of violence is more dangerous in traffic than other drivers. Thus from a scientific point of view we do not know enough to make an actual recommendation. When we stand in the position to say "yes" or "no" to some rather severe regulation, i.e. disqualification of a driver's licence, our standpoint is to say "no". We will not introduce or recommend such an action as to take away the licence for one group and not for the other. Therefore, even if some of the data we have discussed here and which Professor Dureman has brought us is not sufficiently confirmed, we think his main viewpoint is

well-grounded. In the Swedish law there is a regulation that the driving licence shall be revoked in all cases where a man is sentenced for specific types of crimes, for example crimes of violence, murder, etc. Our conclusion so far is that there is no reason for upholding this regulation, because so many of these people are not dangerous, perhaps most of them. We cannot, in other words, revoke the driver's licence for the entire group just because we have a few who are more dangerous than others. From a practical point of view we also know that it is not of any great importance whether we deprive these people of their driving licence because they drive without any licence anyway.

Diagnostic measures for driver selection

B. M. Biehl

Diagnostic methods

There are various ways of increasing road safety by taking the human factor into account and thereby reducing the number of accidents. One way e.g. is a greater consideration of human factors in a traffic environment. Appropriate education and propaganda would be another way. Assuming that the constant characteristics of a driver have an effect on the number of accidents or traffic offences he is likely to commit, then another way is possible, namely the selection of drivers by means of diagnostic measures. The basic problem of this type of driver selection has frequently been under discussion at an international level, most recently at the WHO symposium in Rome "Human factors in road accidents". There are two basic possibilities: The selection of particular good drivers (positive selection) or particular bad drivers (negative selection). The former method of selection is more appropriate for commercial purposes, where there may be more applicants than vacant positions. The latter method however is the only possible one for use as a preventive and legal measure. Thereby unfit persons could be excluded from participation in traffic.

The selection of potential drivers on a basis of legal measures presupposes the answers to the following question: What is gained by preventing certain people from driving?

Basically everyone has the right to drive a car. But in most countries there are certain conditions to be fulfilled before permission to drive motor vehicles can be given. Most often a driving licence is granted when the candidate passes a test of ability and knowledge only. He has to acquire control of the vehicle and know the most important traffic regulations. In most countries the driver may obtain a licence when these conditions are fulfilled; sometimes medical tests are includ-

ed. Other countries however hold the point of view that there are drivers who — because of certain personality characteristics — endanger both themselves and other road users. They require therefore that where there is no doubt of the presence of such characteristics the person concerned should not be allowed to acquire a driving licence.

Driver selection presupposes two factors:

- The definition of a criterion for potentially dangerous behaviour on the part of the driver.
- The knowledge of the personal characteristics with which this criterion is associated.

Let us now consider the criterion which provides us on the one hand with a meaningful measure of selection and on the other hand is associated with certain characteristics of the driver.

The essential criteria with which driver selection could be concerned are as follows:

1. the number of accidents
2. the number of traffic offences
3. certain features of driver behaviour (e.g. appropriate and inappropriate behaviour, near-accidents)
4. passing a driving test.

All four criteria could be used as a basis for selection. The corresponding ground for elimination of a driver would be:

1. because he would have more accidents than the average driver;
2. because he would commit more traffic offences than the average driver;
3. because his behaviour would be less appropriate and he would have more near-accidents than the average driver;
4. because he would not pass a driving test.

Selection before these events can occur is only possible, however, when diagnostic methods are available by means of which it can be predicted, to a defined level of probability, whether a particular person would fulfil one of the criteria. Only then do such methods of testing

have sufficient validity. This together with other factors such as objectivity and reliability is the most important premise of a good test.

To establish a high validity it is necessary to have both a good test and a good criterion. (This is one point which is frequently overlooked in driver selection).

Let us therefore examine the suggested criteria to see whether and to what extent they are appropriate for the establishment of test validity.

Accident rate

In the early days of traffic psychology, this appeared at first glance to be by far the most appropriate criterion. It seemed likely that some people, because of certain personality characteristics, would cause more accidents than others. But all attempts at a validation of this theory have shown disappointing results as indicated in the work of GOLDSTEIN (1962) and SCHUBERT (1965). The validity coefficients insofar as they are significant at all, tend to occur at a level which is insufficient for diagnostic use. MITTEN-ECKER et al. (1962) showed why the accident is not appropriate as a criterion for evaluation of driver behaviour and thereby for the evaluation of diagnostic measures. This is mainly due to the low reliability of the accident rate as a criterion. People, e.g., who have a certain number of accidents in a certain interval of time do not necessarily have the same number of accidents in the same interval of time again. The accident rate is therefore not a constant characteristic, at least not over a short interval of time. Good evidence for this is provided by a study made by the U.S. BUREAU OF PUBLIC ROADS in which the accident rate of 29,531 drivers over two three-year intervals was compared. The result was a correlation of 0.11. If all drivers who had at least one accident in the first three-year interval had been eliminated the number of accidents would have been reduced by 2.1 per cent. If the people who had

had two or more accidents had also been eliminated there would still have been only a decrease of accidents by four per cent (quoted from KLEBELSBERG, 1967). In a more recent study in which the accident rate of 7,841 Californian drivers were correlated over the same time intervals (two three-year periods), the correlation coefficient was 0.197 (BURG, 1968). The reason for the low reliability of an accident as a criterion can be seen in its complex origins which are to a large extent not influenced by any action of the driver.

Traffic offences

In contrast the rate of traffic offences suggests a more useful criterion. Traffic offences occur more frequently than accidents and they are less object to outside influences as had been shown in several experiments. There is also a relationship between accidents and traffic offences. (SCHUSTER & GUILFORD, 1961; BURG, 1968). Many accidents are preceded by an offence against the traffic regulations which in itself is not influenced by outside factors. Whether or not an offence leads to an accident is, however, dependent on many factors unconnected with the driver. A further advantage of this criterion is that, as is the case with accident rate, it is relatively easily to isolate.

Driver behaviour characteristics

An important feature of driver behaviour for selection is the rate of near accidents or critical incidents. Although this criterion has essential advantages over the accident rate it is not frequently used in validation studies. This is because of the difficulty of collecting the data, since it is not easy to observe large samples of drivers over a long period of time in order to isolate their near-accidents. Systematic observations of near-accidents is only possible with the help of technical aids.

Apart from the characteristics of near-accidents which occur relatively infrequently, the question of characteristics of normal driving behaviour also arises. Systematic observation is required by means of which groups of characteristics, e.g. risky—hesitant, appropriate—inappropriate behaviour can be identified. In this field two aspects must be differentiated: the safety and the “fluency” of driving.

These characteristics, on which diagnostic methods can also be validated, yield the most useful criteria. The correlation coefficients obtained from an analysis of these characteristics are markedly higher than those mentioned so far. But the correlation between driver behaviour characteristics and accidents are low, which is again evidence against the usefulness of the accident rate as a criterion.

In experiments in the Institute for Traffic Psychology in Vienna 300 drivers were observed by two observers in standardized conditions. 50 behaviour characteristics were noted. A factor analysis produced 6 relevant driver behaviour factors:

1. careful vs. careless driving,
2. driving speed,
3. well balanced driving (rough and jerky vs. smooth),
4. patient and tolerant attitude,
5. driving temper,
6. determined driving (active and resolute).

A test with the same drivers showed a relationship between the test results and the behaviour factors. (KLEBELSBERG, 1963; KALLINA, 1963; KLEBELSBERG et al., 1968).

The various attempts at developing behaviour characteristics as criteria are well summarized in the state of the art review of the OECD research group on driver behaviour (STEPHENS, 1969). They show that the general traffic adaptability of the driver is important also for the origin of traffic offences, near-accidents and accidents.

To sum up, it must be said that in spite

of many good beginnings the criterion problem has not yet been solved. This is also stated clearly by HÄKKINEN in the report of the WHO mentioned before when he says, “the absence of a reliable criterion continues to be the most difficult problem in the development of selection methods. This applies, of course, to all types of driver selection methods, including the physiological and medical ones, and not only to the psychological ones.” (WHO, 1967).

Are there any diagnostic methods, by means of which the previously mentioned criteria can be predicted with a sufficient degree of confidence? There are hardly any characteristics of drivers which have not been examined with this end in view. The first abilities to be examined were those which had the greatest face value for driving, e.g. reaction speed. Later other psychomotor capacities were examined and only then did the question of the significance of intellectual and personality factors for driver behaviour arise. All these experiments have been summarized in tabular form by GOLDSTEIN (1961) and SCHUBERT (1961). The results, mostly expressed as correlations between test results and criteria, are not sufficient for a basis of selection. Nevertheless I will digress for a short time on the subject of the significance of single characteristics of the driver for his driving behaviour.

They can be divided into the following areas:

1. medical conditions
2. psychomotor features
3. intelligence
4. personality characteristics
5. attitudes.

Research in these areas has shown the following results:

Medical conditions

The question of how far medical conditions can be said to be suitable predictors of driver behaviour is surprisingly seldom raised—at least in Europe. Medical exa-

minations are obligatory in many countries and usually the necessary conditions are exactly defined. Whether they are justified is seldom questioned, in view of the high face validity of these conditions, e.g. eye sight and epilepsy. In a document of the ECE in which this question was discussed by experts the following statement can be found: "Because of recent studies, a rather liberal view is now taken of the influence of medical conditions on road safety, both of the effect of chronic medical conditions in the causation of traffic accidents and the effect of medical conditions which may cause a sudden loss of consciousness while driving. Evidence that physical conditions are responsible for a small proportion of road traffic accidents, possibly of the order of one percent to one per thousand, has been obtained from Sweden (HERNER et al. 1966) and the United Kingdom (GRATTAN & JEFFCOATE, 1968)." (ECE, 1969).

Few experiments have been so closely concerned with the application of medical conditions for diagnostic purposes of driver selection as that of BURG (1968), who considered different variables of eye sight in a large sample of Californian drivers and the same time their accident and traffic offence rate. He found a useful association with driving only in the case of dynamic visual acuity which, however, is not tested elsewhere because there is no inexpensive and easily transportable apparatus for this test. On the other hand exact norms for the sense organs and other functions of the organisms have been found, although it had been demonstrated long ago that they have no prognostic value for accidents. For example, in some countries colour blind persons may not obtain a driving licence or only one with limited use, although so far no association between colour blindness and a driving criterion has been proved.

Psychomotor features

Among the psychological diagnostic methods relevant to driver selection the

psychomotor tests are of most interest; variables of reaction behaviour were the first to be used because of their apparent predictive capability for accidents. Reaction time, co-ordination, motor speed etc. were measured with complicated apparatus and set against the above mentioned criteria. The results are scanty. Significant relationship with driver behaviour were seldom demonstrated and in themselves are not sufficient for driver selection. But in this respect a basic problem for discussion arises: On the one hand it is obvious that extreme reaction times must have an effect on driver behaviour and the causes of accidents. It is equally clear that blind or debilitated people cannot drive cars. On the other hand a statistically significant relationship with driver behaviour can be demonstrated neither with reaction time, nor visual acuity, nor with intelligence. The explanation is as follows: There is no *linear* relationship between the named variables and the criteria but certain minimum conditions have to be fulfilled. That is, if the minimum standards of reaction speed, visual acuity and intelligence are reached, it is not important by how much they are exceeded. HÄKKINEN states the problem as follows: "There are numerous traits where the minimum level is necessary, but where once this level has been exceeded, the relationship breaks down." (HÄKKINEN, 1967). This holds true for many psychomotor characteristics. It also explains why there are no linear relationships. Moreover low psychomotor capabilities can be compensated for to a certain degree, for example, by increased attention. The isolated consideration of such variables is of little value in most cases. HOYOS (1965) therefore asks to "study the psychomotor capabilities and their relationship with superior variables".

Further criticism as concerns this kind of studies is that they are often not orientated to driving as such. The tests should be based on a careful task analysis. So far researchers have tended to use the trial and error method in which—

without any hypotheses—all kinds of variables were correlated with the criteria of driving behaviour. A task analysis has to be made in a very comprehensive manner. It should not split up a complex activity into individual elements. This would mean that the same mistake is made as before, when the methods with high face validity were chosen. The development of tasks analysis tests is one of the features of work of the already mentioned OECD research group (SPOERLI, 1969).

Intelligence

Intelligence was also studied as a predictor of driving behaviour. No linear relation has been found. Only the somewhat problematic criterion 'passing of driving test' showed a clearer relationship. There were no significant relations between the individual components of intelligence and driving behaviour. In diagnostic procedures intelligence is only tested to find the minimum limit.

Personality factors

Although some personality factors have been shown to be more relevant to driving behaviour than others, no overall relationship has been found so far between personality and driving behaviour. There are a great number of investigations dealing with this subject, in which a wide range of methods—from simple questionnaires to complicated projective tests—were applied. The results are differing greatly and cannot be discussed in detail. There is the additional difficulty that the results of such studies are very much dependent upon the cultural structure of the country in which the study is made. For example, very positive results were obtained by SHAW (1965) in a test similar to the TAT which was used with South African bus drivers. However this test could not be used with European drivers without some modifications. The same holds true for the frequently used personality questionnaires in the USA which meet with difficulties in Europe. Even those results which were positive in one

country have to be verified in another before using them for driver selection purposes.

In the investigation made by the Institute for Traffic Psychology in Vienna various personality factors from the 16-PF test by CATTELL showed high correlation with the factors of driving behaviour, especially the following factors: carefulness (M) that is practical, conventional, regulated by external realities; untroubled adequacy (O) that is placid, confident, secure; high self-concept control (Q_3) that is controlled, socially aware, and low ergic tension (Q_4) that is relaxed and unfrustrated.

To sum up one has to agree with HOYOS (1965): "It can be said that the knowledge concerning the relationship between driving behaviour and personality of the driver is limited and does not permit a very reliable prediction of his future behaviour in traffic".

Attitudes

A number of attitudes have also been studied with regard to their relationship with driving behaviour. There are two methodological problems:

1. Driver selection should be done before entry to a driving school. But attitudes towards driving, which might be useful for selection purposes, are likely to be developed after the subject has had some driving experience.
2. Attitude scales can be misleading. A subject taking part in a test the results of which will decide whether he will get a driving licence or not will be strongly motivated in a certain direction. He will therefore answer the questions in what he considers to be the appropriate way.

In most investigations the results of attitude tests with extreme groups are compared, for example, drivers with and without accidents, with greater or less driving experience, with and without licence revocation are compared. But the

very significant differences obtained in such comparisons are not sufficient to qualify these methods for driver selection. The area in which the two sets of results overlap is frequently so extensive that no exact classification can be made.

Apart from the diagnostic methods mentioned so far dealing with psychomotor capabilities, intelligence, personality and attitudes, additional studies were made to find the relation between human factors and driver behaviour.

In a number of studies biographical data were used as predictors. There are, e.g. significant relationships between traffic offences and other offences (Willet, 1967; BARMACK & PAYNE, 1961) or between family background and traffic behaviour (HOYOS, 1964). Moreover age and driving record data were used as predictors for future traffic behaviour (BURG, 1968). But all these data do not have sufficient validity for use in driver selection.

Diagnostic methods which can be used for negative driver selection for a whole population are not feasible since neither one single variable nor a whole test battery provides a reliable, linear predictor of driving behaviour. In addition the results would be unlikely to justify the expenses involved. This holds true not only for psychological but also for medical characteristics.

The situation is different for a selection restricted to extreme groups. In the case of obvious medical or psychic deficiencies these can be 'verified' with the aid of diagnostic measures. The question of certain minimum standards being reached can thereby be more easily solved. Their bearing on driving behaviour is obvious. Certain regulations in this field have been established in some countries, as for example in Austria, where aptitude tests are obligatory for certain groups of drivers of whose driving ability there is some doubt. Such groups are, for example, persons whose licences have been repeatedly withdrawn, persons with many traffic accidents offences or very old per-

sons who apply for their first driving licence. Only persons with very negative scores are rejected. Apart from the road safety aspect another advantage is gained by this type of selection in that some applicants for a driving licence—particularly the older people—are prevented from needlessly spending a large sum of money on driving lessons.

To sum up it can be said that driver selection based on medical and psychological predictors is justified in extreme cases only. In this way an important safety measure is achieved, both for those to whom the selection test applies and for other road users.

Summary

Driver selection is always based on a criterion. The following criteria are discussed:

1. *accident rate* (has a low degree of reliability on account of the complexity of the accident origins);
2. *traffic offences*: their relation to accidents on the one hand and diagnostic methods on the other hand are discussed;
3. *criteria of driving behaviour*
4. *passing of driving test*.

Diagnostic methods have to be proved with such criteria in order to find their validity. The predictor variables are discussed in the following grouping:

1. *medical criteria*
2. *psychomotor criteria*
3. *intelligence*
4. *personality factors*
5. *attitudes*

The validity of all methods is too low to justify systematic driver selection. These methods can, however, be applied to extreme cases from preselected groups.

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Summary in Swedish

Inledningsvis erinras om att det finns olika metoder att förbättra trafiksäkerheten genom att ta hänsyn till den mänskliga faktorn. Ett sätt är att ta större hänsyn till människan, då trafikmiljön utformas. Om vi antar att en förarens konstanta karakteristika har en betydelse för det antal trafikolyckor föraren kommer att bli inblandad i eller det antal trafikbrott som han kommer att begå, har vi här en annan möjlighet att förbättra trafiksäkerheten, nämligen genom urval av förare med hjälp av diagnostiska metoder.

Ett förarurval förutsätter två faktorer:

- a. En definition av kriterierna för potentiellt farligt uppträdande av förarna.
- b. Kännedom om de personlighetskarakteristika med vilka detta kriterium har samband.

Följande kriterier är tänkbara att använda vid urvalet:

1. antalet trafikolyckor
2. antalet trafikbrott
3. vissa egenskaper i trafikuppträdandet
4. genomgång av körprov

Biehl undersöker därefter dessa kriterier för att se om och i vilken utsträckning de är lämpade som testinstrument.

Antal trafikolyckor

I trafikpsykologiens begynnelse antog man att trafikolyckorna var det lämpligaste kriteriet. Det syntes troligt att några människor, på grund av vissa personlighetsdrag, skulle orsaka mer olyckor än andra. Alla försök att visa hållbarheten i denna teori har emellertid misslyckats. Människor som har en viss olycksfrekvens under en tidsperiod behöver inte nödvändigtvis ha samma olycksfrekvens under en påföljande tidsperiod. Olycksfrekvensen är därför inte en konstant karakteristika.

Trafikbrott

Däremot utgör frekvensen av trafikbrott ett mera användbart kriterium. Trafikbrott händer oftare än olyckor och de är mindre beroende av yttre påverkan. Det finns också ett samband mellan trafikolyckor och trafikbrott. Många trafikolyckor har föregåtts av ett trafikbrott. Om ett trafikbrott leder till en trafikolycka är emellertid samtidigt beroende av många faktorer som inte har något samband med föraren.

Karakteristika hos föraren

I fråga om medicinska förutsättningar för tillstånd att föra motorfordon framhåller Biehl att medicinska brister endast förorsakar en liten del — möjligen mellan en procent och en promille av alla olyckor. Under senare tid har man därför börjat inta en alltmera liberal syn på fråga om medicinska hinder för körkort.

Bland de psykomotoriska tester som använts har tester av reaktionstider tilldragit sig stort intresse. Man har härvid — liksom vad gäller synförmåga och intelligens — funnit att det inte finns något lineärt samband mellan dessa karakteristika och körsättet. Om vissa minimistandarder är uppnådda har det sedan inte någon betydelse hur mycket dessa standarder överskridits.

Vad gäller sambandet mellan personlighetsfaktorer och körsätt, uttalar Biehl, att sambandet är begränsat och därför inte ger utrymme för något säkrare antagande om förarens fortsatta uppträdande i trafiken. Till samma slutsats kommer Biehl i fråga om sambandet mellan attityder och trafikbeteende.

Slutligen behandlas sambandet mellan vissa biografiska data och trafikbeteendet. Det finns således ett signifikant samband såväl mellan allmänna brott och trafikbrott som mellan familjeförhållanden och trafikbeteende. Det finns också ett samband mellan ålder och trafikbeteende. Inte i något fall är emellertid dessa data av sådan art att de kan användas som urvalsinstrument.

Sammanfattningsvis uttalar Biehl att förarval baserat på medicinska eller psykologiska metoder är motiverat endast i extremfall och inte för hela befolkningen. Som exempel på fall där ett sådant förarurval är motiverat nämner Biehl personer som upprepade gånger haft sitt körkort återkallat, person med många trafikolyckor eller trafikbrott och personer som först vid hög ålder söker körkort.

Diagnostic difficulties in traffic safety

J. O. Brown

Introduction

I was very pleased to be asked to oppose Dr. Biehl's paper on 'Diagnostic Measures for Driver Selection', because I find his views completely unacceptable. That is, perhaps, what I would have liked to say, but of course it is not true. Dr. Biehl has given us a very good introduction to the problems raised by a diagnostic approach to traffic safety and I find myself in the difficult position of agreeing with most of the specific points he has made. My task of opposing the paper will therefore take the form of: (a) shifting the emphasis he has given some aspects of driver performance on to others which I consider to be more important, and (b) filling in what I think are one or two large gaps in the paper, to give it a much wider coverage.

Differing diagnostic and prognostic requirements of motor insurers and traffic authorities

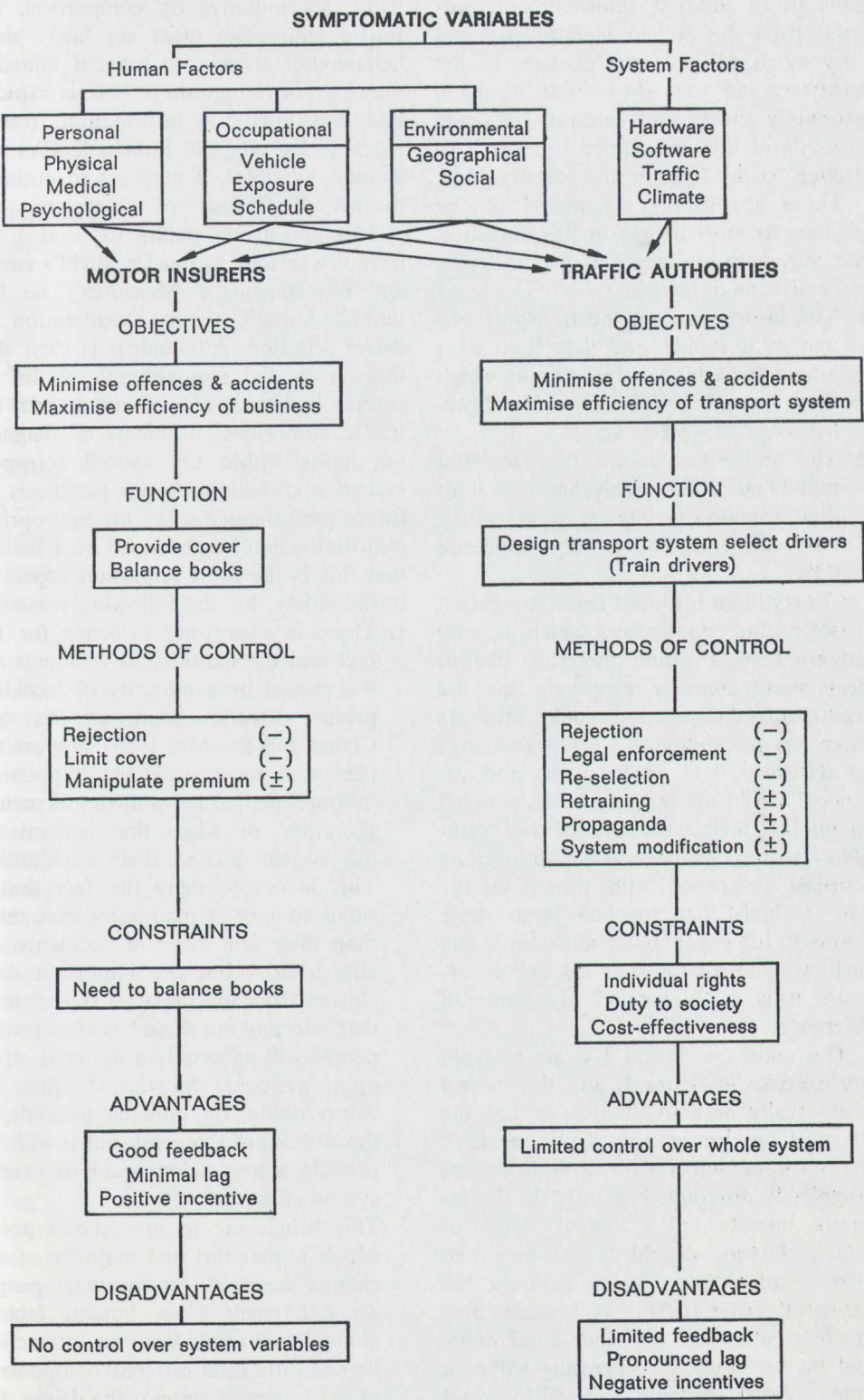
To begin with, I think we should ask ourselves what are the diagnostic and prognostic requirements of our joint organizers: the traffic authorities and the motor insurers. Neither in Dr. Biehl's paper, nor in the other pre-circulated reports that I have seen, has a very clear distinction been made between these two bodies. But it is not difficult to show that their operating conditions are very different, when it comes to the manipulation of traffic safety variables. I have tried to demonstrate this in figure 1.

I do not pretend that this gives a complete representation of all the operational

conditions and requirements, but it provides the necessary framework for the points I wish to make.

If we start by considering the variables which provide us with symptomatic information, these break down fairly clearly into those related to human factors and those related to system factors. The former are concerned firstly with a driver's personal characteristics, secondly with various aspects of his occupation and thirdly with various aspects of his social and geographical environment. System factors are concerned with roads and road furniture, rules and procedures, traffic flow, and the varying weather conditions. Operationally, the interests of our organizers diverge because of their differing objectives, which at first sight appear to be similar. On humane grounds, and from the point of view of cost effectiveness, both bodies must attempt to reduce accidents and offences. However, the insurers generally have no control over system factors. Their function is limited to the provision of cover and to balancing their books, which they must do by the use of human factors variables alone. The only control they can exert is over the individuals entry, or cost of entry, into the transport system. On the other hand, the authorities are charged with maximising the efficiency of the whole system, and they can and do make use of system factors, as well as human factors, in the controls they operate to meet their objectives. This means that the insurers, who are really constrained only to balance their books, have the advantage of operating within a virtually closed system in which there is fairly rapid, comprehensive, informational feedback, at an individual level, and in which they can offer positive incentives (i.e. 'no claims' bonuses) for above average performance. The authorities, who must balance their duty to minimise death and disability against the need to safeguard the rights of the individual, and who must also work to a budget, operate mainly with negative incentives, none of which offers

Tab. 1 Operational differences between motor insurers and traffic authorities



a direct financial reward for good behaviour. In addition, informational feedback from the system is imprecise and very much delayed, and changes to the hardware and software have to be made extremely slowly and carefully. A good example of this was the recent switch to driving on the right in this country.

These are simply statements of the obvious to most people in this audience, but they help me arrive at the following clear division of interests:

1. The insurers accept the transport system as it stands, and they limit their attention to human factors, on which they have very detailed and comprehensive statistical data.
2. The authorities accept the fact that individuals differ widely, and they limit their attention mainly to system factors, on which they have very imprecise data.

Clearly there is a need for co-operation between the two bodies, which is why we are here. I would therefore like to hear some concrete proposals for the forms this co-operation could take. Is there any possibility of a direct exchange of statistical data on accidents and offences? Could the insurers be encouraged to publish their very detailed and valuable statistical analyses in the appropriate journals concerned with traffic safety? Mr. Tallqvist has touched upon these points in his paper, but I must leave any further comment for later discussion, because it is really beyond my terms of reference.

The main conclusion I came to from my exercise in figure 1, and the subject I am really here to discuss, is that the diagnostic and prognostic requirements of the insurers and traffic authorities are completely different. Not only do the insurers operate on a limited range of human factors variables, but they can also afford to adopt more stringent behavioural criteria. This is because they are less concerned with individual rights and because they are operating within a more closed system, to which rapid

changes can be made if the criteria are badly set initially. By comparison, the traffic authorities must set fairly slack behavioural criteria, to prevent injustice, they cannot change these criteria rapidly, and they must use information from a much wider range of human factors and systems variables, if they are to optimise the overall efficiency of the system.

This conclusion points to what I believe is a serious gap in Dr. Biehl's coverage of 'Diagnostic Measures': he has limited himself to a consideration of driver selection. Although it is clear that this covers the requirements of the insurers, it leaves almost untouched the traffic authorities' problems of diagnosing faults within the overall transport system and making some prognosis of future performance when the appropriate remedial action has been taken. I believe that this is the most important aspect of traffic safety, for the following reasons:

1. There is a growing evidence for the fact that the majority of accidents are *not* caused by a minority of 'accident prone' drivers. Some experts (see Cohen and Preston, 1969) support the idea that most accidents happen to 'normal' people in moments of mental aberration, or when the demands of the system exceed their capabilities. This is not to deny the fact that a small number of road-users have more than their fair share of accidents, on any criteria, but the important conclusion from my previous statement is that selecting out these 'accident prone' people will have only a minimal effect upon accident statistics. It may be worth doing, on humane grounds, if the cost is not too great, but it will not provide a tremendous gain in overall system efficiency.
2. This brings me to my second point, which is that the vast majority of accidents incurred by 'normal' people do not result from human factors alone. They result from an interaction between the three different components of the transport system: the driver, the

vehicle and the environment. This has been shown by Mackay et al (1967) in a Table which Mr. Tallqvist (1969) has already reproduced for us in his paper. Because of its importance, I make no apologies for showing you this table again.

p. 1 Deficiencies seen as causal factors in traffic accidents (From Mackay 1967)

Suggested Causal Factor	% of Sample
Driver/Environment interaction	48.8
Driver/Vehicle/Environment interaction	16.4
Driver	12.4
Driver/Vehicle interaction	7.2
Vehicle	4.8
Vehicle/Environment interaction	4.8
Environment	4.2

It is clear that by far the most important area for diagnostic study is the driver/environment interaction. The interaction between driver, vehicle and environment is of next importance, with pure human factors following closely behind. The vehicle, and its interaction with the environment, contributes little to accident causation, which is a tribute to the acceptance of vehicle safety measures by the traffic authorities, the motor industry and the public. The environment appears to be relatively unimportant as an independent factor in accidents, as might be expected in a self-paced system.

For the remainder of my time I would therefore like to run quickly through the points raised in Dr. Biehl's paper, bearing in mind that our diagnoses must take system, as well as human factors, into account and that there can be three courses of action from any such diagnosis of accident causation:

1. Manipulation of the human element in the transport system.

2. Manipulation of the characteristics of vehicles driven within the system.
3. Manipulation of the environment within which the driver and the vehicle operate.

Diagnostic and prognostic data available within the transport system

Accident rate

Dr. Biehl and I agree on the limited use of accident data to diagnose causation and predict future involvement. If the main causal factor in accidents is the man/environment interaction, then this partly explains the poor reliability which has shown to exist between an individual's past accident record and his future involvement. People do frequently change their environments. An additional factor here is that involvement in an accident itself can modify future behaviour. However, although accidents are of little use in predicting an individual's future behaviour, except in extreme cases, they are frequently the only data from which the traffic authorities can diagnose faults in the overall system. Thus accidents do present valuable symptoms of error. There remains the problem of where to set the criterion, above which remedial action needs to be taken. One current method which appears to be gaining ground is to attach a cost to accidents, including loss of life, injury and damage to property, and then balance this against the cost of improving the system. There are opponents to the idea of costing human lives, but the method is the only logical way of assessing the relative costeffectiveness of different treatments, when one has to operate on a fixed budget.

Traffic offences

The same argument could be applied to the use of offences in diagnosing faults

within the transport system. It is very easy to impose rules on driver behaviour, but it must be remembered that drivers operate within a variety of other systems; occupational, social, geographical, and so on. If the criteria necessary to behave optimally in one of these other systems do not match those of the traffic system, then offences may occur, especially if immediate inconvenience is caused by meeting the traffic criteria. The cost of enforcing the traffic rules should therefore be carefully costed in these cases. For example: it may be cheaper in the long run to provide offstreet parking facilities than it is to enforce a 'no-waiting' rule. Here again, offences should be used firstly to diagnose faults in the *system*, rather than in the human operators. One major difficulty in using past offences to make a prognosis of an individual's future involvement in accidents is that offences vary so widely, from no-parking violations, which usually cause only inconvenience to other road-users, to 'blind' overtaking, which has a finite probability of resulting in an accident. It is by no means clear that there is a behavioural characteristic of 'risk-taking' underlying all these offences. For example: the woman who stops in a no-waiting area to do some quick shopping, because she has her baby in the car, is unlikely to indulge in risky overtaking, for the same reason. Measures of risk-taking can be useful for research, if they are restricted to specific forms of driving behaviour. For example: in one of my studies of prolonged driving (Brown et al, 1969) an increase in risky overtaking was the only measurable effect of this stress on driving skill. It follows that, prognostically, offences are useful only if they are categorised in relation to probability of accident causation, or if they can be balanced against some specific improvement in system design on a cost-effective basis.

Near accidents

Although near accidents have been used in the past to diagnose individual charac-

teristics of accident causation (see Potts, 1951) they are currently most often used to study system faults, or differences between various classes of vehicle or road-user. There has been an attempt to relate near-accidents to individual driving characteristics, in Israel (see Ben-David, 1968), but the method used is not generally acceptable, because it requires virtually a small army of spies to keep watch on selected drivers.

Driver behaviour characteristics

Diagnosing faults directly from a controlled study of overall driving characteristics is a more reliable and valid method of predicting system efficiency, as Dr. Biehl has said, because the data are collected from studies of real driving behaviour within the system. However, care is needed in interpreting these data. To take one of Dr. Biehl's examples, risky driving behaviour: obviously one must distinguish first between subjective and objective risk-taking. It is probably better to use different terms for these, as Professor Cohen and his colleagues did in their (1958) study of drinking and driving, to reserve the term 'risk-taking' for behaviour which involves embarking on a task without being certain of success. This is distinguished from 'incurring hazard', which means embarking on a task in which the performer will not invariably succeed. Clearly we must keep these categories separate in any diagnosis or prognosis, because of the different remedial actions needed. Individuals who frequently incur hazard may profit simply from driver training, or retraining, schemes to improve their skill. True risk-takers will require treatment which changes their attitudes towards the relative pay-offs associated with alternative forms of behaviour. The difficulty is that risk-taking and incurring hazard cannot be distinguished by observation on the road, or by the use of accident statistics. They must be isolated in controlled field studies of driving behaviour. To take another of Dr. Biehl's examples, hesitancy: clearly

we must separate cautious hesitancy from indecisive hesitancy. Unlike risk-taking, this distinction can often be made by observation, or even from detailed accident records.

There are obvious limits to the use of isolated behavioural measures like these in diagnostics and prognostics. It is far better to observe a wide range of behavioral characteristics on the road, and relate them to accident data, as Dr. Biehl himself has described, as I have reported in studies of prolonged driving (Brown, 1967), and as Quenault (1966, 1967, 1968a, 1968b, 1968c) has done at the British Road Research Laboratory. Quenault was able to divide his subjects into two basic groups, according to whether their behaviour was 'associated' or 'dissociated' with environmental events. As might be expected, the latter had a higher probability of becoming involved in an accident. However, both groups could be further sub-divided. The associated group could be classified as 'safe' drivers, who were relatively accident-free, and 'injudicious' drivers, whose manoeuvres were often unusual and produced a high number of near-accidents. The dissociated group could be classified as 'active' or 'passive' according to the frequency with which they performed certain specified manoeuvres. There are obvious associations between these behavioural categories and established measures of personality and temperament, as we will see later. The advantage of relating this underlying behaviour to driver characteristics is that it enables relative probabilities to be attached to the risks of accident involvement among the different groups. This Quenault has also done, in the research referred to earlier.

Diagnostic and prognostic value of individual behavioural characteristics

An individual's behavioural characteristics can be used for diagnostic and prognostic purposes, but the results are much less reliable. Indeed, there are some characteristics which were much studied in the past, such as simple reaction time, which are now seen to be valueless. Others may be used, with caution, to assess relative probabilities of accident involvement before driving begins. As Dr. Biehl has pointed out, this is an ideal requirement.

Medical factors

Some medical conditions will obviously increase the probability of accident. Others, which involve a chronic disability and for which the driver could compensate, such as loss of hearing, or of an eye, appear to be relatively unimportant. I will simply add to Dr. Biehl's list one source of accidents which many people agree will become more and more important. This is driving under the influence of drugs. Even for clinically prescribed drugs, too little is known about the relationships between their side-effects and traffic accidents. Research is in progress, for example at St. Bartholomew's Hospital in London, but it will be years before we have comprehensive data of any diagnostic value. The overall picture is complicated by the relatively unknown interaction effects between drugs, such as sedatives and alcohol. It is also relevant here to mention interactions between medical and system factors. One might predict that depressant drugs would have a greater effect on accident causation where driving conditions were monotonous, as on a motorway, than where the environment provided a higher level of stimulation.

Psychomotor factors

With regard to psychomotor performance, I agree with Dr. Biehl that this is of limited predictive value, above a certain minimum level of skill. It is probably of use only among selected groups of professional drivers in large transport systems, where the supply of potential drivers greatly exceeds the demand. There may be exceptions to this limitation. For example: in some of my own studies (unpublished), I have found a significant relationship between accident rates and steering control movements recorded during driver training. It is uncertain yet whether these variables are partially correlated with differences in personality, or whether the underlying behaviour is of a perceptual nature. In general, there is a growing tendency to reduce the importance of psychomotor performance for driving by improvements in system design, which it is irrelevant to discuss here.

Intelligence

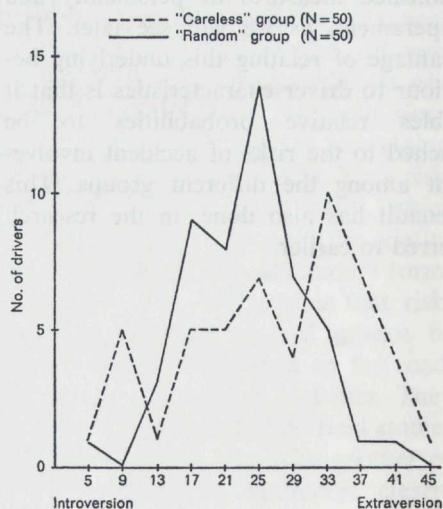
Intelligence is also of limited predictive value above a certain criterion (around I.Q. = 80, see Eysenck, 1960). I believe that paradoxically it may become more important, if we are not careful, as more and more constraints are placed upon the driver by the increasing volume of traffic. This is because in order to fit into the system he will be required to know, understand and remember an increasing number of complex rules, and interpret a wider variety of symbolic road signs, which Mackie (1966, 1967) has shown to be imperfectly understood, even now, by a large proportion of the population. It is the job of the traffic authorities to ensure that intelligence remains unimportant for accident causation.

Personality and temperament

Personality is an important characteristic which can be measured before driving begins. It can also be useful in a prognosis of accident involvement, on a quali-

tative, probabilistic basis. In the work of Quenault (1967), mentioned earlier, a group of convicted careless drivers was compared with a group selected at random. Both groups were given the Maudsley Personality Inventory, with results as shown in figure 2. Whereas the 'random' group's scores tended to be normally distributed, there was a distinct tendency for the 'careless' group's to be clustered more around the extremes of the introversion—extraversion continuum. Extraverts, in particular, were over-represented in the 'careless' group. These personality characteristics may underlie other diagnostic measures. For example: Munden (1967) has shown that the speed with which an individual drives relative to the traffic flow is related to accidents. Above average involvement in accidents is found for drivers who travel faster and for those who travel slower than the mean traffic speed. This may be unrelated to speed, as such. Both speed and accidents may depend upon certain basic personality characteristics. Personality differences may also provide Quenault's (1967) distinction between 'active' and 'passive' dissociated drivers, discussed earlier.

Personality differences between subjects selected at random and subjects who had been convicted of careless driving (After Quenault 1967)



Characteristics of aggression may also be used in diagnosis, as Parry (1969) has done in a British study. As might be expected, high aggression was confined mainly to young male adults; a fact which has been known to insurers and traffic authorities for many years. This problem appears insuperable, at least to the authorities, but it must be remembered that aggression produces accidents mainly where driving can be competitive. Some remedial action, e.g. one-way streets and dual carriageways, which reduces competitive driving, is therefore possible and desirable in reducing effects of aggression.

I regard these as being of value only for selecting out extreme offenders.

Summary

- A. Motor insurers are able to diagnose individual faults from their detailed statistical data, but they have no control over system design. Traffic authorities have control over system design, but their data on human factors are incomplete and imprecise. We must hope for more direct co-operation between these two bodies.
- B. Accidents, near accidents and offences provide unreliable data on an individual's contribution to accident causation, except for selected groups of professional drivers. They are most useful as symptoms of faults within the hardware and software of a given transport system.
- C. The criterion used with these system errors must be related specifically to the cost-effectiveness of the appropriate remedial measures.
- D. Observation of driver behaviour on the road provides the most reliable method of diagnosing individual faults, as well as system errors. Methods are being developed for relating different categories of driving behaviour to relative probabilities of becoming involved in a traffic accident.
- E. Relative probabilities of accident involvement can also be attached to certain behavioural characteristics before driver training begins, but this is less reliable. It is essential to use a battery of tests, and the method is currently of value only for selected groups of professional drivers. Here again, the criterion for acceptance or rejection of drivers will be based on cost-effectiveness.
- F. The major source of driving errors has been diagnosed as the interaction between man and his environment. The prognosis is that accidents will continue at the present high level unless more attention is given to shaping drivers' attitudes and unless system changes are made to reduce decision-making requirements and competition among all classes of road-user.

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Summary in Swedish

Allt flera fakta visar att majoriteten av trafikolyckorna inte orsakas av en liten minoritet olycksbenägna förare. De flesta olyckorna inträffar för normala människor och i ett ögonblick då trafiksystemets fordringar är större än trafikantens förmåga. Detta innebär inte att vi skall förneka det förhållandet att ett litet antal av motorfordonsförarna har ett förhållandevis stort antal olyckor. Samtidigt bör man ha det klart för sig att om vi tar bort dessa förare från trafiken så har det bara en mycket liten effekt på trafikolycksstatistiken. Det kan vara värt att på mänskliga grunder utesluta dessa förare från trafiksystemet om kostnaderna för att ta bort dem inte är för stora. Men det åstadkommer inte någon kraftig effektivitetsvinst för trafiksäkerheten.

Vad är orsaken till trafikolyckorna?

Vi måste beakta att den stora majoriteten olyckor inte orsakas av enbart den mänskliga faktorn. De är ett resultat av ett samspel mellan de tre olika komponenterna i trafiksystemet nämligen föraren — fordonet — trafikmiljön. Den mest väsentliga faktorn för trafiksäkerheten är här frågan om förhållandet mellan föraren och trafikmiljön. Den därefter vanligaste olycksorsaken är brister i samspelet mellan förare, fordon och trafikmiljö. Den mänskliga faktorn ensam kommer strax därefter men således först på tredje plats.

Vidare understryker doktor Brown att olyckor eller trafikbrott inte utgör något helt tillförlitligt instrument för att bestämma olika trafikanters bidrag till trafikolyckorna. Endast som ett grovt instrument och för utvalda grupper av förare kan detta urvalsinstrument användas. Däremot kan dessa faktorer användas som symptom på fel inom själva transportsystemet. Med ledning av dessa symptom kan sedan ändringar vidtas.

Eftersom huvudorsaken till våra miss-

tag i trafiken har diagnostiserats som ett samband mellan människan och trafikomgivningen får vi utgå från att olyckorna kommer att fortsätta på den nuvarande höga nivån om inte mer uppmärksamhet ägnas åt uppgiften att skapa en ny attityd hos motorfordonsförarna. Dessutom måste trafiksystemet ändras för att minska de fordringar som vi ställer på beslutsfattaren-trafikanten. Det tävlande som pågår mellan alla sorters trafikanter måste bort.

Vlika förare är farliga?

Vad gäller olika faktorer som kan ha värde vid en prognos av en förares framtida trafikfarlighet framhåller Brown att en sådan faktor som reaktionstid har visat sig värdelös när det gäller att avgöra framtida trafikfarlighet. Även medicinska faktorer har i stor utsträckning visat sig vara utan betydelse. Detsamma gäller psykomotoriska faktorer. Även intelligensnivån har ett begränsat värde. Däremot anser Brown att förarens personlighet och temperament har en mycket större betydelse för att bestämma trafikfarlighet. Det framhålls att man har funnit att den som kör fortare än genomsnittet och den som kör saktare än genomsnittet är mera inblandad i olyckor än normaltrafikanten. Det har framhållits att detta behöver i och för sig inte relateras till hastigheten som sådan utan både hastigheten och olyckorna kan bero på vissa personlighetskaraktistika.

Sammanfattningsvis framhåller Brown att en test för förarurval kan användas endast för begränsade grupper av förare och för att välja ut extremt farliga trafikanter. Frågan om i vilken utsträckning test skall användas är en kostnadsfråga. Vi måste beakta hur mycket urvalssystemet kostar och jämföra detta med den minskning i antalet olyckor som vi erhåller genom urvalet.

Summary by Gunnar Johansson of the discussions regarding Diagnostic measures

We all agree that it is very important to look at both the individual driver and the social relationships which he has from the point of view of group psychology. We have also looked at the driver's situation both from the point of view of the driver himself and from the point of view of the traffic system where man is one of the links. It is not possible to separate these two factors from one another. In fact it is the driver in his environment that we should consider, and there I think we all agree. We know that our records of accident causes are very bad indeed. This, I think, is one of the main points which we have made here—how to come to a better situation in this respect. How can we get a better description of what causes an accident, not just ask whether a driver is guilty but exactly what is the cause of the accident?

Then we have touched on the possibility of some kind of a screening test of a different kind, a diagnostic method. We agree with Doctor Biehl that these tests cannot be used in testing the ordinary new driver. It is in the case of a minority group that these tests could

be used. A general test of drivers is thus not considered advisable. On the other hand, methods are being developed, in Vienna among other places, to diagnose certain special groups of drivers who through traffic offences or in some other way have been found to be problem drivers. The accuracy of the methods is not yet so great, however. But the method can be recommended in the case of a limited selection of drivers. It is, however, very important indeed that our knowledge in this respect is developed more and more. We must know how the drivers act and what factors are responsible for at least some kinds of accidents.

We have also discussed the importance of a control system. How can we develop a better control system? We agree that we indeed need control systems and these can be built up in different ways. We have the traditional system with the police as the control organ and we have had some proposals with a view to developing this system. But we have also had at least some hints here that we can use modern technique to make such a system far more effective than it is today, and I would like just to underline this last view.

Therapeutic measures and the traffic offender

Anders Tallqvist

1. The function of highway traffic

The function of traffic is many-sided: it must simultaneously fulfil the requirements of efficiency, safety and recreation. Between these parts there is a constant conflict because they can never all be completely fulfilled at the same time. The conflict reflects itself both at the decision maker's level and the driver's level. The impression is that the different organs of society which control traffic work separately, fulfilling separate functions without the coordination that is needed.

2. Highway traffic as a man-machine system

Traffic can be seen as a man-machine system. The man (here: the driver) has to exist in a machine system (a car in a traffic environment). Each of the different components of this traffic system must be adapted to fit the others. Failures result in critical incidents, near accidents, light accidents or fatal accidents. A failure occurs when the performance of one system component falls short of that required by the remaining components. This form of system thinking tries to create a picture which presents the entire traffic problem, and it means also that, if a person wants to influence one system component, he cannot ignore all the others at the same time. And it points out that improving driver performance is only *one* way of improving the safety level of the traffic system. It is also my impression that departments of motor vehicles as social institutions generally view themselves as completely right and the individual driver as completely wrong. The pattern of thinking at the present time has been predominantly technical and legalistic. A reg-

ulation is given, the police see that the laws are observed, and drivers get penalties for violations.

3. The efforts to adapt the driver to the traffic system

The actual efforts that have been made to adapt the driver to the requirements of the traffic system are:

1. a licensing process,
2. a re-examination process, and
3. a process of legalistic control of traffic behavior.

These three processes have in common the aim of keeping the unsafe driver off the road. The function of the system is foremost to keep the safety level high, while traffic efficiency and recreation are only secondary goals. (Although much criticism can be directed toward the licensing system, including voluntarily attending a driving school, a routine medical examination, a written law test and a road test, because of the fact that re-examination is not used in practice, the focus will be directed toward the above-mentioned third process of legalistic control of traffic behavior.)

After the driver has received his driver's licence, the administration is not active in any way until the driver has been observed making traffic violations and/or causing traffic accidents. Then the driver is fined or his licence is suspended or revoked. Some objections can be raised against this state of affairs.

3. 1 The relationship between violations and accidents

A traffic violation is interpreted in law as a potential crash-risk situation. The crucial question is whether drivers with violations on their records are more likely to have accidents than those with no violations.

A method of measuring the relationship of accident involvement and number of citations is to compare accident frequency with the number of violations. Campbell (1964) has done this, paying attention to the spurious factor when the violations were charged after the accidents. When the spurious factor is involved, many violations are recorded in connection with the investigation of a traffic accident.

Average number of accidents for drivers with various numbers of violations
(Campbell 1964, p. 642)

Number of non-accident violations	Drivers in total sample	Average number of accidents per driver
0	29,984	.167
1	5,921	.391
2	2,221	.560
3	1,042	.699
4	595	.857
5	704	1.001

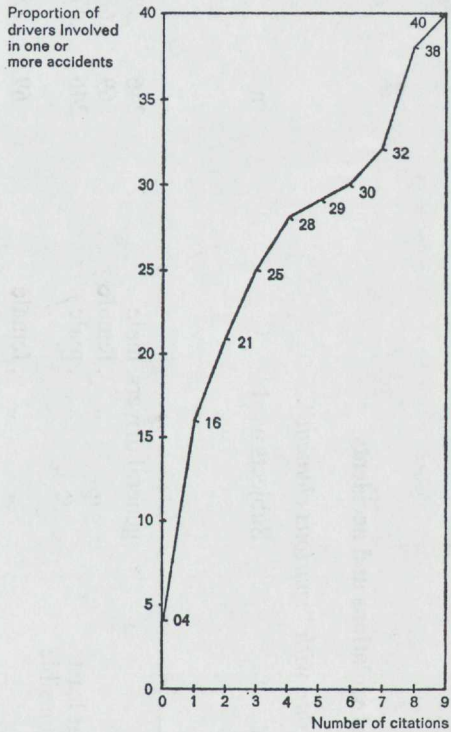
There is a relatively stable and substantial contingency between nonaccident violations and accidents when dealing with the average record of a large group of drivers. But from table 1 one can also see that a great majority did not violate the law but were, however, involved in traffic accidents. O'Neill got the same results in her research concerning licensed drivers in the state of Washington, U.S.A. (1967). Nevertheless, she could not separate citations which were issued as a result of involvement in an accident from those issued without there having been any such involvement. Her results are best shown graphically. (Fig. 1.)

Another method of obtaining information about the relationship between violations and accidents is to check the correlations between the incidents. The following exposition, given in table form (table 2), describes the relationship between *past* violations and *past* accidents. To use the results for predication would be a questionable procedure, but one can safely

assume that persons involved in accidents tend to have a greater likelihood of receiving traffic citations than those who are not involved in accidents. A more accurate method would be to use only nonaccident violations.

The information in table 2 is to be found in reviews by Goldstein (1961), Schneider and Schubert (1967), Miller and Dimling (1969) and in different special reports.

Relationship of accident involvement and number of citations (O'Neill 1967, p. 8)



As can be seen from table 2 the correlations between violations and accidents have been found to be statistically significant but low. The correlations are higher when the above-mentioned spurious elements have not been eliminated. They are also higher when the investigated groups are highly selected. The violation-accident relationship is different among different subgroups of drivers (age, sex) (O'Neill 1967) and also among the various conviction categories (Coppin *et al.* 1966).

Tab. 2

Relationship between recorded past violations and accidents

A. The violation-accident relationship with "spurious element".

Variable X	Variable Y	Subjects used	n	Results diff. betw. grps	Author(s) (year)
violations	accidents	general drivers, male	246	.49	Goldstein, Mosel (1956)
"	"	" , female	69	.68	
"	accidents at least partly responsible	" , male	246	.47	
"	"	" , female	69	.55	
violations (3 y.)	accidents (3 y.)		95000	.26	Williams (1958)
violations (5 y.)	accidents (5 y.)	general drivers, male, age	—24 tot. 12800	.24	Kaestner (1967)
"	"	" " " 25—34		.24	
"	"	" " " 35—44		.29	
"	"	" " " 45—54		.30	
"	"	" " " 55—64		.15	
"	"	" " " 65—		.27	
"	"	" " female	—24	.28	
"	"	" " " 25—34		.14	
"	"	" " " 35—44		.22	
"	"	" " " 45—54		.24	
"	"	" " " 55—64		.27	
"	"	" " " 65—		.34	
violations (3 y.)	accidents (3 y.)	general drivers	148006	.27	Coppin (1965)

violations (3 y.)	accidents (3 y.)	general drivers	total sample max.	≈	Coppin (1966)
speed			148003	.19	
overtaking	"	"		.14	
right-of-way	"	"		.13	
signals	"	"		.15	
turning	"	"		.11	
violations (3 y.)	accidents, DMV (3 y.)	license applicants	14200	.29	Burg (1967)
"	accidents, DMV + insurance (3 y.)	"	14200	.27	
"	of-interest accidents (3 y.)	"	14200	.16	
moving violations	accidents	general drivers	561	.44	Schubert (1966)
violations	accidents	problem drivers	200000	.38	Schuster, Guilford (1964)

B. The violation-accident relationship without "spurious element"

Variable X	Variable Y	Subjects used	n	Results diff. betw. grps r	Author(s) (year)
serious violations	accidents on driving job	truck-drivers	59/88	n.s.	Mc Farland, Moseley (1954)
prior records		acc. repeaters/acc. free	59/88	P = .01	
minor violations	"	"			
prior records	"	"			
violations (3 y.)	accidents (3 y.)	general drivers	148006	.23	Coppin (1965)

Most of the above-mentioned analyses have been done within official departments of motor vehicles. Departmental files consist solely of convictions and accidents; therefore, these analyses include only *recorded* incidents. How they correspond with the total number of occurrences is not completely known, but probably both the accident and violation rates have been underestimated. Using only recorded incidents may be legitimate from the departmental point of view, but it may also lead to political decisions which are both unfair and unsuitable from the accident prevention point of view.

3. 2. The causes of traffic accidents

Several case studies of traffic accidents have shown that very few (mostly severe) accidents have only one principal cause or contributing factor, e.g., "the human factor". Most have several contributing factors or causes. Examples from the results of the most carefully done case studies of traffic accidents give a picture of the situation.

Baker (1960) investigated sixty-eight traffic accidents in Illinois, U.S.A. His research team found a total of 289 contributing factors, distributed in the following cause categories:

Distribution of derived accident factors (Baker 1960, pp. 22—15)

	Road situation	Vehicle characteristics	Social situations	Driver-pedestrian characteristics	Total
Stable	37	11	2	27	77
Variable	71	13	38	90	212
Total	108	24	40	117	289

The mean number of contributing factors per accident was 4.3. In only five cases of the sixty-eight there was one contributing factor only.

In 1965 a case-study project was started in South Africa (Berrangé and Odendaal 1966 and 1967). The project is still continuing, but during the first two years they had investigated sixty-seven accidents thoroughly. The research team consists of an engineer, a sociologist and a technician. The group could agree concerning 900 contributing factors.

In Birmingham, England, during 1965 425 accidents were intensively investigated by a research team (Mackay *et al.* 1967). The result can be seen in table 5.

Deficiencies seen as causing factors in traffic accidents (Mackay *et al.* 1967)

	%
Environment/vehicle/driver	16.4
Environment/vehicle	4.8
Environment/driver	48.8
Vehicle/driver	7.2
Environment	4.6
Vehicle	4.8
Driver	12.4

In summary, it can be said that most traffic accidents are caused by a combination of several contributing factors. It seems to be very much like symptomatic therapy to tackle the problem of traffic violations so actively, as is done today, by affecting only one component in the cause pattern: the driver.

Tab. 4 Contributing factors in traffic accidents (Berrangé and Odendaal 1967)

	The driver, The pedestrian	The road vehicle	Total
Performance failure	464	2	470
Attribute	309	62	430
Total	773	64	900

3. 3. *Effects of more severe actions*

According to Dimling and Miller (1969, p. IV-55) there is an increasing accumulation of data to indicate that the severity of driver improvement actions may be either unrelated to subsequent driving performance or inversely related. But not even in one of the studies referred to in Dimling and Miller's review were the pre-treatment records equal for the various treatment groups. In Finland it was, however, found that increasing the penalty for drunk driving had no effect on the frequencies of arrest for drunk driving during a follow-up year.

3. 4. *The reliability of the accidents criteria*

The reliability of the criteria has usually been estimated by comparing the rate of registered accidents during two different periods. In summaries by Goldstein (1961) and Schneider and Schubert (1967), with more or less the same references, the correlation coefficients ranged from .02 to .73 for drivers of different categories. In Goldstein's summary the highest correlation coefficient was .38, the correlation having been made between accidents for the first year under study against the summation of the second through the fifth. In Finland Häkkinen (1958) reported coefficients ranging from .23 to .73 when the investigated drivers were highly selected and the environmental risk factors rigorously controlled. The coefficient .73 was found when the accident rate of four odd years was compared with the accident rate of four even years. According to Schneider and Schubert (1967, p. 688) only Häkkinen's coefficient of .73 is of a class size for which one can demand a criterion. Also Goldstein (1961, p. 3b) comments that correlations of accidents in one period with accidents occurring in another period are generally considerably higher for drivers of buses and railway vehicles than for general drivers.

In California Coppin *et al.* (1965) found a maximal reliability coefficient of .29 for the accident rate of a three-year period when normal drivers' files were investigated. Schuster (1965) got a coefficient of .28 for accidents of a problem driver group occurring in a three-year period. He had information from the departmental files and from letter interviews.

3. 5. *The reliability of the violation criteria*

There is little published data on the relationship of violations occurring during different time periods. Schubert and Edler (1965) investigated 350 problem drivers in West Germany (Mehrfachtäter) and found a significant recurrence in the quality of traffic violations. Coppin *et al.* (1965) found correlation coefficients ranging from .217 to .252. The coefficients were higher for male drivers than for female ones. Schuster (1965) found a reliability coefficient of .51 for the violation rate of a selected group of problem drivers.

3. 6. *The validity of drivers' records*

Most of the research concerning traffic behavior and official decision-making have been using the official recorded violations and accidents as the most important criteria of traffic behavior. In Sweden, however, Roosmark and Fräki (1966) compared accident information derived from the files of the police and insurance companies and from a personal interview. They found, among other things, that the records of the police consisted only of about 25 per cent of the light accidents and only of about 50 per cent of the more severe accidents having occurred in traffic as compared with the interview information. The researchers found also that insurance companies have more valid files than the police, but they still do not give a 100 per cent accurate picture of the traffic accident situation. Ross (1964)

found in a study of thirty-six accident-involved drivers that only 36 per cent of these drivers had reported accidents which they were legally required to report. No good estimates have been made of the extent to which these biases vary for different subgroups of the driving population.

3. 7. *The predictive value of past violations and accidents*

Probably the most extensive investigation of the predictive validity of violations and accidents has been conducted by a research team of the Department of Motor Vehicles in California (Coppin *et al.* 1967). The analysis is based on data from 148,000 drivers. They considered driver, record data and biographical data, and they attempted to predict one-year performance from a prior two-year record. They found that the best overall accident predictor was the total number of convictions on a driver's record. Biographical information about a driver (age, marital status, area of residence, physical stature, etc.) slightly increased the accuracy of accident prediction. Further additional data obtained from a questionnaire (mileage, occupation, etc.) resulted in a two-fold increase in predictive accuracy. The prediction power of different data differed for males and females. Also in California Levonian (1963) tried to predict negligent operators by using several personal, visual and driving record data of drivers who had come to renew their driver's licences. The predicted variable was the number of recorded accidents and/or convictions for each driver during the three-year period immediately following licence renewal. The results indicate that negligent drivers can be identified at a statistically significant level on the basis of four variables: driving exposure (reported annual mileage), age, sex and marital status.

3. 8. *Effects of removing persons with violations and accidents from the driving population*

According to Goldstein (1962, p. 1) Forbes studied what should happen if all drivers with one or more accidents in the first triennium of the investigation period were removed from the distribution for the next triennium. He found that only 21 per cent of the recorded accidents would have been removed. If only those with two or more accidents in the first triennium were removed from the second, 96 per cent of the accidents remained. A similar analysis has been done by Coppin (1967). He used convictions as the criterion of selection: If all drivers with two or more convictions during 1961–62 were removed from the driving population, 75 per cent of the traffic accidents during 1963 would still have happened. By removing 12.1 per cent of all violators one can maximally avoid 25 per cent of the accidents during the next year—providing that the removed drivers do not drive. But Coppin and Van Oldenbeek (1965) found in California that 33 per cent of negligent drivers with suspended licences and 68 per cent of those with revoked licences drove during suspension or revocation. In summary one can say that even though individuals with poor driving records can be expected to have more future accidents than average drivers, these poor drivers account for a relatively small percentage of all accidents.

3. 9 *Summary*

The relationship between concurrent traffic violations and accidents, expressed in correlation coefficients, has been found to be statistically significant but low. This relationship is stronger at a higher level of violation frequency. Most accidents are caused by drivers whose driving records were satisfactory up until the time of the accident. The great majority of traffic accidents are caused by a combination of several contributing factors. There exist

indications that the severity of driver improvement actions may be either unrelated to subsequent driving performance or inversely related. The decisions concerning participation in traffic are based very much on accident and violation criteria, which are found to be both unreliable and invalid. And the validity of driver records is also invalid. The effects of removing individuals with poor driving records are surprisingly poor from the accident prevention point of view.

4. *Driver characteristics and driver performance*

A successful screening system concerning the control of drivers ("to keep the unsafe driver off the road") requires that individual measurable characteristics exist which relate to driver performance and to a prediction of this performance. The reviews to which I have referred here are very critical concerning the possibilities of predicting driver performance by using different measures of human behavior. Goldstein (1962, pp. 5—6) concludes by summarizing:

1. Accident records themselves do not measure a very stable human performance characteristic, accident status in one period is only slightly related to accident status in another.
2. Accident records are only slightly predictable from measures of other, stable, human characteristics, such as visual acuity, reaction time, sensory psychomotor, cognitive, and attitudinal measures.
3. Accident repeaters do not account for much of the total accidents on records.
4. Two age groups contribute to disproportionate shares of the accident total: (a) those below 25 and (b) those above 65.
5. Alcohol has a deleterious effect on driving performance at much lower con-

centrations than is generally recognized, namely, 0.05 % or even lower.

6. Alcohol is a contributing, or critical, factor in 25 % to 50 % of fatal accidents, on the part of drivers and/or pedestrians.

7. Drivers with extremely poor attitudes of aggressiveness, social irresponsibility, and/or who are highly unstable, have more accidents than those who are responsible, stable, and less aggressive than average: nor do these account for but a slight portion of the accident total.

Partly referring to the same sources as Goldstein above, Schneider and Schubert (1967, pp. 671—793) come to the same conclusion, that the validity of different psychological tests is questionable in predicting driver performance. They conclude also that this is partly due to the poor reliability of the different criteria and that higher predictive validity should be reached by using several information sources simultaneously in decision-making concerning the licensing of drivers.

Finally it may be appropriate to reproduce the review of Miller and Dimling concerning driver characteristics and driving performance. They referred to nearly 1,000 sources (Miller and Dimling 1969, pp. II-10—II-11).

<i>Characteristic</i>	<i>Relation to Driving Performance</i>
Vision	Reduced acuity in older drivers may contribute to accidents; very little other evidence
Chronic medical conditions	Some association with accidents; may be a factor in 15%—25% of accidents; stronger relation with accidents among older drivers
Physical disabilities	Any relation that may exist appears to be negative, i.e., drivers with physical disabilities have fewer accidents

Alcohol	Factor in 25 %—50 % of accidents; importance as a contributory factor increases with accident severity, and alcohol is a factor in over 50 % of fatal accidents	are related to driving performance. Temperamental and emotional factors seem relevant to accidents, but little confirmed evidence exists
Drugs	Affect driving skills, no clearcut relation to accidents. Convicted drug addicts, however, have high accident rates	General adjustment to society Increasing evidence that "an individual drives as he lives", i.e., individuals known unfavorable to social service agencies have higher accident rates
Age	Youngest and oldest have highest accident rates; youngest drivers have about twice the accident rate of middle-aged drivers	Again it can be seen that several driver characteristics are connected with different driver performance criteria. But the connections are rather weak. This means that predictions based on even the best possible predictors will be wrong in a large number of cases, especially if the predictions are made routinely and by stereotyping.
Sex	Women have fewer accidents per time period; may have fewer accidents per mile driven, but evidence is conflicting	
Marital status	Married drivers generally have fewer accidents than single drivers except for young males	
Past record	Positive relation between accidents and violations. Both are correlated with future accidents and violations, but relation is not strong	As Schneider and Schubert supposed, weak correlations depend on poor criteria, but official decision-making uses the same poor criteria.
Sensori-motor abilities	No significant relation	But the reviews show as plainly as anyone can desire that the "human factor" varies greatly. They may also show that the entire cause of the deviant behavior in traffic, as elsewhere, is very individualistic. It is my opinion that the system of rehabilitating traffic violators which is used in Finland, and I think in the whole of Scandinavia, is:
Intellectual ability	Very slight negative relation may exist; i.e., better educated may have fewer accidents	1. too simple to be able to tackle the big problem of traffic accidents and traffic violations,
Mental health	Suggested, but inconclusive, positive relation between mental health and driving performance	2. uses wrong hypotheses concerning the causes of deviant behavior in traffic, and
Personality measures	Item analyses of personality tests show some items	3. is badly adapted to a modern society where a growing majority of the population drives cars, and denial of their right to drive would severely upset their daily living patterns, and where the public transportation system can not satisfactorily fulfil the needs of personal efficiency and recreation in traffic.

5. *The idea of driver improvement. An alternative*

Although it is dangerous to uncritically transplant ideas from other countries, it might be very useful to pay attention to trends abroad, especially to the U.S.A. where the greatest investment is being made in searching for an alternative to excluding drivers from traffic by suspension or the revocation of licences. And in this respect the greatest difference between the policies in the U.S.A. and Finland concerning the possession of driver's licenses is that in the U.S.A. the licensing authorities try to postpone the suspension of the licence actively, while in Finland the licence can be suspended after two moving violations within a certain time space.

5. 1. *A system which is usually not included in the idea of a driver improvement system is the point system.*

According to an AAMVA-publication (1965; p. 141) the definition of the point system is as follows:

POINT SYSTEM—A method of evaluating drivers' records by assigning a weight, in terms of a number of points, to each traffic law conviction, accident, or other reported information, usually within a stated period. Points are usually assigned in accordance with a table representing the evaluation of the event reported. The total accrued within a given period of time may determine referral of the record to a Driver Improvement Analyst and may guide or even determine Driver Improvement Action.

Different traffic violations imply different amounts of points. A more severe

violation implies more points. A certain amount of points within a certain time space implies a departmental action. But to fulfil its function of driver improvement the point system requires:

a. a central, more or less automatic registration system,

b. that all drivers are informed which violation implies which points and at which point level the licencing authorities will react concerning the licence, and

c. that the relation between a violation's degree of risk and the amount of points is objectively established and not determined by a group decision or common sense.

The traditional driver improvement programs in the U.S.A. consist of multi-stage evaluation and treatment processes. In the following review I am referring to special reports and to reviews by Kaestner (1968) and Miller and Dimling (1969).

The first phase of the program often involves a *warning letter* or an *advisory letter* which is sent to the traffic violator. Continued traffic entries on the record of the recipient of a warning or advisory letter trigger the second stage of the program: the *driver improvement interview* (or hearing). The interview can be held individually or in groups. For those drivers who fail to drive trouble-free after the interview, the third and final phase of the driver improvement program is invoked. This usually consists of a *suspension* of the driving privilege for varying time intervals.

5. 2. *Evaluative studies of the warning (advisory) letter*

Only three completed studies on the effectiveness of warning (advisory) letters have been published (Miller and Dimling 1969, pp. IV-28—IV-29). The first two of these, by Temple and Ferguson, were undertaken nearly a decade ago in Texas. One hundred drivers eligible for an advisory letter were selected in the first study. Only half of them were sent the letter. Although the subsequent accidents and

violations of letter recipients were less than those for the nonletter control group, the difference was not statistically significant.

In the second study by Temple and Ferguson a stronger letter of warning was sent to fifty recipients, while fifty control drivers did not get any letter. The results indicated that significantly fewer drivers receiving the letters had subsequent violations as compared with those of the control group. The follow-up time is not known.

Campbell (1964) has made a methodically very sophisticated analysis of the effects of the advisory notice. The follow-up time was nearly two years. Campbell found a significant reduction in the number of subsequent violations and a significant increase in the time lapse before subsequent traffic violations. No accident data were reported.

In Oregon, U.S.A., Kaestner *et al.* (1965) conducted a study of the effects of the form and content of a driver improvement warning letter on subsequent driving. Four groups were used in the project:

1. a control group (n.=240),
2. a standard form letter group (n.=241),
3. a personalized standard letter group (n.=233), and
4. a personalized soft-sell letter group (n.=233).

The recipients were assigned to the different groups at random. The criterion was the number of drivers in each group who were determined as "trouble-free" for six months, or a year in some cases (some "failures" led to interviews, mandatory suspensions or other actions by the department and were not comparable). The results of the study indicated that those receiving the standard letter and those receiving no letter had very similar subsequent driving records. Personalizing the standard form letter without changing a word resulted in significantly fewer traffic involvements for the first six months. The personalized soft-sell letter had significantly fewer involvements during a follow-

up period of one year. And finally, the driving superiority of the two personalized letter groups was primarily attributable to the improvement of the drivers under 25 years of age. Unfortunately insufficient sample size prevented definite evaluation of the influence of the letter on accidents, but a clear positive trend could be noticed.

A thorough and extensive research project concerning the effectiveness of warning letters in reducing accident and citation frequency is in progress in California, U.S.A. The following variables have been included as experimental factors: a) degree of threat content, b) degree of intimacy content, c) follow-up letter, d) inclusion of questionnaire, and e) active type of mailing (Interim Report, Department of Motor Vehicles, California, 1966). A similar project is also going on in Norway (Institutt for Kriminologi og Strafferett, Universitetet i Oslo; project director: Louis Kamber).

5. 3. *Individual interviews or hearings*

According to Miller and Dimling's review (1969, p. IV-32) Chalfant and King evaluated the Michigan driver improvement program. They evaluated both a re-examination interview and the possibilities that certain treatments would be differentially effective with problem drivers with varying characteristics. It was generally found that the recidivism rate was highest for the most severe form of treatment. It is unknown, however, how the drivers were assigned to different treatment groups.

In 1965 Coppin *et al.* published an extensive research report of the effect of short individual driver improvement sessions. Five hundred and one matched pairs of negligent drivers were compared. A hearing consisted of a 30—40 minute contact with a departmental driver improvement analyst. During the session the subject's record was discussed, and various suggestions for improvement in the record were made by the analyst. The hear-

ing was not therapeutically structured. The analysts were not trained in counselling techniques. The analyst's basic role was to impress upon the driver the importance of safe driving habits and the ramifications of continued traffic law violations and accidents. The hearing groups were subdivided on the basis of response to a "mild" hearing notice: 1) those who appeared, 2) those who received a notice but did not appear, and 3) those whose notice was returned "unclaimed" by the post office. The major findings: 1) The hearing groups had significantly fewer citations during the first subsequent year than the control group (the significant difference disappeared during the second control year), 2) no difference was found between accident frequencies, 3) the time lapse before the receipt of the initial citation subsequent to treatment was significantly longer for the hearing group. Because the subsequent citation and accident frequency did not differ between those who attended the hearing and those who did not, it could not be concluded that it was the face-to-face contact with the analyst which affected the subsequent reduction of traffic citations.

Another extensive evaluation of the effect of individual treatment was done in Oregon, U.S.A., by Kaestner *et al.* (1967). A motivational-informational, non-punitive, standardized interview 45—55 minutes in length was conducted by an extensively trained analyst. The drivers were tested for their knowledge of the law, the test results were reviewed, and the driver's record was considered in detail. The driving records of typical drivers of the same age as the interviewer were discussed. The criteria were: a) number of drivers in each group who were troublefree for one year and b) the time elapsed to the first traffic involvement. Violations were significantly reduced. The experimentals had a longer delay before the occurrence of another violation. And fewer drivers in the interview group were involved in both traffic violations and traffic accidents.

A third very thorough evaluation of individual treatment was conducted in the state of New Jersey by Henderson and Kule (1967). Over 6,000 drivers were involved in the study. Control groups were used, but the assignment was not strictly random in that the treatment groups had more prior accidents and violations on their records than the controls. The treatment program was highly individualized and included an intake interview form, an initial interview, a test of law knowledge, written psychological tests and scales, a series of psycho-physical examinations and a final counselling. The analysts were selected and trained in human relations. The whole session required 2—3 hours. The follow-up time varied from forty to sixty months. The study is noteworthy in that it found significant differences for both violations and accidents. The reported recidivism rate of clinic graduates was extremely low. The central features appear to be the highly individualized nature of the contacts and the extensive training program for the driver analysts.

5. 4. Group procedures as a driver improvement device

In the Californian Department of Motor Vehicles extensive research has also been conducted concerning the effectiveness of driver improvement programs for groups (Coppin 1961 and Coppin *et al.* 1965). The first project was started as early as 1958, and it probably represents one of the pioneer efforts to develop equivalent control groups for the evaluation of the meetings of driver improvement groups. Drivers were assigned at random to the experimental and control groups. A session lasted approximately one hour, and the discussion was directed by a driver examiner without any special training. Every group meeting had fifteen participants. Each driver was given a driver attitude test, the driver was asked to score it himself, and no further analysis of the results was made. The analyst

tried to "sell" good driving habits. Both driving and non-driving problems were discussed, the consequences of continued negligent driving was also made clear during a lecture portion of the meeting. Each driver was supplied with a copy of his past thirty-six months' driving record, which was discussed. The session consisted of many different techniques to change behavior or attitudes: group discussion, lecture, self examination. The two groups were matched, but the control drivers were on the average five years younger than the meeting group, and this may have given the meeting group a slight advantage. A significantly greater reduction in convictions was noted for the meeting group as compared with the control group; no such reduction in accidents was noted. The follow-up time was twelve months. A group meeting had also a significant effect on delaying drivers from receiving moving violations. The meetings appeared to have more effect on the older driver. Later the same project was continued (Coppin *et al.* 1965) with larger groups but using the same research and improvement technique. Again violations were reduced, whereas accidents were not significantly affected. The Department of Motor Vehicles in California is continuing the research by using alternative approaches in an attempt to achieve the goal of reducing accidents.

In the state of Washington Kastle and LeSueur (1965) and Wallace (1969) have been conducting group discussion techniques within several driver improvement programs. The initial Washington project was conducted in cooperation with the large research project of the George Washington University, Washington, D.C., under the direction of L.E. Schlesinger (1967). The whole Washington program, started in 1964, has gone through several modification phases, and a large research program designed to evaluate four separate treatment programs for the problem driver was started in 1968. The initial program involved three two-hour sessions. The approach was non-directive group dis-

cussion, and the group discussion leaders were carefully selected and trained high-school counselors. This contrasts with the Californian studies where no selection or training was conducted for the departmental personnel who had driver's licensing experience before their duties as group leaders began. According to Wallace (1969, p. 2), "... the program was based on the belief that group discussion methods are more effective than diagnostic or lecture-centered approaches because they involve active participation and encourage group members to express their feelings, turn their attention toward problem solving, and apply their own ideas. ... and increase the driver's sense of responsibility for the effects of his driving behavior and discourage the tendency to shift responsibility or blame to others ...". The sessions included gripe session, hypothetical cases, driving and non-driving behavior, difficult driving situations and review. The follow-up time was first six months, and during this time the group discussion drivers reduced significantly the violations but not the accidents. After eighteen to twenty-four months another follow-up analysis was made, but the differences had disappeared. The "no shows" in the study group tended to show equal improvement to that of the session. Thus the actual attendance was not a critical factor, but rather the additional contact by the Department of Motor Vehicles. The letter by which the violators were notified was slanted to convey the idea that the program was educational rather than punitive; however, the letter did indicate that rewards and punishment were associated with attendance. A revised program was started in 1966, and a follow-up evaluation of six month's driving record showed that the experimental group was slightly better than the controls. An effort to discover possible changes in violation and/or accident patterns was made without any results.

A very large and a very carefully made study of different driver improvement programs has been completed at the psycho-

logical department of the George Washington University, Washington, D.C., under the direction of Dr. Lawrence E. Schlesinger (Schlesinger and Tavani 1967). The group dynamic study was divided into two major segments: 12-point and 5-point studies. Assignment to the experimental (n.=2,115) and the control group (n.=1,531) was made randomly. The follow-up time was eighteen months.

In the 12-point study, where serious traffic violators were involved, the experimental group was given three discussion-oriented sessions, which "were intended to lead them through a catharsis, an insight into the generation of aggressions and finally to know how the violator's actions relate to others to bring about a responsible problem-solving attitude" (p. 174). Biosocial and certain attitude data were collected from all subjects before treatment. After treatment the experimentals were asked additional questions relating to attitudes. Finally an analysis was made of the characteristics of recidivists. The effect of treatment was evaluated differently for white and coloured males. The conclusion: attending the three sessions had no significant effect on improving driving behavior. No variable or set of variables used in the study appeared to be useful as predictors of recidivism. But recidivism tended to increase as self-perceived improvement in thinking regarding the traffic system increased. Finally, the suspension of driving permits tended to be punitive rather than corrective, since it is associated with increased rates of recidivism.

Drivers who were charged with 5-7 points were considered less serious violators. By random selection these violators were placed in one of two experimental groups—the lecture group (n.=1,094) and the discussion group (n.=1,146)—or they were placed in a control group. The lecture group was given one lecture, and the discussion group was led in one discussion. The experimental groups were asked to answer a questionnaire after the session. Follow-up time was eighteen

months. The post-treatment driving behavior of both experimental groups showed a very slight but consistent improvement over the control group. The lecture group clearly showed surprisingly greater improvement than the discussion group. Certain characteristics were found to be typical of recidivists.

The driver improvement classes had some beneficial effects on the less severe violators. This depended perhaps on the hypothesis that different classes of violators represent different populations who require basically different types of treatment.

Henderson and Kole (1967) also made another study concerning driver improvement. This time the study technique was group discussion. The group discussion leaders were carefully selected (interviews and psychological tests) and thoroughly trained (by using role playing and techniques in group discussion leadership). One control consisted of pre- and post-testing and another of the use of control group "no shows" and control group "no contacts". Follow-up time was 20-24 months. The experimentals and the controls were tested with different psychological tests. The experimentals participated in four two-hour sessions of films and group discussion. Results: The experimentals did not differ greatly from the controls on the psychological measures. The violation and accident records before the treatment were similar for the experimentals and the controls. The post-clinic records showed that treatment resulted in a lowered violation rate. The accident rate was, however, not affected. Henderson and Kole make this important suggestion: "... the occurrence of violations might well depend on attitude and, thus, can be consciously controlled, while that of accidents perhaps depends more on skills."

5. 5. Summary

In table 6 a review is given of different treatment programs and their different effects. Only those studies which used

control groups have been included. The follow-up time varied from six months to two years. Where no statement is given concerning the effects, the criterion was not used or it was not reported.

As can be seen from table 6 the different driver improvement programs do have a documented effect on violation behavior. Personalized *warning or advisory letters* apparently reduce subsequent violations, but there is little evidence that subsequent accidents are reduced. *Individual interviews or hearings* appear to reduce violations during a subsequent time. In addition there is evidence that highly individualized programs have an accident reducing effect. Finally, different *group procedures* appear to have again a violation reducing impact but seem not to affect accident behavior.

It appears to be a fact that warning letters, impersonal and not therapeuti-

cally oriented, individual sessions and group procedures do affect drivers' violation behavior but not their accident behavior. This may hypothetically depend on a possible closer connection between attitudes and violation behavior, which can be so much better controlled by the individual driver. Accidents, however, are dependent on personal skills and on several external factors which a driver has no possibility to control. But when an individualization of the improvement program directs its principal effort in each case toward first diagnosing the specific nature of the problem and then toward counselling accordingly, this procedure may affect personal factors (or combinations of factors), which may be found to be in close connection with accident producing behavior (knowledge, attitudes and/or skills). A crucial point here is the training of the counselor.

Tab. 6 Estimated effectiveness of different driver improvement actions

Program author(s)	CRITERIA					
	reduced rate or number	Violation fewer drivers involved	delaying effects on citations	reduced rate on number	Accident fewer drivers involved	delaying effects on accident- involvement
<i>Warning or advisory letter</i>						
Temple, Ferguson (1958)						
a) regular warning letter		no				no
b) strong warning letter		yes				
Campbell (1959)	yes		yes			
Kaestner, Syring, Warmoth (1965)		no				
a) standard letter						
b) personalized standard letter	yes					
c) personalized "soft-sell" letter	yes			positive trend		
<i>Individual interviews or hearings</i>						
Coppin, Lew, Peck, Marsh (1965)	(the same trend with "no shows")					
Kaestner, Syring (1967)	yes		yes	no		no
Henderson, Kole (1967)	yes		yes	yes		yes
<i>Group procedures</i>						
Coppin (1961)	yes		yes	no		
Coppin, Marsh, Peck (1965)	yes			no		
Kastelle, LeSueur (1965)	yes					
a) follow-up 6 months				no		
b) follow-up 18—24 months	yes			no		
Wallace (1969)	no					
follow-up 6 months	positive trend			no		
Schlesinger, Tavani (1967)						
a) serious violators	no			no		
b) less serious violators, lecture	yes					
c) less serious violators, discussion	no			no		
Henderson, Kole (1967)	yes			no		

6. *A proposal*

6.1. *The aim:* to improve primarily the safety level of traffic and secondarily the levels of efficiency and recreation.

6.2. This aim can be reached by manipulating the car, the traffic environment and the driver. The conditions involved in improving the driver's performance level are, among others, as follows:

1. People differ from each other both concerning their dispositions to react to environmental requirements and concerning behavior in general (different people see the same thing in different things, and different people see different things in the same thing).

2. Traffic accidents are usually caused by a pattern of causes and very seldom by driver performance alone.

3. A growing majority of the population drives cars, and denial of their right to drive would severely upset their daily living patterns.

4. Accidents occur relatively infrequently, and most of the accidents are caused by drivers whose driving records were satisfactory until the time of the first accident.

6.3. Necessary conditions in order to change individual behavior seem to be the following:

1. We must be able to *measure* accurately various aspects of the individual's performance, to quantify the performance, to know the difference between successful and unsuccessful performance.

2. We must be able to *inform* the individual about his performance, both successful and bad performances (=feedback).

3. We must be able to inform an individual rather precisely on *how* he might or is recommended to improve performance.

4. We must investigate the individual's *capacity* to improve.

5. We must be able to *motivate* the individual to improve performance.

6.4. Therefore ...

We may change from a system of excluding and screening drivers to a system of educating and improving driving performance.

We may move from the principal goal of driver improvement to an objective of driver *and* system improvement.

We may focus on the possibilities of educating and improving drivers *during* the licensing phase of drivers' development.

We may create a speedy and automated data processing system within the driver's licensing system. This means a centralized data bank for driving behavior. This means, however, also that the observers in traffic (mostly the police) should be selected and trained in their job to observe and promptly correct risky behavior in traffic. And finally this means that an observation technique should be developed. All these factors are prerequisites for the necessary conditions mentioned in 6.3.

We may use the *differential advisory letter system* when we have initial indications of potential accident behavior in traffic. This diagnostic mass system will probably be invalid to some degree, but it is one possible way to eliminate "the false negatives" (the drivers who will improve by themselves with time) from being exposed to the more severe, more costly and more time consuming rehabilitating process which is proposed next.

We may in "true negative" cases handle a problem driver as an individual; we may try to *diagnose* the specific nature of his problem in traffic and provide valid individualized *counselling* treatment. We have diagnostic devices concerning traffic skills, the knowledge of the law and psychomotoric qualities, but attitude tests must be developed.

The suspension of the driver's licence may be the only possibility in certain cases with bad prognosis — paranoid psychopathology, aggressive psychopathology, among others—who may have slipped through the initial screening process and later therapeutic phases.

We may coordinate research concerning:

1. an adequate model of the driver's task,
2. development of a model to predict accident probabilities for various subgroups of drivers,
3. a model of valid diagnostic and remedial procedure, and
4. informal control of driver behavior in different subgroups of drivers.

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Summary in Swedish

De flesta olyckor orsakas av förare som inte tidigare haft någon anmärkning på sig. Trafiksäkerheten påverkas således inte nämnvärt av att ett fåtal förare tas ur trafiken. Dessutom är de flesta trafikolyckor orsakade av en kombination av ett flertal bidragande faktorer.

Vad gäller sambandet mellan trafikbrott och olyckor finns det ett sådant samband även om sambandet inte är särskilt starkt. Sambandet ökar emellertid om trafikanten begått ett större antal trafikbrott. Det finns tecken som tyder på att svårhetsgraden av straffpåföljden eller körkortsingripandet i anledning av trafikbrott inte påverkar trafikantens fortsatta sätt att sköta sig i trafiken. I vissa fall kan ett strängt ingripande ha en förämrande effekt på trafikanten.

Besluten om körkortsingripande grundas i hög grad på uppgifter om trafikolyckor och trafikbrott. Dessa grunder är emellertid otillförlitliga. Detta innebär att effekten av körkortsingripanden är förvånansvärt dålig om frågan ses från trafiksäkerhetssynpunkt.

Tallqvist betonar de stora svårigheter som finns när det gäller att förutse en trafikants fortsatta uppträdande i trafiken. Det nuvarande sättet att påverka den som avviker i trafiken är också för enkelt för att kunna möta det mycket komplicerade problem, som trafikbrott och trafikolyckor utgör. Det är också utformat utan att det behov av bil som i ett modernt samhälle finns för praktiskt taget varje medborgare beaktats.

Pricksystem värdefullt

De tankar som utvecklats i USA om att en av körkortsmyndighetens huvuduppgifter är att försöka *förhindra* körkortsåterkallelse är därför värd att beakta. I detta sammanhang har också ett s.k. pricksystem ett stort värde. Tallqvist nämner varningsbrev, personliga samtal och gruppsamtal som olika metoder, vilka synes påverka antalet trafikbrott och i

viss utsträckning även antalet trafikolyckor.

Slutligen föreslår Tallqvist olika åtgärder för att förbättra ingripandena mot trafikanterna. Han förordar således att vi övergår från ett system där vi utesluter vissa förare från trafiken till ett system som syftar till utbildning och förbättring. Våra åtgärder måste således sättas in redan innan trafikanten förlorat sitt körkort. Detta innebär bl.a. att i de allvarligare fallen måste vi försöka göra en diagnos av trafikantens speciella problem i trafiken. Vi måste också ha tillgång till en individualiserad behandling. Som en sista åtgärd bör vi sedan tillgripa körkortsåterkallelse.

Some necessary requirements for driver selection and improvement

Anders Englund

1. Introduction

Despite a lot of traffic safety research we don't know very much about the human factor in road traffic. Or do we? Do we for example know enough about the necessary requirements for improving traffic safety by means of driver selection and driver improvement?

We know, however, that we must do something in order to get a higher traffic safety level. We know that *one* way of improving traffic safety could be driver improvement, but which drivers, in what respects and to what extent. In the report "Therapeutic measures and the traffic offender" Anders Tallqvist gives a summary sketch of some problems in this field, some research projects and results and finally he proposes a series of measures. But there are some questions he only touches on or overlooks, and more results that be taken into consideration and conclusions derived that really can and must be discussed.

3. Road traffic as man-machine-environment-system

Road traffic can be looked upon as a man-machine-environment system with the aim of producing communication, that is transportation of individuals, goods etc., and recreation. At the same time we require that the system shall have a flexibility and capacity high enough to correspond to our very different needs of transportation, it shall function safely, easily be got at and it shall be comfortable, rapid and cheap. Thus safety is one of several conflicting demands and the construction of the system as well as different measures towards it must be based on an evaluation of these demands.

Unfortunately you very seldom find such explicit evaluations and corresponding discussions about different problems concerning optimizing. Even more seldom do we really draw the conclusions from the fact that we—at least we say so—primarily are concerned about the safety of the system; we do not seem to be willing to pay for safety at the expense of any real change of the other demands upon the system. We are so far from a rational approach to these problems that even the thought of a cost—benefit analysis and based on that a comparison between different measures is very often lacking.

Some papers presented at this symposium are just another proof of that, and in a way the report from Anders Tallqvist illustrates a very probable consequence of this approach. With some accentuation you could sum it up like this. In the introduction he discusses some implications of the fact that road-traffic is a man-machine-system. But he overlooks some essential implications, almost proves that yet we do not have the pre-requisites for an efficient driver improvement and not the effective methods of treatment we need and still he proposes a series of therapeutic measures despite that he himself also concludes that "we may move from the principal goal of driver improvement to an objective of driver *and* system improvement".

There are numerous examples, even recent ones, of how different components of the traffic environment—vehicles, roads, roadsigns and so on—are constructed without enough consideration about how they will function together with man. Such considerations have been taken only on a very superficial level and the fact that there are limitations of human performance has been and still is overlooked. One explanation can be that evaluation of the safety of the system has been based primarily on accidents, which gives a very delayed feed-back, that is you don't know anything about the shortcomings of a specific construction or

subsystem until it has been used for some time. But the fact that road traffic is a man-machine-environment system does not only imply that the different components' shall be adapted to each other, it also implies that the function of the system can be studied and evaluated in terms of different degrees of adaptation—e.g. in terms of the behaviour of the traffic participants in different traffic situations. Thus we do not need to—and should not—wait until we get accidents in order to decide if a subsystem functions or not.

In order to get a more immediate feedback, to remedy several pieces of neglect, to avoid further mistakes and really solve some problems in road-traffic it seems obvious that we must take man and the limitations of the capacity of man into consideration to a greater extent than we have done so far. Evidently there is much room for different measures towards the environment and the traffic system as a *system* and also many reasons for such actions. In that case we not only ought to discuss the necessary requirements for and the expected results of different actions towards the traffic-participants but also use these considerations as a base for a discussion of these measures *in comparison to* other different measures, for example towards the environment, or directed at system functions. In his report Anders Tallqvist touches upon these questions, but he drops them far too quickly.

As a consequence he only incidentally mentions something about the limitations of driver selection and improvement as means to improve traffic safety.

3. Necessary requirements for driver selection and improvement

If we want to improve traffic safety by means of measures towards the traffic-

participants—such as driver selection and driver improvement—there are some necessary requirements which we must take into consideration.

3. 1. The limits of the measures

Primarily we must make clear the limits of the measures themselves. Driver selection has its limitations depending on to what extent we are apt to accept a very strict selection.

We live in a community where people get more and more dependant on individual transportation by cars. And as Anders Tallqvist points out a “denial of their right to drive would severely upset their daily living patterns”. Another question—that Tallqvist doesn't mention—is, would we accept a stricter driver selection by means of, for example, some tests; would we accept the failures such a system will have and to what extent. If we think or know that we would not accept neither a stricter selection nor the uncertainty of the methods perhaps we had better spend our scanty resources on more beneficial research projects than those dealing with driver selection. At least we ought to discuss it.

Another limitation has already been touched upon, the limitations of man, of his capacity and performance in different situations. Tallqvist mentions this when he concludes that “We must investigate the individual's *capacity* to improve”. We know that people can improve on attitudes, knowledge and behavior, but the crucial question is if they can improve on those respects that they do not cause accidents. We had better investigate that before we make any proposals about therapeutic measures.

There also is a limit concerning the maximum effect of measures towards the driver; only those accidents where the driver to some extent is the causing factor can be avoided by those means. This is quite obvious and unnecessary to tell this audience; the only trouble is that we do not know where this limit lies. According

to Mackay *et al* (1967) the driver could be the more or less causing factor in about 85% of the accidents. An interesting question related to the previous discussion however is in how many cases we would prefer to change some component in the environment rather than the driver—the rest of the cases constitute the real limit of the effect of measures towards the driver. It can be cheaper to change roadsigns or create a new information system in order to give the driver the information he needs than to teach every new generation of drivers how to discover “hidden information” besides the road.

3. 2. Screening tests and criteria

Reliable and valid screening tests or other means and reliable criteria, of course, are necessary requirements for both driver selection and driver improvement. Tallqvist and also Biehl (1969) have given a fairly complete summary sketch of the problems, of some experimental results and the conclusions that can be drawn. Furthermore we have already had a discussion about different aspects of the problems in this field.

(A few remarks concerning these parts of the report (3.1—3.7 and 4) may be added depending on how completely we have covered the field during the preceding discussions.)

3. 3. Diagnostic tests

Another necessary requirement—mainly for driver improvement measures—are reliable and valid diagnostic tests. Of course the screening tests in several cases give information about in what respects the driver has to be improved, but at least some of the methods proposed by Tallqvist—and Biehl—do not. Even driver records must be looked upon as poor sources of relevant information in this sense.

3. 4. Efforts to improve drivers

In his report Tallqvist gives a very interesting survey over different treatment or rather of the effects of different treatments. He refers to a lot of experiments and draws some conclusions from the results.

Concerning the effects of *warning—or advisory—letters* minor differences in frequency of violations have been found. In two out of the three experiments referred to significant differences between experimental and control groups are reported—in one of these cases however the time-period of the follow-up is not reported.

Three experiments are referred to concerning the effects of *individual interviews or hearings*. Differences in frequency of violations are reported in all of them; in two cases significant, but in one of these there was no significant difference during the second year of the follow up.

In two of the experiments also differences in accidents are reported one of them at a significant level; but generally Tallqvist does not report at what level.

Concerning the effects of *group procedures* Tallqvist refers to six different reports of experiments. In two of them significant differences in frequency of violations are reported, but again a significant difference in one case has disappeared when the follow-up is repeated after 18—24 months. In two experiments violations are said to be less in the experimental group compared with the control group. It has not been possible to demonstrate in any of these experiments a corresponding difference in the frequency of accidents.

Referring to one of the experiments—under the direction of Dr Schlesinger (1967)—Tallqvist describes the results in terms of improved driving behavior, but he does not tell us how they defined and measured this behavior. Furthermore, very little is said about evaluations of the effects of the different treatments on the level they primarily are supposed to have,

effects that is in terms of insight, attitude, knowledge or what not.

From what is said here it is obvious that Tallqvist has been a little too kind when he for example summarizes some of the results like this. "As can be seen (from table 6) the different driver improvement programs do have a documented effect on violation behavior. Personalized warning letters or advisory letters apparently reduce subsequent violations, but there is little evidence that subsequent accidents are reduced." I would say that sentences like these are dangerous because there are so many people in the field of traffic safety that do not go behind them—they believe what is written as summary and act from that belief.

Thus I can not agree with Tallqvist when he proposes the use of these treatments. I think we yet know far too little in order to suggest that we spend money on such measures. I agree then when Tallqvist proposes more research.

If these or some other treatments really are found to be effective, why don't we investigate in what way people have changed really. Because if we knew that perhaps we would get this change all over the driver population not only in a small group and we could do it before they have got any accidents—i.e. we could do it already during the primary driver training courses or as a close follow up when the driver starts driving by himself without a teacher.

Finally I must emphasize that as a psychologist I really do like the proposals about an effective system of immediate reinforcement of driver behavior. In a forced choice situation between the different proposals Tallqvist makes I would advocate that we do much more research about that.

Summary by Terence Willett of the discussion regarding Therapeutic measures

I think one very serious thing has come out of this discussion. It is our dissatisfaction with what is done now. We have heard the experts discussing results of contemporary systems of dealing with road traffic offenders and accident repeaters. It is very obvious that the success of this is as low as it is in the general penological system with which perhaps a criminologist is more familiar. The payoff is apparently bad.

One of our great difficulties is to set up an adequate research programme to evaluate the system. What do we mean by a successful outcome of a retraining scheme? In order to manage this we have got to develop, probably internationally, a concept of good drivers, and I would not have thought this so difficult. This seems to be an urgent job and it is one which everyone concerned with road traffic could perhaps get down to without delay. Until we get our definitions right, we can't get our aims clear. Until we get our aims clear, we can achieve nothing.

There was a discussion about education being the best form of therapy to anticipate the offence, anticipate the accident. This, it was stressed, is an urgent problem and the school is perhaps the place where it should be tackled. Many schemes of this kind that are conducted in schools are not very adequate. They are not conducted by people who are really trained themselves in putting this type of thing across. Often they are, as I saw in the United States myself, conducted in a very loose and eager way—a police officer with no specific training in changing attitudes goes to a school and gives occasional lectures. The thing is a ritual. It has got to be more than a ritual. The school children don't like rituals any more than we do. We want something concrete. This is an area of research which is urgent.

We then come to the situation after the

offence or after the accidents have occurred. We will find difficulty, I think, in distinguishing between accidents and offences. In a certain way they overlap. I think we have to be careful in using the term accident. There are accidents about which it is quite wrong to take any other action. What occurred is caused by the system. Retraining of the driver is really not to be recommended, as it is obvious that the driver couldn't help his action because the accident was brought about by the vehicle or by the environments. By noting that there is a very high rate of accidents in particular places, the appropriate reaction should be indicated. The appropriate reaction should not really be to punish someone for something that he couldn't help. Otherwise, as the Lord Mayor so wisely said yesterday, you get a situation where you agonize the driver and make him unreliable because his problem is not understood. So we need to make a distinction between these two things, accidents and offences.

Research would help us to do so. But it has got to be massive research. This costs money and it might be for the benefit of the insurers as well as the benefit of anyone else to spend this money. Perhaps the model for this kind of system can be found in the very sophisticated set-up in California which I think Mr. Tallqvist has visited and also others in this room have seen. This set-up is organized and operated by Doctor Ronald Coppin and I would stress the value of the reports which are frequently issued from their highway department. The information from one country is not always applicable to another but I think the main characteristic of Coppin's work is how applicable it is to most societies.

The question of a punishment or treatment, the value of the choice, etc., all these things were taken up yesterday. But

really there has got to be some screen system operating before individuals come to court. Those who judge have got to be helped much more than they are at the moment. We particularly want to know, as Judge Cosmo stressed, whether the action that has taken place is due to ignorance or whether it is due to an intention on the part of the driver to behave in what he knows to be a dangerous or anti-social way. Often a court process doesn't answer this question. It perhaps should be answered before the process takes place. If you have something like the point system operating, in which there are many interviews before the offender ever gets to court and in which every agency is consulted that knows about him, we could build up a great deal of bodily knowledge about the driver. He can also be sure that we have the best evidence before the court comes in with its power to disqualify. Its legal principle of using the best evidence is a thing we should always remember.

We discussed for a little while the problems of changing the system. Mr. Brown brought up the need of doing so. Admittedly we need to change the system, admittedly we need to have vehicles designed with maximum ergonomic efficiency. But surely in training and in therapy we have to deal with what we have and recognize that the human factor, the individual with his power to decide, his power to receive, his power to adapt himself is a given factor that we must deal with. Let us by all means study the problems of changing the system, the problems of making life easier. Let us face the fact that we have to accept the kind of environment in which we live and find means to train ourselves for it.

Finally, of course, Mr. Englund raised the point that all of these systems, all of these methods that we are discussing cost money. We have got to decide whether we are going to do without one thing and spend money on another. This is always the fundamental question. The cake is only so big and we have got to decide which parts of it we are going to eat. The

problem here is that certainly a great waste of money is going on throughout the world. We carry on with inefficient systems. We deal with refractory drivers and refractory offenders of many kinds. We see that a great waste of money is taking place. We must change and change quickly.

which part of it we are going to cut. The only thing and we have got to decide the fundamental question. The case is spend money on another. This is always we are going to do without one thing and money. We have got to decide whether these methods that we are discussing can the point that all of these systems all of them. Finally, of course, the English mind means to train ourselves for it.

Moreover, in which we live and find that we have to accept the kind of method the system. Let us take the fact as by all means study the problems of changing the system. The problems of a given factor that we must deal with. Let us resolve the power to adapt that it is identical with the power to decide. The power recognize that the human factor, the fact we have to deal with what we have and of that study in training and in learning signed with the human economic efficiency we need to have vehicles as really we need to change the system and brought up the need of doing so. A change of changing the system. The power We looked for a little while the problem that we should always remember.

Legal principle of using the fact religious comes in with its power to distinguish. In we have the best evidence before the court about the driver. He can also be sure that build up a great deal of bodily knowledge. I should like to know about him, we would to that end in which every agency is interested before the offender. Every system operating in which there are many places if you have something like the court be involved before the process. Let us answer this question. It perhaps a little social way. Then a court process, the only what is known to be a change in the court to that of the driver to decide. Is it or whether it is due to an imagination that that has taken place is due to imagination or whether it is due to an imagination.

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Present traffic law problems concerning mainly the prevention of traffic offences

Carl-Johan Cosmo

The last subject to be discussed at this symposium lies to a large extent outside the limits of what we have earlier dealt with. It relates to law problems covering prevention of traffic offences. My aim, however, is not to give a summary of all the problems which exist at present relating to the prevention of traffic offences. With a view to the disposition of this symposium, I therefore wish principally to refer to the issues which I have reason to believe have been taken up at earlier discussions. The purpose is consequently mainly to give a few examples of the legal applicability of the problems earlier discussed.

The judicial experts have for a long time worked on the project of finding methods for the prevention of traffic offences. It is generally considered that we here are up against one of the most essential problems in traffic safety work. It has namely been presumed—whether rightly or not—that if we can persuade the road users to follow the traffic rules, we have thereby also gained something which is essential to traffic safety.

If we ask ourselves how we have succeeded in our efforts to try to prevent traffic offences, the answer will not be entirely positive. The annual number of prosecuted traffic offences alone in Sweden amount to more than one million.¹⁾

It can hardly be said that the risk of being detected is very great in the case of traffic offences. The actual number of such offences is therefore considerably larger. In an investigation carried out in The Netherlands it has been estimated that only one traffic offence of 30,000 is detected. Transmitted to Swedish conditions, this would imply that 30 billion traffic offences are committed annually in Sweden.

This data strongly shows that our at-

tempts to prevent traffic offences have not been successful. This failure may, however, be said to be anticipated. Our experience from other fields than traffic is not much more favourable as regards the possibilities of preventing such acts as we have decided to consider as criminal offences.

The fact that I only intend to deal with questions of a strict legal aspect does not in any way imply that I underestimate the role of technicians in this connection. Every discussion regarding the prevention of crime must appear to be incomplete unless the following more general viewpoints are taken into consideration:

1. The traffic system is not adapted to human efficiency. Our roads, for instance, have been built in such a way that an extensive and complicated system of legal traffic rules is required in order to regulate the behaviour of the road users. It is impossible to live up to the expectation of an ideal driver that our road builders have in mind.
2. It has been impossible to draw up a clear and uniform traffic rule system. We leave—and have to leave under the present circumstances—a large number of decisions at the discretion of the driver. Inasmuch as a discussion often arises as to which is the best way to drive in a certain situation, we have here a built-in collision risk.
3. The road users' knowledge of the rule system is insufficient. The reason herefor may be said to be, among other things:
 - a) The theoretical instruction given at driving schools, through TV, etc., does not result in the drivers mastering the rule system;
 - b) Our methods of informing drivers of the traffic rules are hardly satisfactory. As an example hereof may be mentioned that it has been asserted that, even with the best of intentions, we have no possibility of observing more than perhaps every other signal or traffic sign

124 ¹⁾ In this number, however, cases of fences but rather as civil breach of unpermitted parking are also included, among others. These ought not, in my opinion, be regarded as of- ing in parking houses, for instance. SOU 1971:81

which is supposed to give us the correct information.

4. Finally it may be said that the most effective method of preventing traffic offences is to de-criminalize various offences which now are considered to be criminal. Perhaps a concentration of jurisprudence to offences which we consider to be particularly dangerous to traffic would give greater traffic safety effect than the general spread of resources which we have today.

Following this general introduction, I pass on to the *first question* which I would like to take up for discussion: Have we or can we obtain some sort of method by which we more or less exactly can measure or estimate a traffic offender's future danger risk in traffic? I am conscious of the fact that this question could be extended to include the wider problem as to whether we with any degree of certainty might be able to estimate the future danger risk so far as all driving licence aspirants are concerned. We would hereby be able to divide up all the grown-up population into dangerous drivers and non-dangerous drivers. I am of the opinion, however, that there is great danger in extending the problems in this way. Such a test would appear to me to require a comparatively sensitive method of selection. Otherwise the great risk for injustice would make the method unacceptable. The problems at issue appear to me to be entirely different, however, if we limit the field of test persons to include only those who already have shown that they very definitely fail to follow the traffic rules. In earlier discussions I believe it has often not been quite clear that this distinction has to be made.

The lawyer engaged in practical traffic work consequently today meets the problem of answering the question of future traffic risks when he, for instance, is to decide the question of driving restrictions in the case of some person who has committed a traffic offence. The traffic lawyer has at present very limited investigation material at his disposal when making a

decision which, in the case of most drivers, implies an extremely great intervention. The material consists almost entirely of an investigation regarding the driver's general living conditions, for instance his so-called social adaptability. In addition the opinion is that, for instance, a person who has been guilty of drunken driving constitutes one kind of danger risk, whilst a person who has fallen asleep while driving constitutes another type of danger risk. The limited resources available for an actual investigation to determine traffic dangerousness appears to have had as a result that the viewpoint of general prevention has come to be the most predominant. We sacrifice the individual driver in the hopes that we thereby prevent other drivers from committing traffic offences.

If we in making our decisions, as the legislator has presumed, also shall take into consideration future traffic risks, the question arises, however: Are we today giving our authorities a satisfactory basis for the decisions which they have to make? Have not, for instance, the psychological scientists been able to arrive at some test method which in any case could increase the probability that our presumptions regarding future traffic danger are correct?

At the same time, I should like to emphasize, however, that an extended personal case study always causes increased inconvenience to the individual. Different and in themselves contradictory interests must here be balanced against each other. It is therefore important that the advantages and reliability of possible proposed test systems be clarified as soon as possible.

The *second question* which I would like to discuss is of a more general nature. My starting-point is that a traffic offence to a large extent is considered to be a "gentleman's offence".¹⁾ It is not considered socially defamatory in the same manner as many other offences. I might consequently mention that there are groups of drivers who have established

a mutual fund for the payment of traffic fines. Insurance against driving restrictions has also been discussed in some country, according to the information I have obtained. We can probably not find any example of similar tendencies in the case of other crimes.

Perhaps someone says that, for instance, the social consequences of property crimes are such that we do not wish to use social pressure as a repressive measure in traffic legislation.

In the case of other general crimes we create through social consequences, among others, a foundation for continued criminality. Against this I should like to point out, however, that there probably are so large differences—historical, among others—between these various types of crime that any possible apprehensions of negative consequences in the case of an attempt at social pressure even within traffic legislation probably are out of the question.

Furthermore, I look at traffic legislation as a field where the prospects of a positive effect of social pressure at home, among friends, at the place of employment or at school are favourable. We ought here to be able to create an experimental field where these forces might act as a factor towards crime prevention. On the other hand, we ought to arrange our system in such a way that we do not take such measures against offenders as will increase their risk of committing crimes in the future.

As a background for continued discussions I would like to point out the following:

The purpose of the traffic rule system is largely only to solve conflict situations, in the widest sense of the word, which constantly occur on our roads. The system has not been drawn up as an expression of moral, religious or other appraisals. It shall not be denied, however, that certain exceptions from this main principle exist. As an example of traffic offences where not only the estimation of danger risk in traffic has come to be of

importance may be mentioned drunken driving and manslaughter, as well as causing personal injuries. In view of the fact that our evaluation in general appears to be acceptable to everyone, there ought to be good possibilities theoretically of getting the traffic rules standards approved by *all categories*.

This has so far not been possible, however. It is not considered condemnable or anti-social to break the speed rules or drive a car in a state of exhaustion. From a traffic safety point of view, however, it would be of great value if we in some way could thoroughly impress upon the drivers that a breach of the traffic rules is something very reprehensible from the point of view of social cohabitation. Anyone who breaks against the traffic rules must be considered to be a poor car driver. I would therefore like to put the question to Messrs. sociologist, criminal experts and psychologists: How shall we attain such an attitude?

I am naturally aware of the difficulties. The fact, among others, that many traffic rules constitute such a controversial issue is a strong negative factor. In our country, for instance, we are constantly witnesses to discussions between different groups of experts as to whether speed limits are of any importance or not so far as traffic safety is concerned. Against this background it does not appear to me to be easy to arrive at a general acceptance of this part of the rule system.

Another negative factor closely connected with what I have just mentioned is the over-criminalization which, in my opinion, occurs especially in the case of traffic. The legislators have, as a result of tradition and possibly a certain lack of imagination, entirely too often considered criminalization to be the only possible method of affecting our actions. In the traffic legislation debate we thus find statements to the effect that an extensive criminalization of traffic offences in a certain country shows that this country has gone far in traffic legislation. Personally I would like to put a large

question mark in the margin and maintain that an extensive criminalization not so seldom directly counteracts traffic safety by, among other things, dulling the barriers against committing traffic offences, which might be laid down in the conscience of the drivers.

I would like to conclude this second section by asking how it shall be possible to arrive at an altered attitude towards traffic offences. What shall we do to make clear that committing a traffic offence is blameworthy? In certain countries, the Soviet Union, for instance, they have gone in for the system of issuing a friendly warning through collective action, as well as public reproach as a repressive measure. Can we learn anything by this and is it possible to avail ourselves of these ideas in the Western sphere of culture?

In certain other countries traffic offenders are sometimes enjoined to help out at some hospital with persons injured in traffic accidents. Another idea is to work on effective restrictions against driving licences and motor vehicles. The difficulty in this connection, however, is probably to effect these restrictions in such a way that they hit the right person and, in addition, have the effect of such social defamatory character as we, to a certain extent, ought to try to attain.

Furthermore, it appears to me to be advisable to use our resources for a campaign of indoctrination with the assistance, among others, of mass media. Even instruction in school should be included in the picture. A general understanding has to be created of the demands upon the individual which the traffic community have to make.

The *third question* which I wish to take up for consideration is whether society's restrictions against drivers who have committed a traffic offence is sufficiently effective. Extensive analyses are hardly necessary to ascertain that this is not the case. The following reasons for this may be mentioned:

- a. The sanctions are not such that they in any way prevent the traffic offender from repeating a traffic offence;
- b. We do not sufficiently often take action against persons who have committed serious traffic offences. Legal action is not regarded as an obvious risk factor when breaking the rules;
- c. We do not take action quickly enough.

In the following I will only take up the problem referred to under a).

The sanctions in force in traffic are at present in practically all of Europe only of a repressive nature. To a large extent we bring about by our restrictions such conditions as, according to our experience, lead to transgressions of the law and then also to traffic offences. The question we ought to put is whether it might be possible to make the legal effects in the case of traffic offences more positive to their character. Is it possible to construct our system in such a manner that we also obtain safer drivers through the action taken by the authorities? Can we here make use of any of the methods of treatment considered suitable that we have arrived at during our discussions?

In view of the very great number of traffic offenders it is, furthermore, practically impossible, for administrative and financial reasons, to pay thorough attention to all traffic offenders. I would therefore ask upon whom we should direct our resources in order to arrive at an optimum traffic safety effect. The traffic-judicial demand for some kind of diagnostic method appears to me to be evident. Shall we direct our attention to those who have committed one single traffic offence, for instance fallen asleep while driving? Or is it possibly so that he who repeatedly has broken against the speeding rules may be presumed to be the driver who ought to be given an opportunity of rehabilitation?

The earlier discussions at the symposium ought to have given the answer to the questions I have just mentioned. In this connection I will therefore take up

another aspect. It thus appears to me as if our criminal procedure is so construed that it effectively counteracts the positive proposals and ideas that might exist regarding various sanction alternatives. The entire manner in which we deal with problems of traffic offences counteracts methods of treatment.

Anyone who has come in contact with the "machinery" is thus drenched with a number of, in his opinion, disconnected personal contacts, writs of service, injunctions and decisions. I wonder whether this does not create, in the case of most traffic offenders, a negative attitude towards society as a whole and the legal authorities in traffic matters in particular, which attitude will be difficult to counteract in a later stage of treatment. It therefore to me appears necessary to adapt an entirely different attitude in the future as to how the apparatus of society shall function in these cases. The question as to whether a driver has committed a certain offence or not must not become a problem which overshadows everything else. The problem as to how to prove a certain offence and other procedure problems must not be given priority. The offender must also be given to understand how dangerous his driving has been and how he in the future might be able to improve his behaviour in traffic. I consequently look upon a "humanization" of procedure in traffic cases as an important demand. The traffic offender must not be given the impression that the legal procedure is only a question of the authorities exercising their power where the offender—the individual person—only has come to be the subject of a decision process.

In order to avoid any misunderstanding I would like to emphasize that what I here have stated should not be interpreted to the effect that, according to the present system, the legal rights of the individual in any way should fail to be upheld. My purpose is solely to propagate for an increased ambition level—a different and wider conception of the legal rights.

How a reform to this effect shall be

realized I don't dare to have any distinct opinion about for the moment. I think, however, that we in the future have to try to get away from our present manner of executing our functions as judges from a judge's bar, which is highly located both literally and figuratively. I would consequently maintain that such a change in the legal procedure is necessary in order that the "climate" for treatment shall become satisfactory.

Up till now the idea always seems to have been given precedence that the solemn form under which the Court carries on its work in itself would have a preventive effect on crime. In my opinion the time now appears to be ripe, however, to consider whether this actually is a correct point of view. I am fully aware of the fact that a change to the effect I have indicated would demand a great deal of those involved. The solemn forms under which the "machinery" functions at present naturally also gives the system stability. Whether the formal legal decisions reached are unimpeachable or not can also comparatively easily be checked. A question which must be discussed is consequently whether we here would sacrifice something so essential that we have to abstain from our intentions to create a more favourable climate of treatment. For my own part, however, I cannot find that these apprehensions ought to prevent at any rate an experiment being made in the field of traffic procedure. Such an experiment would also most likely be able to give us valuable experiences so far as general criminal procedure is concerned.

In the fourth place I would like to challenge the traffic insurance jurisprudence and suggest that traffic insurance more directly than at present be used to persuade the drivers to improve their behaviour in traffic. In this way the traffic insurance would also indirectly contribute to the prevention of traffic offences. The idea is here that not only accident frequency should be taken into account when deciding the class of bonus,

i.e. the amount of premium to be paid by the motor vehicle owner for his traffic insurance. It has been emphasized in different connections that road users must be given a positive attitude towards the idea of improving their driving behaviour through own initiative. Why then should not the driver who of his own free will has become better equipped to appear in traffic, for instance by participating in driving improvement courses, be rewarded by way of a premium reduction of his traffic insurance? One condition for my proposal being accepted is naturally that there is evident reason to believe that the driver after his schooling is a slighter risk factor in traffic than before his participation in the course. It is not for me to answer that question. I do wish to maintain, however, that it must be of interest generally that as many drivers as possible—and then also the less ambitious drivers—participate in the driving improvement courses that are offered. In that no direct or obvious reward now is granted to those who attend improvement courses, there is reason to believe that only the most ambitious drivers participate. In this way we never reach the average car driver. Would it not in this connection be possible for the insurance companies to take active steps for an extension of these courses? Could not the bonus system suitably be utilized for this purpose?

One objection which might be raised against such a proposal might probably be that a driver who is constantly involved in traffic accidents ought not to get his premiums reduced by attending courses in traffic. It seems that we can meet this objection, however, by pointing out that it is exactly these drivers we wish to reach at our traffic improvement courses. It ought to be easy, furthermore, to draw up a system in such a manner as to eliminate the effect whereby participation in a traffic course would make the driver *entitled* to be involved in a certain number of traffic accidents. Another objection to the proposed system appears to me to be of an administrative nature—it

would cause too much trouble. By using modern data technique, however, the increased administrative work could almost entirely be eliminated.

In another respect I would also like to raise the question whether it would not be possible for the traffic insurance companies to take advantage of increased knowledge regarding the danger risk of different drivers. In Sweden, for instance, certain insurance benefits are granted at present to total abstainers. These persons are regarded as belonging to a more favourable risk category than other insured parties. By different kinds of tests it ought to be possible, however, to pick out groups of drivers who from a risk viewpoint are better drivers than the groups we at present grant special benefits. Isn't it then advisable, from an equitable point of view, to make use of this knowledge when deciding the insurance premium?

My reflections in this section have been based on the presumption that, if traffic security can be attained by amendments in traffic insurance, there must be strong counter-arguments to prevent such amendments from being put into effect. Increased administrative inconvenience or economic injustice as against different policy holders are therefore objections which simply should not prevent amendments from being made, which from other points of view are well grounded.

This last introductory statement at this symposium regarding "The human factor in road traffic" I have regarded as a legal summing up of what previously has been submitted for consideration. Inasmuch as I naturally have been unable to predict the result of earlier discussions, I have in some sections only been able to submit certain questions for discussion. Perhaps this is merely of advantage, however, as I thereby have not restricted the discussions to follow an established and perhaps preserving rule system, which I, as a lawyer, carry with me as an hereditary encumbrance.

Summary in Swedish

Den officiella statistiken ger en dyster bild av trafikbrottens utveckling. Våra ansträngningar att minska antalet sådana brott har inte varit särskilt framgångsrika. Trafikbrotten ökar således för varje år och uppgår f.n. i vårt land årligen till omkring en miljon. Mörkerantalet är också mycket stort och det har t.ex. hävdats att endast mellan en och fem procent av alla rattfylleribrott upptäcks.

Denna dystra utveckling kan inte brytas om vi inte angriper problemet ur ett stort antal angreppsvinklar. En metod som hitintills förbisetts är en avkriminalisering. En annan metod med direkt anknytning till ämnet för symposiet är att försöka genom urvalsmetoder få bort de farliga förarna från trafiken. I vårt land gör vi vårt urval efter ett antaget direkt samband mellan allmän brottslighet och trafikfarlighet. Utomlands förekommer emellertid i stor utsträckning urvalsmetoder som närmare knyter an till förarens trafikantpassning. Det finns anledning fråga om vi inte här har ett område, som hitintills försumrats i vårt land till skada för både den enskilde och trafiksäkerheten.

En annan faktor av betydelse är att vi ännu inte anpassat oss till de regler för samlevnad som måste gälla i ett bilsamhälle. Det anses således inte som något diffamerande att bryta mot regler om t.ex. hastighet eller fordonsutrustning. Från trafiksäkerhetssynpunkt skulle det emellertid vara av värde om vi kunde uppnå ett tillstånd där ett brott mot trafikreglerna anses som något från samlevnadssynpunkt förkastligt. Var och en som bryter mot trafikreglerna måste anses som en dålig förare.

Våra nuvarande sanktioner i anledning av trafikbrott — främst straff och körkortsåterkallelse — har enbart en represiv karaktär. Sanktionerna bör i framtiden utformas på ett sådant sätt att de syftar till att göra trafikbrottslingen till en trafiksäkrare trafikant. Ett stort problem är emellertid här att hos förarna skapa en motivation för ett trafiksäkrare upp-

trädande.

Även vår nuvarande processordning för handläggning av trafikbrott tas upp till granskning. Det finns således anledning anta att det sätt på vilket vi nu handlägger dessa frågor motverkar våra försök att göra trafikbrottslingen trafiksäkrare. I stället befästes eller skapas genom handlägningsformerna hos trafikanten en negativ attityd mot samhället och kanske särskilt mot rättsorganen. Trafikbrottslingen får inte — som nu ofta torde vara fallet — ha känslan att han enbart är ett föremål för en beslutsprocess. Ett förmänskligande av processen är därför ett viktigt krav. Kravet på rättssäkerhet måste ges en djupare och mera vittsyftande innebörd. Ett absolut krav är här bl.a. att ingripanden måste ske på ett sådant sätt att trafikbrottslingen förstår innebörden och syftet med åtgärderna.

Det kan också finnas anledning att inordna trafikförsäkringen i trafiksäkerhetsarbetet. Det har således i skilda sammanhang framhållits att trafikanten måste ges en positiv attityd till tanken att förbättra sitt trafikskunnande. Varför skulle inte den trafikant som frivilligt förbättrar sitt trafikskunnande kunna ges en belöning i form av lägre trafikförsäkring? Härigenom skulle vi kanske vid vår vidareutbildning kunna nå kategorier som eljest ej skulle fortbilda sig. Normalbilföraren skulle kanske kunna komma med i fortbildningen.

Trafikförsäkringens indelning av trafikanterna i olika riskkategorier granskas också. För närvarande är det endast absolutister som erhåller generella nedsättningar i sina premier. Är det emellertid inte från rättvisesynpunkt berättigat, att ge även andra trafikanter rätt till denna förmån. Det finns således anledning anta att tillgängliga urvalsmetoder, trots att de inte kan anses fulländade, skulle kunna åstadkomma en förarindelning som ur risksynpunkt vore riktigare än den vi nu gör. Samtidigt understryks emellertid att om en sådan urvalsmetod skall användas måste den vara enkel och därmed också föga kostnadskrävande.

Insurance premiums and training of drivers by

Lennart Lindstrand

I feel called upon to say some words about traffic insurance and improvement of drivers. The idea put forward by Mr. Cosmo that the willingness—if I may put it that way—of a driver to improve his driving through driving improvement courses is no doubt of great interest. Between the costs of accidents and the insurance premiums there is always a reciprocity. Less—and smaller—accidents give lower costs—and premiums—and an increase in accidents must inevitably in the long run influence the premiums. The insurance companies, therefore, have the utmost interest in all measures that can be taken in order to diminish accidents or to abolish them.

However, the traffic insurance and its possibility of operating such a system has to be of a secondary character. It is, as far as I can see, necessary for the insurance companies first to have a suggested and at least somewhat worked-out system before them and then see if it is possible for them to use it. When and if that day comes, however, the insurance companies are, I am sure, prepared to cooperate in every possible way as they are certainly most interested in everything that may improve road safety.

After having said this I must admit that Mr. Cosmo's ideas are fairly new to me. I am, therefore, not prepared to do more than to give a few personal points of view.

First I think we have to take into account the basic idea of insurance, which is distribution of risks and balancing them. Together with this basic idea we have the aim at just premiums, by which I mean that a greater risk to a certain extent should bear a higher premium than a smaller risk. Of course there is—if I may say so—always a mild struggle between the point of distribution of risks and the point of aiming at just premiums between the different groups of risks, in this con-

nection owners/drivers of vehicles, as namely differentiation of risks will always be against the total distribution of risks. The question of weighing the two against each other must, therefore, always be a question of a reasonable balancing.

There is, of course, a lot to be said about just premiums in the relationship between different groups of drivers. I would like to put just one question. You have on one hand the driver who causes many accidents, though he is a nice chap and quite interested in driving improvement courses. You have on the other hand the driver who causes no accidents and who is by no means interested in going even to one single such course. Do you really think is possible for the insurance companies to charge the first one a lower premium than the second one or even charge them both the same premium?

The insurance companies to-day are very cost-minded and the rationalisation of administration in the insurance business has undoubtedly contributed to the fact that premiums in motor insurance are not higher than they are. Against this background I would say that it might be unwise to underestimate the possibility of increase in administrative work and administration costs with a system, where drivers are to be put into different risk groups according to their accident records and to their records as regards improvement courses. I think it might often be difficult to explain for instance to Mr. Anderson why he has a higher premium than his friend Mr. Peterson, especially if Mr. Anderson has had no accidents. I am afraid you would have to give a lot of such explanations in a system like that, and I am afraid you will find it difficult to put them on data.

In connection with this question I have to point out a technical difficulty: As you know the owner and the driver of a ve-

hicle very often are different persons. I suppose you all realize the problem and the technical complications it must cause. It would of course lead too far to go into them to-day, but it seems necessary to bear them in mind.

Finally: When the insurance companies, who work with other people's money, decide on their premiums they have to take the risk into account. The question is therefore: Should they take into account the risk factors they believe they know or should they take into account the hope of the possibility that what they consider a bad risk to-day through improvement courses might become a good risk to-morrow? Maybe there will be a certain difficulty to convince those who make no accidents to-day of this latter way of looking at problems, but he who lives will see.

Summary by Terence Willett of the discussions on the subject of The present traffic law problems concerning prevention of traffic offences

We have had a number of discussions about how to deal with the problem of stigmatizing. We didn't really get very far with it. There were suggestions from Mr. Brown as to using discs on the vehicles to identify the offenders, various colours of tax certificates, and the suggestion of Professor Buikhuisen that perhaps special registration plates could be used.

These lead to numerous difficulties. One of them, of course, is that the offenders tend to leave them off and to avoid driving their vehicles with this kind of stigma visible. And this problem of making the stigma stay is an extremely difficult one. I don't think we perhaps solved it.

The problem of information in relation to sentencing is discussed in considerable detail. We have the clash between those who thought as Professor Sveri that sentencing should be related specifically to the offence and that it should, as far as possible, be anticipated and understood by the offender and the public. On the other hand we had the opinion that the sentence should be related to the offender, as expressed by Professor Buikhuisen, for example. In the Netherlands a type of sentencing is discussed where the guilt is decided by the court and the sentence is decided by a specialist. After some discussions it was pointed out that sentencing could be individualized without risk of unjust restraint on the offender.

What was rather brushed over in that discussion, I thought, was the importance of the information before the court if the offender is found guilty. It came up yesterday that we often have to decide in court with inadequate information. It is this that causes so much hostility towards the court on the part of the offender and greatly diminishes the effect of the sentence that is passed. That we didn't get down to.

Mr. Englund brought up the point that it is very difficult to decide what strict punishment is. It is very difficult to evaluate the punishment. Only the offender himself can understand and can evaluate the strictness of the punishment. What is strict for one is not strict for another. This point is also brought up by others.

Mr. Englund also brought up the point that rules are necessary but that they are often rather too difficult to learn. Some effort should be made to make it easier to obey the law by simplifying it.

We went on to have a discussion of the difference between people's opinions, as they express them when they are asked about the appropriate behaviour on the roads and the appropriate sentences. These differ from the way they actually behave. It was mentioned that this is always likely to occur. The only way to avoid it is to build in a very definite censure into the individual through socialization and combine this with strict enforcement. Then perhaps people will act according to the moral precepts that they express.

This took us over to the discussion regarding socialization, which is, of course, the most difficult. And in discussing socialization Professor Sveri pointed out quite rightly that we have often misunderstood offenders, assuming that they don't know that what they do is wrong. He pointed out that it is typical for the majority of offenders that they usually do know exactly what is right and what is wrong. There are no illusions about this at all.

The problem of social pressure is stressed a great deal. I don't think that we have solved that particular problem either. And the reporting of cases in the press, on the television, etc. is mentioned, and certainly the use of press reports is very valu-

able. How this pressure is exerted so that the public actually castigate the serious motor offenders is one of the real problems we have to face. As I said, we didn't succeed in this objective.

We then finished up with a discussion by our insurance colleagues of the way in which insurances can help in solving this problem. Curiously enough it brought us back to the very question with which we opened that discussion, the problem of equality and justice. We heard from the insurers how important it is to people that everyone is treated alike, how unjust it is that an individual who is involved in repeated claims should receive the same treatment as one who is free from claims, and how the insurers take that into account. It is desirable that advantages should be gained by keeping one's licence free of endorsement. The advantages of this should be stressed very considerably and we saw here something of the way in which insurance could encourage law abiding and rational behaviour on the roads.

Some legal aspects as a background to the discussions

Carl-Johan Cosmo

Measures of society against road users

1. Traffic offences

In order to promote traffic safety, society has considered it necessary to take various measures against those who violate certain stipulated rules.¹⁾ Such violation of the rules might, for instance, consist in exceeding the speed limit, the consumption of alcohol in connection with driving or failure to observe a right-of-way rule. The measures taken by society here usually consist of a conventional penalty—for instance a fine or imprisonment—and/or driving restrictions. These measures can mainly be said to have three purposes: 1) individual prevention, i.e. that the driver is assumed to become a better driver in the future, 2) general prevention in that other drivers shall be influenced to observe the traffic rules, and 3) preventing a dangerous driver from appearing in traffic (this refers mainly to driving restrictions).

Chiefly in connection with driving restrictions in the case of averagely serious traffic offences, where it is not considered that driving restriction should be compulsory, the question arises as to how these persons properly shall be selected who shall be subjected to driving restrictions. Consideration is first of all given to the degree of severity of the traffic offence (the traffic danger). In addition, however, the authorities also make an appraisal of the driver's suitability as a motor vehicle driver. This judgment of a driver's suitability is in Sweden chiefly based on statements from, for instance, the temperance board, the police and the driver's employer, as to the driver's general social adaptability. If his adaptability is good, this is considered to be a strong indication of the fact that he does not constitute a traffic danger. In other countries—for

instance Austria, West Germany—a medical-psychological examination of the driver is carried out. One question which arises in this connection, and which is of vital importance at the Symposium, is no doubt whether such a medical-psychological examination can lead to increased knowledge as to whether a person who has committed a traffic offence also may be presumed to constitute a greater traffic safety risk than the normal driver.

As is evident from the previous report, the purpose of action on the part of society in connection with traffic offences is inter alia to try to make the traffic offender a safer driver. The question which arises is whether the present methods can be considered satisfactory. In general, the present procedure implies that the traffic offender is deprived of his driving licence for perhaps one or two years. Following a test similar to that which new drivers have to go through, the offender thereupon may reappear in traffic.

More important still, however, is the question whether other methods exist—for instance therapeutic measures—which might be presumed to be more suitable to promote traffic safety than the methods now in force.

2. Offences other than traffic offences

2.1. Conditions in Sweden

According to Swedish legislation, driving restrictions shall be imposed if the driver in connection with some criminal offence has shown evident lack of consideration towards others or for other personal reasons cannot be regarded suitable to drive a vehicle for which a driving licence is required. The crimes on account of which driving restrictions in accordance with this rule are considered appropriate are, among others, car theft, murder, assault, rape, robbery and violent resistance. On the other hand, danger to traffic is generally not considered to be involved in cases

136 ¹⁾ In this connection no consideration is taken to certain rules which have other purposes, such as to bring

about the enforcement of vehicle registration, etc.

of fraud, embezzlement and fraudulent tax return.

The background to this attitude on the part of the social authorities is the following presumption: Such persons as in their general way of living do not show proper consideration towards their fellowmen or otherwise show proof of an irresponsible attitude and lack of social adaptability are extremely often regarded as showing similar negative characteristics in their capacity of motor vehicle drivers. The opinion is also that persons guilty of criminal acts of a more serious nature ought to be given special attention from the point of view of whether they may be considered to have the proper feeling of responsibility and consideration which must be required of a car driver. The basis for this standpoint is that these drivers are considered to be more inclined to have accidents than others.

The position taken by the Swedish authorities is sometimes based on a personal case study. This case study is at present carried out in such a way that the police authorities involved make an investigation regarding the offender's suitability as a car driver. This investigation might consist of, for instance, interrogation of the driver and reports from the Child Welfare Board and the Temperance Board. On the basis of this investigation and other facts, the authorities then determine whether a certain crime, for instance assault, shall result in driving restrictions.

2. 2. Conditions in certain other countries

France

The driving licence is not revoked in the case of, for instance, car theft, assault, acts of violence or rape. On the other hand, driving restrictions are imposed in cases of tax fraud.

Poland

The court can here decide that an administrative authority may impose driving

restrictions for a certain length of time "if the profession of driver has been misused in committing the offence". The court does not, in principle, have to confine itself to the actual traffic offences.

Britain

The fact that a person has been found guilty of some other crime than a traffic offence does not imply that the driver is deprived of the possibility of obtaining a driver's licence or that his driving licence is revoked. Exceptions are made, however, for car theft, inasmuch as this crime is regarded as a borderline case between theft and traffic offence.

USA

California

The driving licence is not revoked in the case of acts of violence, car theft, robbery, etc. On the other hand it is revoked if a car has been involved in a narcotic crime. — A person applying for a driver's licence is not questioned regarding other crimes than traffic offences.

Illinois

Driving restrictions may be imposed in the case of the following non-traffic offences:

1. Any felony in the commission of which a motor vehicle was used.

2. Perjury or the making of a false affidavit or statement under oath under a law relating to the ownership or operation of motor vehicles.

3. Automobile theft.

4. The following sex offences: rape, sexual crime against children, crime against nature and soliciting in the streets.

New York

If a driver has committed a felony, which is not a traffic offence, his driving license may be revoked if the crime involves the use of an automobile.

Wellington (New Zealand)

All crimes where the penalty imposed might be imprisonment may lead to driving restrictions. As an example of such

crimes—remarkable from a Swedish point of view—may be mentioned “throwing or leaving bottles or glass in a public place, when the offence is committed while driving or in charge of Motor Vehicle”.

3. Some statements on the question of “a man drives as he lives.”

3. 1. Traffic Safety Investigation of 1953 (SOU 1957:18)

Certain drivers are more accident-prone than others (p. 40—51)

Excerpts from the above mentioned report (p. 51):

Conclusions reached by the Investigation Committee.

From the report submitted in this chapter it is apparent, to begin with, that among all the drivers included in the driving licence register only a comparatively small number, on the whole, are guilty of traffic offences. Within this encumbered group, however, only a small number of drivers account for an abnormally large number of violations. These facts have been established by the investigations made, where no consideration was taken to the differences which exist between drivers so far as driving frequency and outward risk conditions in traffic are concerned. They can therefore not directly constitute a basis for an assertion that certain holders of driving licences are poorer drivers than others. The investigations in question have been carried out with the sole aim of ascertaining how large a number of those who are registered as driving licence holders actually have been found guilty of traffic violations. In this connection the comment can be made regarding these investigations that—even if they are incomplete in some respects—they have clearly shown that the very

great majority of drivers actually do not constitute any evident danger from a traffic safety point of view. The Investigation Committee has by reason hereof been strengthened in its opinion that the measures that ought to be taken to reduce “man’s” role as an accident factor in traffic should not have the character of general measures which affect all motor vehicle drivers. The Committee has instead arrived at the conclusion that it is urgent to direct its efforts to finding measures which would be effective against those drivers (not too many in actual numbers) who through their behaviour in traffic or otherwise give reason to believe that they are unfit to drive a motor vehicle.

The investigations reported in this chapter show, furthermore, that the fact that certain drivers more often than others are involved in traffic accidents cannot only be explained by the fact that they drive more than others or drive under more difficult conditions than other drivers. Their higher accident rating apparently depends on the fact that, on account of certain personal circumstances, they are more prone to be involved in accidents than others. The measures to be taken must consequently be aimed at this group of drivers in the first place. In order to be able to trace these drivers and be able to take appropriate measures against them, it is of great importance that we become informed of the individual circumstances which make them particularly predisposed to accidents. In the following chapters these problems will be taken up for consideration more in detail.

3. 2. The individual in traffic. A guide in traffic safety. Natur and Kultur, Sweden 1967

Personal characteristics of drivers and pedestrians (p. 3—11)

In the above article the statement is made, among others, that traffic offenders who drive under the influence of alcohol 1)

had much more frequently been subject to penalty than other traffic offenders, 2) had much more often been subject to penalty for crimes where alcohol was involved, and 3) that the number of acts of violence and assault and breach against public order was unusually high among the crimes referred to under 2) above. In the article a warning is expressed against misusing the term "Unfälle", "traffic accident-prone". The method sometimes proposed to exclude a certain small percentage of "accident-prone" persons from motor vehicle traffic and in that way in the future avoid the great majority of traffic accidents unfortunately does not coincide with the actual conditions. Furthermore, the statement is made, however, that often certain personal characteristics and weakness of character are the cause of traffic accidents.

3. 3. *Traffic Safety* — *a manmiliu problem*

(Brehmer, p. 169—198)

Excerpts from the above article:

Do the motor vehicle drivers who have been involved in accidents differ from those who have not been involved?

In a number of different investigations attempts have been made to try to ascertain whether there are any differences between the drivers who have been involved in accidents and those who (so far) have avoided getting involved. A comparison of the drivers has been made insofar as intelligence, mechanical ability, different personal characteristics, attitudes, visual acuity or other visual functions, knowledge, etc., are concerned. All of these investigations have shown only slight or no differences between drivers who have been involved in accidents and those who have not. None of the investigations has found the differences so great that it has been possible to construct a selection-programme based thereon, even if the differences often have been given wide interpretation such as "A man drives as he lives". The investigations have thus so far

not given any results useful in practice; instead they have mainly contributed to the folklore of traffic.

Selection of drivers. Summary and conclusions.

We have found that it has not yet been possible to establish any differences between various drivers so far as their being predisposed to accidents is concerned. The investigations carried out have serious methodical defects in that a number of different factors that might have contributed to the result have not been taken into consideration. This relates not only to the investigations which have aimed at comparing different drivers with each other but also such as have aimed at comparing different groups of drivers, for instance different age groups, with one another.

This does not mean, of course, that no differences exist. It only means that it has been impossible to ascertain any such differences in a clear manner.

We have also found that no proof has been established showing that drivers who are involved in accidents in any particular manner differ from those who are not involved, except to such a trivial extent as, for instance, the annual driving distance. This result does not either imply, of course, that no differences exist in various ways between drivers who are involved in accidents and those who are not involved. The fact is merely that no differences have been established to such a degree that they could be used for a selection basis. The connection between different characteristics and accident-proneness is very slight. This means that great uncertainty would arise in regard to decisions which might be made on the basis of an evaluation of these characteristics. This implies, in turn, that if a selection programme was constructed and put into effect, the probable result would be that only a very few per cent of a certain age-group would be permitted to obtain a driver's licence. In this way the number of accidents would, of course, diminish considerably as a result of the de-

creased number of drivers. Despite such selection procedure the possibility of the individual driver being involved in an accident would not change to any considerable degree, inasmuch as many of the important causes of accidents still would remain. By such stringent selection it would, furthermore, be necessary to eliminate a large number of drivers who would not have been involved in any accident if they had obtained a driver's licence.

4. Offences other than traffic offences

The first question to be put here is whether it can be assumed that a person guilty of assault, tax fraud, etc. is more prone to become involved in an accident than the normal driver. In other words, does a person who has committed such offences constitute a greater danger risk in traffic than the normal driver? If there is a certain probability that among those who commit offences other than traffic offences there are drivers who are more accident-prone than a possible normal driver, is it then possible, for instance by means of medical-psychological examinations, to arrive at a better basis of decision in order to determine whether the offender in question is a traffic safety risk or not? Can therapeutic methods be suitable for this type of driver?

Report on certain therapeutic measures used in the USA

Anders Tallqvist

Traffic Safety Research and Practical Traffic Safety Work in the U.S.A.

Impressions from a study trip in October — November 1967. (Excerpts from a travel report)

II Traffic Departments visited in different states

State of California
Department of Motor Vehicles
Division of Administration
P.O. Box 1828, Sacramento, California
95809
Chief of Research and Statistics:
M. Ronald S. Coppin.

Inasmuch as the basic schooling in traffic is not entirely uniform (at least not to the extent it is in Finland) great emphasis is laid in the State of California on the *education of driving licence examiners*.

In 1967 about 600 persons sent in applications to these courses. The requirements for admission to such courses for driving licence examiners are 4 years of college studies or 4 years of broad public contact or teaching experience. On the basis of a preliminary selection, about 350 persons were called to take part in a written test as well as an oral test before a jury of three persons, who accept far less than half of those who have been called to attend. After this procedure of selection about 1 % of those who attend the courses fail in their studies.

The training course of four weeks is divided up in class instruction and practical training out on the field. The class instruction consists generally of informal group discussions, led by the leading instructor of the course. To carry on these discussions daily homework is required, which generally takes 3—4 hours per

evening. The students are requested to carry on their homework in small groups of 3—4 students, after having gone through the problems individually. The group work at home and the informal class discussion, which is summarized, have been found to be a very effective method of instruction. During the course the students have five written tests. Each incorrect answer is taken up and discussed in class. Many driving licence examiners try to advance after 1 1/2 year's work and become driver improvement analysts. The lowest category of analysts have about 20 % higher salary than the highest category of driving licence examiners. The course for presumptive analysts covers two weeks and comprises intensive training in human diagnostics and human treatment. The main emphasis is laid on interview technique and group discussion technique.

It is not before the administrative measures the traffic offences and accidents come into the picture that the efforts of the huge apparatus to treat every holder of a driving licence individually becomes apparent. The system of treatment which traffic offences and accidents give rise to is to a very large extent imbued with an actual effort to *help* the individual. The principle of penalty is taken up for consideration only after repeated attempts on the part of the administration authorities to assist the driver.

In the State of California the point system has been put into effect. Every moving traffic violation results in a certain number of points. When three points have been registered, the driver receives a letter of warning (the most suitable content of this letter is being investigated at present /1967/). If the driver continues to be assessed points, he is called to attend an "informal hearing", where a trained clerk either individually or in a group analyses the difficulties in connection with the traffic violation. If the driver nevertheless continues to be assessed points for traffic violations or accidents, he is called to attend a "formal hearing". A trained

Driver Improvement Analyst then penetrates the case in detail together with the driver and submits a recommendation to some legal authority regarding legal measures in each individual case. Already at this stage the judge can either sentence the driver to a fine or order him to participate in a driver improvement course, led by trained and supervising leaders. Even at this stage an attempt is made to arrive at a formula for course activities which is not only effective but also administratively possible. Here may be mentioned one of the leading principles for driving licence analysts:

"... The great majority of drivers who require special attention for the sake of safety can not be handled in a routine or clerical way by any formula. They require individual study and appropriate action to the end of improving driving or raising the average level of proficiency of all drivers by the elimination of unsafe drivers" (Driver Improvement Manual 31.101).

The Driver Improvement Analysts have about 10 000—12 000 hearings per year. 5 000—6 000 drivers, classified as "negligent drivers", participate annually at present in group discussions, with about 10—12 participants in each group.

The above mentioned system was started in the 1940's when State specialists travelled around in California to decide in special medical cases in connection with the issuance of driver's licenses (epileptic cases, for instance). Today the driver improvement activities are centralized to a dozen districts in California. This, in the eyes of a Finlander, very positive attitude on the part of the administration is due at least partly to the fact that the driver's licence is a very important document for the individual, particularly as the general communication systems are very poorly developed. Everyone is more or less dependant on a car. Thus a legislation proposal is under consideration at present, implying that everyone ought to have the right in California to drive a car to and from his work, *regard-*

less of how many violations of traffic accidents he has been found guilty of!

The condition for succeeding in the policy to treat holders of driving licences individually, effectively and fairly is very far-reaching automatization in the registration of drivers with licences, their violations and accidents in traffic, their criminality, car registration, etc. In California, they are now building up an entirely automatic telecommunication system between different data centra as well as between field units and the data central. This automatic system (California Law Enforcement Telecommunication System = CLETS) is in contact with other state's similar systems and, in addition, with a huge communication system covering the entire U.S.A. with the FBI more or less in the center. This extensive system implies in practice that the individual patrol police through radio contact can within a few seconds obtain details regarding a suspect car, its possible driver, etc., in order later to be able to take proper action. It is considered that this system even protects the life of the individual policeman.

One link in the above mentioned telecommunication system is the automatic registration now being developed in California DMV. With millions of driving licences, car registrations, etc. a manual procedure is both unjust and impracticable. Thus they began in 1964 to transfer the data included in DMV to magnet-cylinders. The transfer to ADP of this data is progressing at a speed of 5,000 units per day. This is expected to be completed in 1970 and today about 7% of the data has been transferred to the ADP-system. The data bank being built up today is anticipated to cover the requirements for a decade but the system is "open-ended" so that it can be extended. For a research worker this automatic system is something of a paradise. A research worker can very quickly, for instance, obtain a great amount of data selected from a large number of licence holders chosen at random.

But Mr. Ron Coppin, head of the

Research Section of the Department of Motor Vehicles did not consider his role to be so attractive. A research worker in this situation might often come in conflict with a politically appointed administrator, who for the sake of his career is dependent upon quick and concrete replies and "broad headlines in the press". A leader for the research section has a great deal of work in getting the deciding organisations to realize the researcher's difficulties. He has to do a great deal of PR-work in order to avoid a situation in which the administrators might consider *his* work as a direct threat against them personally in their work. His research activities aim at evaluating the effectiveness of the administrative apparatus, and if his research unit finds that the system does not function satisfactorily, *he* is forced to put forth *alternative solutions* to the problems. One positive point in the research work of a State machinery, however, was considered to be the fact that the research results can very quickly be applied in practice. The Research section consists of five academic scientists plus office personnel. At present the following research projects are being carried out:

1. The possibilities of specifying number involved in traffic accidents.
2. Investigation of motorcycle accidents in California.
3. Investigation as to the effect of warning letters.
4. Investigation of driver improvement schools.
5. Multitreatment-study—a selective treatment of traffic offenders.

Of the completed research projects may be mentioned:

Characteristics of Negligent Operators.
A Controlled Evaluation of group driver improvement meetings.
Driving Performance of negligent drivers.

A Re-evaluation of group driver improvement meetings.

The Effectiveness of short individual driver improvement sessions.

The Fatal Accident re-examination program in California.

The 1964 California driver record study:

- Part 1. An introduction and methodological description.
- Part 2. Accidents, traffic citations and negligent operator count by sex.
- Part 3. Drivers by age, sex and area of residence.
- Part 4. The relationship between concurrent accidents and citations.
- Part 5. Driver record by age, sex and marital status.
- Part 6. The stability of reported accidents and citations.
- Part 7. The relationship between types of convictions and accidents.
- Part 8. The prediction of accident involvement using concurrent driver record data.
- Part 9. The prediction of accident involvement from driver and biographical data.

In summarizing, mention should be made of the fact that the population investigated has usually been very large, the methods of statistic analysis adequate and the results often very clear and surprising.

The State of Oregon

Department of Motor Vehicles

Salem, Oregon 97310

Director: Vern L. Hill

Research: Dr. Noel Kaestner

My special subject interest was the Department's driver improvement and control program. In order to obtain a driver's licence, compulsory traffic instruction is not required. Medical examination is required only in doubtful cases. All applicants for driver's licence have to go through:

- a traffic rule test
- a traffic mark test
- a test of the eyesight
- a driving test

The driver's licence is effective for two years. When renewing the same, it is not necessary to appear in person. The actual work of the Department begins in connec-

tion with control of the driver (a check-up) after he has received his licence. The Department obtains details regarding the driver's behaviour in traffic through the courts, the boards of health, insurance companies, members of the family, etc.

The Department's control program takes place in four different stages:

1. When traffic violations and accidents occur, they are recorded in the automatic data center. One recorded violation during six months or two within 12 months results in the driver's record being analyzed by a trained analyst, who shall determine whether there is any sign of a negative tendency. The analyst shall determine whether the driver shall receive a so-called advisory letter. If no disturbing tendencies are apparent in connection with the driver's violation or accident, no administrative measures are taken.
2. If the analysts are of the opinion that the driver is in need of assistance, he receives a so-called advisory letter. The driver is requested to watch his method of driving and show "his real ability as a driver by improving his behaviour". If nothing happens within 12 months after this advisory letter, he is cancelled from the list of so-called "problem drivers".
3. If, on the other hand, the driver within 12 months after the advisory letter is found guilty of some traffic violation (parking offence not counted) or is a guilty part in a traffic accident, he is called to attend an interview which is held by a trained interviewer at some place convenient to the driver. The role of the interviewer or analyst is to discuss the reasons for the problems in traffic, get an impression of the driver's attitude in general to traffic problems and discuss the possibilities of improving his behaviour in traffic. The analysts may arrange for the same kind of test for problem drivers as all prospective licence holders have to go through in order to obtain a driver's licence. The problem driver is made

aware of the fact that future measures on the part of the Department very much depend on his future behaviour in traffic.

4. If a driver even after such interview continues to cause problems in traffic, his "driving licence is put on the shelf" for a time. The usual duration of the first suspension period is 30 days. Subsequent suspensions usually cover longer periods. The policy of the Department is to avoid, so far as possible, driving license restrictions. Compared to the State of California, the State of Oregon takes action against the driver at a considerably earlier stage.

One can usually become a driver improvement analyst after two—three years as a driving license examiner. The presumptive analyst also has to go through a so-called "in service training" for three years. Those partaking in the course are made acquainted with the general procedure in the case of so-called problem drivers and have an opportunity of following experienced interviewers when they make their interviews.

The research activities of the Department are led by a psychologist, Dr. Kaestner. He is in charge of the research work, which is made easier because of the ADP-registration and which covers, among others, the following fields of problems: — What is the situation today? Which drivers commit what kind of offences? What kind of traffic offences are the most dangerous from the point of view of traffic safety?

— How do the Department's measures work insofar as the problem drivers are concerned? What should be the contents of the advisory letters? How shall the interviews be drawn up in order to have the right effect?

— What alternatives might be considered regarding the treatment of so-called problem drivers?

The investigations, which have been carried on for nearly a decade, showed to begin with, among other things, that

the driver improvement system reduced the number of offences but increased the number of accidents! These results, which had an unsatisfactory effect upon the taxpayers' attitude towards the Department, brought about a change and extension of the training of interview-analysts. Today it has been found that the system gives a better result. Dr Kaestner's situation was to a certain extent special and difficult, as he is a so-called outsider. His chief post is at the University of Oregon but he is engaged by the Department for the purpose of carrying on research. This might cause difficulties so far as co-ordination and collaboration is concerned, particularly when reverses occur.

Example of a typical interview with so-called problem driver (only the questions of the interviewer are recorded here):

The interview begins with a check-up of biographical data such as age, residence, civil status, etc.

"We have asked you to come here to the Department for the reason that you have too many tickets for fines recorded in the register. The purpose of this interview is not to suspend your driving licence. I want to make this clear from the beginning. We want to help you to understand that you get too many fine tickets. And we want to try to find out what the reason might be for these tickets. We want to get your impression regarding driving, legislation, etc. We want to make it clear to you what our Department does and what we expect you to do in this situation. I wish to point out again that it is not my duty to revoke your driving licence. This means that the chances increase that our talk here will succeed. What will affect your driving licence in the future is if you violate the traffic rules again or become guilty of additional traffic accidents. You will have to go through a traffic rule test. The result thereof will not, however, affect your driving licence. The result will merely inform you of your knowledge of the traffic rules and give us an idea as to whether this might be the reason for your traffic

offences. If you wish to put a question, you are perfectly free to interrupt me and ask your question. The only thing you have to do as from today is that you have to drive without any traffic violations or accidents during the next twelve months. I would ask you to sign here, confirming that you have received an explanation as to why you have been called to come and information as to the purpose of this interview."

"The first we will do is to test your knowledge of the traffic rules. As we have said before you do not have to worry about the result of the test. You shall proceed in the following manner. Read the first question out loud. When you have done so, choose the right answer to the question by choosing among the possible replies a, b, c or d. Say the letter to me." ——— "Which letter is the right answer?" ——— "Right. Now read the rest of the questions for yourself and say the answers to me." ——— "You only had two wrong. That's a real good result. We shall go over the two wrong answers you made. First, question number three." ——— "You replied . . . Do you at this stage want to change your answer?" ——— "Just that, now it was correct."

"Now we are going to talk about your violations. Which was your last one?" ——— "When did it occur?" ——— "Have you been involved in any accident since then?" ——— "When did that occur?" ——— "Did you get a fine for that accident?" ——— "Were you guilty of that accident?" ——— "Let us talk about that first." ——— "You said that you also had a speed violation in October. Let us then take that first. I will put a few questions in connection with that violation. Were you alone in the car?" ——— "What was the purpose of your drive?" ——— "Was it your own car?" ——— "Model and make of car?" ——— "How was the weather situation?" ——— "What time of day was it?" ——— "How well did you know the place?" ——— "Tell me what speed

you had and what was the official speed limit?" ——— "Can you remember how you felt that day. Physically and psychically?" ——— "Were you aware of the fact that you were exceeding the speed limit?" ——— "Why were you not aware of that?" ——— "Did you think that there wasn't any speed limit through that little town?" ——— "Did you think that you were driving at the permitted speed?" ——— "How did you react when the police stopped you?" ——— "Surprised, worried?" ——— "How large a fine did you get?" ——— "Has that fine-ticket affected your driving since then?" ——— "Well, let us talk about the accident you were telling about. What were the circumstances?" ——— "Were you alone in the car at the time of the accident?" ——— "What was the purpose of your trip?" ——— "How was the weather and the road conditions that day?" ——— "Did you drive at the permitted speed?" ——— "Did the accident occur at a road crossing?" ——— "How did you feel after the accident?" ——— "You felt nervous. Why?" ——— "Can you describe the accident? How did it occur?" ——— "What did the accident cost you? I mean that the insurance company paid the other party's car, but what did the whole cost you?" ——— "Was the car unfit for use for some time?" ——— "Did you hurt yourself in the accident?" ——— "Now we can discuss the last reported violation." ——— (The same routine questions again: when? place? alone? weather conditions? knowledge of the place? psycho-physical conditions?) ——— "Were you aware of the fact that you were driving too fast?" ——— "Lately you have consequently been guilty of ... and ... In view of this I would like to show you something. We have made up statistics showing how many people are guilty of traffic offences and are involved in accidents to a corresponding degree. These statistics are drawn up according to *so many traffic offences by drivers during five years!* Furthermore: in your age group

and with your number of offences during five years, *the average time between the traffic accidents is ... years and ... months.* Now we come to the statistics which more closely relate to you and your age-group. Only 7 % of those in your age-group are involved in traffic accidents as much as you have been during the past five years. 42 % of all male drivers in Oregon in your age-group drive for five years without a single traffic offence. We don't want to depress you but you see now to which category you belong statistically. You have ... speeding violations. Simply driving too fast means that one becomes involved in traffic accidents on the average every ... year and ... month." "We both know that you know the law paragraphs real well. You consequently know how you should act in traffic according to law. This implies two things, so far as you are concerned: You are not sufficiently aware of how you actually drive and you don't know when you are driving too fast. You are not a so-called "hot-roader" but you don't notice when you are in a hurry, when you are worried or when this affects your driving. This appears to be your problem. And now you know this. You also know that, if you get further fine-tickets in the future within a year or, in other words, if you continue in the manner you have followed so far, this means that we will have to suspend your driving licence. You consequently have a real good chance to choose." ——— "Here you will get a summary showing how our driving licence system works generally, how we try to improve people's driving habits, etc. You will also get a short summary of the traffic law in Oregon. Despite the fact that you showed such good knowledge when we tested you, it might be well to refresh your memory by looking over all of the most important paragraphs." ——— "It has been a pleasure to have a talk with you. I have a feeling that we have come in good contact with each other. We hope you decide that you are not going to lose your driving licence. Thank you very much."

Comments: The essential in the interview was a) not to deprive the driver of his driving licence, b) to show to which traffic group he belonged statistically, on the basis of his experience, and c) to point out to the driver that he himself actually can choose whether he wishes to keep his driving licence in the future or not. The interviewer succeeded in creating a real positive atmosphere during the interview and I got the impression that the person being interviewed really gave honest answers to the questions put to him. At the end of all three interviews which I had the possibility of attending, the persons interviewed expressed their gratitude for the opportunity of discussing their problems and receiving advice for the future.

State of Washington

Department of Motor Vehicles

Olympia, Washington 98501

Director: Douglas Toms

Chief Research Scientist: Alfred Crancer

Chief Division of Driver Improvement:

Dave Kirk.

In 1965 the Department of Motor Vehicles was established in the State of Washington. The work of the department comprises decisions as to the qualifications of the drivers, stimulating the drivers' effectiveness in traffic, the registration of motor vehicles, collection of fuel taxes and investigation of the circumstances re traffic security.

The Bureau of Driver Service is one of the department's five sections. This section's work comprises the testing of drivers, issuance of driver's licences and financial responsibility, as well as continued driver improvement.

To obtain a driver's licence each applicant must pass:

- a test of the traffic rules

- a test re traffic signals

- a practical driving test

- an examination of his hearing, eyesight and colour conception.

The personnel in charge of the above tests are specially schooled in order that

the driving licence examination shall be "valid, reliable and objective", i.e. the aim is to find out whether the driving licence applicant really has the knowledge and qualifications required, to see to it that the answers to the questions are uniform and clear. The work of the examining staff is constantly under supervision and the staff is given further schooling if requirements arise. After the practical driving test, every applicant receives a written report as to the result. The reasons in the case of failure are stated in detail. A second trial may be made within a week in case of failure.

In Washington the point system is in force, covering different traffic offences. The point system is a method for indentifying such drivers as from both a legal and traffic security viewpoint are in need of attention on the part of the department. After a certain number of offences, the driver receives a *letter of warning*. A driver who does not change his driving behaviour receives a notice to attend a *group discussion*. These group discussions are led by a trained discussion leader and lasts for six hours (3×2 h.). The purpose of the group discussions is to bring about a change in behaviour and attitude, which is not possible through lecture technique. The groups are small (N=10—12) and the discussions relate to the participant's personal traffic problems. If a driver fails to participate in the group discussions, he is called to attend a *personal interview*, which is led by a trained driver improvement analyst. The aim of the interview is to help the driver to understand his own traffic problems and the possible reasons for them. The one leading the interview decides, in accordance with a fixed decision rule, which control measures the department ought to take. "Suspension is an undesirable alternative. It means failure in our efforts to rehabilitate the driver. It is seldom effective as a correctional tool." (The Department's internal instruction, 1967). In deciding the control measures to be taken, the driver is appraised according to four ratings:

1. his adjustment ability
2. his ability to identify his own problems
3. his willingness to try to change his behaviour
4. his type of violations.

Of ten possible control measures after the interview, suspension of the driving licence is the last alternative.

All of the department's data is transferred to magnetic tape and is handled automatically. Each week the head of the driver improvement section receives from the data processing machine a list of the drivers who are to receive a letter of warning or will be called to attend group discussions or a personal interview.

When manual data processing was changed over to automatic data processing, about 1 1/2 million driving licence details were transferred to magnetic tape. The work was completed by 25 persons with an 8-hour working day and a five-day week for a period of 6 months. Today there are about 2 millions driving licence owners in the State of Washington. The automatic data processing was considered to be an effective and just system with such a great amount of uniform material. It was also considered that the automatic processing facilitated not only research but also co-operation between the department and hospitals, courts, credit bureaus, doctors, security organizations, etc.

The research and statistic sections belong to another of the department's divisions, "Bureau of Administrative Service". This is led by a statistician, Alfred Crancer, and consists of four scientists and a number of secretaries and assistants. Mr. Crancer told me about the same possibilities and restrictions in research within a large administrative machinery as I experienced in California: a conflict between applied research and basic research. The research results affect today very quickly i.a. legislation in Washington; this, according to hearsay, to a large degree due to the department's effective manager, Mr. Douglas Toms, which Crancer regarded as a positive factor.

The research results are published in a series of reports. So far (April 1968) the following have been published:

A. Crancer, 1967, "Motorcycle fatality study", 1965—1966 data.

A. Crancer, 1967, "Involvement of the problem driver in fatal motor vehicle accidents."

A. Crancer, 1967, "Accidents and violation rates for Washington drivers."

A. Crancer, 1967, "An evaluation of driver training based on accident and violation rates."

A. Crancer—D.T. Kirk, 1967, "Utilizing decision rules in driver improvement interviews."

P.A. O'Neill, 1967, "Relationship of accident involvement and number of citations: 1966 data."

A. Crancer—L. McMurray, 1967, "Accident and violation rates of Washington driver with medical licencing and driving restrictions."

Of the research projects now being carried on, the most interesting appeared to be the attempt to see the connection between behaviour in a driving simulator and behaviour during a driving test. Attempts are being made to substitute driving tests in traffic with driving tests in a simulator. In this way objectiveness and uniformity could be gained, among other things.

Another very interesting research project being carried on at present is an attempt to change the traffic behaviour of problem drivers through a new method. This method would apply in the first place to such problem drivers as during the interview have shown slight ability to adapt themselves to their personal situation or to understand their driving problems. The theoretical basis for this method is the B.F. Skinner's S-R-theory. In order to get his driving licence restored to him, each driver has to drive without any traffic offence or traffic accident during a certain fixed period. Each driver has to go through nine such periods in order entirely to eliminate the restrictions in his driving licence. The restrictions during

the first two weeks are the most stringent. If the driver drives his vehicle without any violations or damages during these two periods, he is transferred to a new group of drivers with less stringent restrictions. The rewards for correct driving consist of less stringent restrictions. But if the driver commits an offence or is involved in an accident during any of the periods, he will be moved, according to a scheme drawn up, to a group with more stringent driving restrictions. The idea is to get the drivers to immediately change their traffic behaviour through rewards (less stringent driving restrictions) or penalties (more stringent driving restrictions). The project is called "A program of behaviour modifications for problem drivers" and is led by Ronald Kleinknecht.

Of other current research results may be mentioned:

1. Study of driving behaviour during periods of serious mental and physical illnesses.
2. Study of driving behaviour of active narcotic and dangerous drug users.
3. Study of driving behaviour of chronic alcoholics.
4. Study of driving behaviour of persons who have attempted suicide.
5. Study of driving behaviour during periods of marital stress.
6. Study of the relationship of driving behaviour and credit rating.
7. Analysis of group dynamics sessions for improving the problem driver.
8. Analysis of a behavioural approach for changing driving performance of problem drivers.
9. Development of a personality and driving profile for problem drivers.
10. Evaluation of warning letters issued by the division of driver improvement to the problem drivers.
11. Study of the relationship between the written and road tests and driving performance.
12. Knowledge of rules of the road and defensive driving—problem vs. non-problem drivers.
13. Analysis of the driving records of

Washington's worst problem drivers.

14. Analysis of driving records of drivers with two or more drunken driving citations.
15. Analysis of driving records of persons with restricted licences.
16. Analysis of accident rates associated with the various types of violations.
17. Analysis of violations and accidents accumulated in 1966 by Washington drivers.
18. Analysis of violations by persons with no driver licence.
19. A survey of insured vehicles in Washington; 1967.
20. Determination of the effect of Sunday liquor sales.

The State of Wisconsin
Department of Motor Vehicles
Hill Farms State Office Building
Madison, Wisconsin 53702.
Training and Research Specialist:
Milo Hodgson.

After about four years as driving licence examiner one can be promoted to "driver improvement analyst". The introductory course here is five weeks and is to a large extent led by invited experts from different central fields, such as psychologists, lawyers, police, engineers, etc. After this course there is a so-called test year, i.e. in-service training. When a driver has collected 6 minus points in connection with traffic, he receives an advisory letter. When he has a total of 7—11 minus points the driver is called to attend either group discussions, if the driver's problem appears to be on the attitude level, or a personal interview if the problems depend on lack of knowledge or lack of ability. When the number of minus points amount to 12, the driver gets his driving licence suspended temporarily or usually for a period of three months. The same fate meets him if he fails to come to the group discussions or to the interview, led by driver improvement analysts. The group discussions comprise 10—12 participants and they are held three times,

for two hours at a time. The drivers may choose the time that suits them best. In connection with the personal interviews, a driving test of about 15—20 min. usually is arranged. During the interview the analyst and the driver co-operate with a view to discovering the individual problems and possible solutions. So far, no follow-up investigation has been made regarding the effect of these measures.

It should be pointed out that each holder of a driving licence receives a small card with information as to how the point system works and the consequences of too many minus points in connection with traffic.

State of New York

Department of Motor Vehicles

Division of Research and Development

800 No. Pearl St., Albany, N.Y. 12206

Director of Research: John O. Moore

Chief Research Bureau:

Phillip K. Raeder, Jr.

One scientist (research):

Gary E. Delin

In New York a driving licence may be obtained at the age of 16. This licence is a preliminary licence, which is obtained on trial for a period of six months, whereupon a regular licence is received. After repeated violations the driver is placed in a driver improvement school. The administrative and legal measures following repeated violations or traffic accidents are under consideration and experiments are being made at present (1967–1968). Today the situation is such that neither driving licence examiners or driver improvement analysts are trained in any way. The whole is regarded as an extra job. The driver improvement courses have so far consisted of lectures and the showing of frightening traffic safety film. Today a system is being tried out within the Department consisting of a risk pamphlet, so-called, and group discussions, in order to put into activity a larger group of traffic offenders at the same time. Each

participant receives a pamphlet which contains a number of drafted or sketched risk situations. These pictures and the participants' answers constitute a basis for discussion after having gone through the risk pamphlets individually. The pamphlet, which all of them receive, contains the most general risk situations in traffic, according to statistics. The philosophy of the booklet is based on the fact that a risky situation never is simple, the traffic situations can never be recorded in black and white. The message of the pamphlet may be said to be: "Take a chance, then be conscious of what a chance you are taking." An investigation as to the effect of the risk pamphlets is now being carried on.

All data within the Department has been transferred to magnetic tape and is treated automatically. During my visit a statistical investigation was also being carried out regarding the connection between traffic offences and traffic accidents. The idea is to determine whether those drivers who really are a danger in traffic are being instructed at the driver improvement courses or merely those who violate the rules without causing any damage. If a vague connection is apparent, there are plans to change the basis for the selection of drivers who are to attend the driver improvement courses (i.e. possibly the criterion for attendance ought to be accidents which have occurred and not traffic violations). Preliminary results have shown that 85% of the offences occur without an accident being involved and that in the case of about 80 % of the traffic accidents, no offence has been recorded. (These results do not agree, however, with the estimates made by the National Safety Council). Against this background the risk pamphlets, so-called, also include only accident situations in traffic.

The Department publishes "Statistical Bulletin" and "Research Report", of which, among others, the following have been completed:

- Res. Report No. 2, "Late model motor vehicle defect study".
- Res. Report No. 3, "An evaluation of the Driving Records of High School driver education students in New York State."
- Res. Report No. 4, "A pilot study of driver attitudes towards seat belts."
- Res. Report No. 5, "Study of seat belt utilization by 1962 car owners as a test of effectiveness of anchorage legislation" (1963).
- Res. Report No. 7, "An analysis of the chauffeur licence classification system" (1963).
- Res. Report No. 8, "Study of compact vehicles registered in New York State 1962" (1963).
- Res. Report No. 9, "A review of motorcycle safety problems in New York State" (1966).

III Central Organisations dealing with traffic safety research

Highway Research Board
National Academy of Science
2101 Constitution Avenue
Washington, D.C. 20418.

Highway Research Abstracts—a monthly publication with a summary of road traffic research being carried on, among other subjects.

Highway Research Record and Highway Research Board Bulletin both include scientific reports for different groups of research projects. About 40—50 numbers are published each year and each publication contains as a rule several research reports.

National Safety Council
425 N. Michigan Ave.
Chicago, Illinois 60611.
Research Director:
Thomas W. Planek, Ph.D.

The NSC carries on continuous safety work mainly through mass media and through extensive publication and infor-

mation service. The NSC issues a monthly publication called "Traffic Safety", which four times a year contains a scientific supplement called "Traffic Safety Research Review". Furthermore, the NSC has the largest safety library in the world.

IV Some Universities, who conduct traffic safety research

The Safety Research and Education Project
Teachers College, Columbia University,
New York, N.Y. 10027

Director: James L. Malfetti, Ed. D.

Associate Director for Research:

James R. Adams, Ph.D.

Assistant Professor of Education:

William G. Anderson.

Present Research Projects (1967):

"Driver Improvement Programs — The Phoenix Alcohol Research and Education Project." —

The basis here is the fact that penalty measures have not reduced the percentage of traffic accidents where alcohol has been a contributing cause, and the fact that about every other drunken driver who is arrested shows upon closer examination symptoms of alcoholism. The project in Phoenix is based on the idea that different types of drunken drivers shall be given different types of treatment by way of courses. The experiments are carried out in co-operation with a court.

Judgment of Impeding Hazard.—Attempts are made to work out a test which measures the driver's ability to comprehend and interpret quite risky situations in a simulated traffic situation under the effect of stress.

The Drinking Driver—Redefinition of the Host Role.—An attempt has been made by way of mass information in a limited community, Westchester County, New York, to change the prevailing custom at parties and gatherings that the hosts treat guests which have arrived at the party by own car to alcoholic drinks.

Community Influence on Accident

Rates.—Preliminary investigations have shown that cities with a high murder or suicide rating also have high accident rates in traffic. The investigation is now trying to determine whether the frequent traffic accidents have any connection with different expressions of social pathology (murder, suicide, various illnesses, etc.) and thereby get some idea as to the connection between social factors and traffic behaviour.

Smoking and Traffic Accidents.—A connection has been found evident between intensive smoking habits and being involved in traffic accidents. This investigation touches upon the above mentioned drinking driver investigation through common oral variables, so-called.

Communications for Safety.—The basis of this project is to investigate which message might be the most effective in influencing the behaviour of such individuals as are responsible for the training up of safety.

Part of the education at Columbia University covers vocational training of teachers. There are several courses for the training of driving school teachers and motor vehicle drivers, within the scope of an extensive safety training.

Impressions from a conversation with Dr. Adams:

“Most of the driver improvement courses so far carried on in the U.S.A. have not fulfilled the expectations originally expressed. This probably depends on the following, among other things:

— in an attempt to alter people's attitudes, one has calculated with rational people without emotional problems,

— one has had to deal with drivers who possibly have been driving for years, have been guilty of many traffic offences but have never been involved in any traffic accident,

— most of the persons who have led the courses have had poor wages, have had this as an extra job, have been policemen, school teachers or driving school teachers, etc.

The ideal teacher to lead a driver im-

provement course should have i.a. the following ideal characteristics:

— be able to teach people to control their emotions,

— be able to clarify each driver's individual pattern of mistakes,

— get people to pay attention to the emotional problems, to realize their own limits, to accept a more pessimistic view of their possibilities to cope with risky traffic situations, and

— to influence drivers, who have successfully coped with a risky situation in 99 cases out of 100, not to take a chance again in a situation which cannot be predicted individually but nevertheless statistically.

In connection with accidents the situation is often that the driver has been unable to adequately apprehend the risky situation: “lack of attention, alertness, failure to perceive and understand.” It is not always possible to speak of carelessness in traffic, a driver might *conceive* a situation, which in reality is risky, as safe.

A driver is particularly dangerous when he or she notices that he or she is making a mistake. Such a situation hurts their self-confidence and the driver then tends to insist on dominating even in the mistake being made.

One of the greatest traffic problems in the U.S.A. today is drunken driving. It is estimated that in approximately every other fatal accident in traffic, alcohol is a contributing factor, as in also 15—20 % of all traffic accidents. The so-called alcohol accidents are the most severe, so far as injuries are concerned. A sober driver can in general do something to mitigate the consequences of the accident, but alcohol accidents, crash . . .

In Phoenix, Arizona, experiments are being made at present to try to rehabilitate drunken drivers in different ways. The experiments are being carried out in co-operation with a court. Of the test clientele, a small group was found to be so-called social drinkers. The majority (85 % in Phoenix) are so-called problem drinkers or drivers with evident alcoholic

symptoms. The use of alcohol is due to deep and serious individual problems. In the U.S.A. the attitude towards alcoholics is gradually changing. Alcoholism is more and more beginning to be regarded as an illness that calls for adequate care. It was previously considered that an alcoholic ought not to take up a bed at a hospital, inasmuch as the chances of curing him were not so great. Drunken drivers, for instance, were rather put into jail. But, as mentioned, this attitude is changing. A relatively new problem in traffic is narcotics.

The tests being carried out in Phoenix are based, i.a. on the idea that the reasons for alcohol problems differ and have an individual pattern which demands a therapy of individual pattern. "YOU-VE GOT TO DEAL WITH THE REAL PROBLEM. YOU'VE GOT TO DIAGNOSE WHAT THE PROBLEMS ARE." Why, for instance, make the drunken drivers pay a fine or put them in prison? They are sentenced to pay a fine, they continue to drive, they are sentenced again, they still keep on driving, are fined again, continue driving. But in the meantime they might kill both themselves and others. A fine is no solution to personal problems. The solution does not appear to be, for instance, individual therapy or group discussions during a fixed time of 2, 4 or 6 hours; instead it should be as long as the individual requires it . . . These circumstances, among others, demand much of the therapist, whether the driver improvement course is individual or in group.

Research regarding alcohol and traffic is of central importance both here (at Columbia University) and at other research centers in the U.S.A.

To return to the problem driver without any direct alcohol problems, the following has been tried out at the University: a problem driver has been out driving in traffic accompanied by a traffic therapist who has commented the driving the whole time, pointing out mistakes, criticizing the driver's style where it has

been necessary in order to help the driver to get a better view of his own manner of driving. This could be used for driver improvement purposes.

In the case of problem drivers where alcohol does not play any part, one can distinguish between three categories in general:

"The Can'ts" with language problems or physical, visual defects,

"The Don'ts", who are badly trained, and

"The Won'ts" who have a distorted traffic attitude.

These categories require special diagnostics and special therapy.

Notes from an interview with Dr. William G. Anderson:

The most central problems today regarding traffic improvement are:

— the education (training) of driving school teachers,

— the driving licence tests, and

— the continuous control and training of the drivers.

The use of simulators in the training of drivers appears to be a result of consideration for economic profit rather than an effort to make the traffic safety education more effective. The use of simulator in the training of drivers should be made with distinction. Simulators can be of good assistance in training the driver's perception in dangerous situations. The contents of the films must be based on actual accident data. Not all instruction can be gained by the use of simulators.

A book will probably be published in May 1968: Prof. *William G. Anderson*, "In-car Instruction: Methods and Content. A manual for Teachers of Driver and Traffic Safety Education." Addison-Wesley Publishing Company, Reading, Massachusetts 01868. Editor: Allan M. Wylde.

New York University
School of Continuing Education and
Extension Services
Center for Safety Education
Washington Square, New York. N.Y.
10003.
Director: John V. Grimaldi, Ph.D.
Associate Director: Leon Brody, Ph.D.
Professor of Education:
J. Duke Elkow, Ph.D.

Notes from an interview with Dr. Leon Brody (11.10.1967).

Activities from the DI-schools (DI = driver improvement) have so far been afflicted with certain basic mistakes. In many cases the principle "trial and error" have been followed, it has not been possible to build up this service on a scientifically stable ground. DI-activities have been carried on in the U.S.A. for about 30 years. But during the last decade the interest for DI-activities has increased considerably again. This is to a large extent due to the fact that we know much more about the question why a problem driver is a problem driver and the fact that there is more to learn than we now know. During the past three-four years a more national-wide emphasis of DI has become apparent in that different mass-media (newspapers and radio) to some extent have realized that certain points can be emphasized in a special way so that, it is hoped, the individual driver's behaviour is affected in a positive direction. As an example may be mentioned a TV-program three-four years ago. The program was sent at so-called good sending time. The program was of such a nature that the public looking at it could participate in the program in different ways and at the end of the program series approximately 16 million people participated. The program was arranged in such a way that the public was given problems to solve which applied to traffic safety. Forms on which the solutions could be written down were distributed through newspapers and gasoline stations. Answers to the problems could be sent

in and the correct solutions were subsequently presented in a TV-program by experts in this field. One can be certain that this program did not change people's traffic behaviour but it probably created a much greater interest for traffic safety. It somehow opened the door. And later, during the past two years, an increased number of DI-programs have been started. But we should not be too optimistic as to the effect of these programs. We must remember that we deal with a grown-up public of listeners, who work during the daytime and shall participate in so-called improvement courses in the evenings.

To summarize: There appears today to be quite a large interest for traffic safety in America and there are many different DI-programs under various auspices and in different connections, but so far it cannot be said that there is a single road to the solution of the problems, and more can be done to establish better scientific methods for DI-activities.

In this connection a system which is usually not included in the idea of a DI-system should be mentioned, namely the point system. The introduction of this system in the various states can be regarded as one of the most significant measures in the past few years to promote traffic safety. Dr. Brody would say that a similarly important measure from a traffic safety point of view was the introduction of safety belts in the U.S.A. The point system differs quite considerably from one state to another. But common to all is that a driver can be warned after having received a certain number of points for traffic violations or traffic accidents. If the driver does not show any improvement, he may be called to attend a hearing where the administrative representatives decide whether his driving licence shall be revoked for either a short or a long period. In some states a somewhat different system prevails, which perhaps is not so practicable but probably very effective from a pedagogic point of view. In California, for instance, a driver receives a warning letter after having been

assessed a number of points for violations or accidents. If the driver continues his dangerous traffic attitude, he is called to attend a special interview, which is held by a specially trained interviewer. The aim of this interviewer is not to impose a penalty of any kind on the driver, not "put the licence on the shelf". His purpose is to go through together with the driver the points so far assessed, discuss the driver's behaviour which has resulted in these points, draw attention to the problems which most likely lie behind the driver's behaviour and discuss different methods as to how this dangerous attitude can be changed, etc. This interview takes place between the warning letter and the formal hearing. This interview is probably very correct from a pedagogic point of view, as it takes place between two pairs of eyes. But this system might appear to be somewhat un-economical. A few states have therefore compromised and let the judges, who are in charge of traffic offence cases, decide whether a driver shall be sentenced to a fine or driving restriction or be compelled to take part in a DI-course. These courses usually cover a time of 6—8 hours. A DI-program can be carried out by way of group discussions, lectures, the use of films and other picture material, etc. Of these methods the group discussions are by far the best pedagogic method due to the fact that in this manner the individual can best vindicate himself, which is not possible during a lecture, for instance. Unfortunately group discussions are not carried out to the extent desirable today, nor in the manner they ought to be carried out.

The Northwestern University
The Traffic Institute
1804 Hinman Avenue
Evanston, Ill. 60204.

This institute has a very extensive publication and library service. The most important publications are, on the one hand, the monthly "Traffic Digest and

Review" and, on the other hand, the publication "Current Literature in Traffic and Transportation", also issued monthly, which gives a summary of the latest written matter in the field of transportation.

University of South Dakota
Department of Psychology
Driver Behaviour Laboratory
Vermillion, South Dakota 57069
Assoc. Prof. Psychology:
Norman W. Heimstra, Ph.D.

The Driver Behaviour Laboratory is an integrated part of the University's psychological department. At the laboratory, which is led by Dr. Heimstra, several investigations are being carried out which, it is hoped, will give valuable information regarding the human aspects in regard to car driving. The research is being carried out under the leadership of psychologists and is a part of the student's higher graduation work and training to become research psychologists. The laboratory also has a group of technicians (engineers) for the construction and maintenance of the very complicated apparatus at the laboratory.

When I was there the following research projects were being carried on:

It has been ascertained that different drivers have an individual tendency to *take a risk*, great or small, in an overtaking situation, for instance. Now attempts are being made to see how these people, whose risk tendency has been ascertained by practical tests, behave in a simulated risk-taking situation in the laboratory.

Film instruction and risk-taking behaviour in traffic.

With the assistance of extreme groups of risk-takers in traffic, investigations are being carried out as to whether such a risk attitude can be affected by the aid of film instruction.

It is desirable to find out the capacity of the different measuring instruments in

order to test driving behaviour. The persons tested have to go through:

- a) an objective measurement of their attitude in an actual traffic situation, with the aid of Greenshield's Drivometer,
- b) a measurement of the psychomotor attitude in a driving simulator,
- c) examination held by at least 5 examiners in an actual traffic situation. Their judgments are based on the
 1. Roger-Lauer scale (1953)
 2. McGlade road check (1961) and
 3. Neyhard driving skill exerciser (1956)

(3. was, according to hearsay, the most effective measuring gauge, then came 1., and the least effective appears to be 2.),

d) the paper-and-pen test:

1. National Test in Driver Education (1961)
2. Sportmanslike driving (1962).

The test groups consist of a) 50 very experienced drivers and b) 50 inexperienced drivers. All of these are exposed to the entire test battery and the idea is to find out which of these tests makes the most effective differentiation between the groups.

Among the reports published, particular mention may be made of a very thorough bibliography covering fatigue investigations during the years 1927—1964, which were published in Psychological Abstracts.

Highway Safety Research Institute
Institute of Science and Technology
The University of Michigan
City Center Building
220 East Huron, Ann Arbor,
Michigan 48108.
Rudolf G. Mortimer, Ph.D.
(Human Factors)

The work being carried on by the Human Factors Group at the Highway Safety Research Institute consists to a large extent of research projects, carried out as contract work for the Department of Transportation in Washington, D.C. Thus the most important project today

is an investigation regarding the *alcoholic in traffic*. The purpose is to find out to what extent alcoholics are a traffic problem, whether there exist different types of drunken drivers, whether it is possible to find some kind of a measuring instrument for the differentiation of drunken drivers and normal drivers, whether there are different types of alcoholics in traffic with different violation or accident patterns, etc.

The test group consists of approximately 2 400 patients with alcohol problems, who have been in contact with hospital milieu at some time during the past decade. As much data as possible has been collected regarding these patients, taken from hospital records, admission documents, from test situations made, treatment given, etc. In addition, data is available regarding their traffic behaviour and possible criminality apart from traffic violations. For the sake of comparison regarding this data, a selection of approximately 1,000 normal drivers, so-called, has been made.

The work at the Highway Safety Research Institute will at the end of 1968 be concentrated to a central building which was being erected at the time of my visit. In the future at least five different departments for traffic safety research will be working under the same roof, viz: System Analysis, Public Factors, Physical Factors, Biomechanical-Biomedical Factors and Human Factors.

Survey Research Center
Institute for Social Research
University of Michigan
Ann Arbor, Michigan,
Donald C. Pelz, Ph.D.

At the Survey Research Center, which is associated with the University of Michigan, a very interesting project is being carried out to ascertain *the reasons for traffic accidents, particularly among young drivers* in the age of 16—25. The problem has been approached in a rather new way. Traditional investigations in this field have

often been based on actual accident data. In this investigation, led by *Donald Pelz, Ph.D.* and *Stanley Schuman, M.D.* (the former a psychologist and the latter with medical education) the work has been started from the other end, so to speak: an investigation is made of a selected group of drivers in the age of 16—25 years, who represent an average of drivers in that age in Ann Arbor, Michigan. By means of a standardized interview, the research team receives details as to prevailing attitudes, moods, development tendencies, etc. during this age period. This data is subsequently correlated with details of traffic accidents and violations, without making any direct effort to bind the data obtained to the accidents. In this manner it is possible to obtain a general result regarding motivation factors, which usually are considered to be connected with dangerous driving behaviour. By fixing a certain age, details are also obtained as to the importance of relatively temporary variations in this connection. The investigation utilises in its theory composition many results previously obtained in the field of the human factor in traffic, as well as general psychological theory composition in different stages. The purpose of the research project is lastly to try to change the dangerous traffic attitude. The working name of the project is: "Proposed program to change young driver's attitudes and behaviour." The background details from the investigation may be obtained from the article "Young Male Drivers", written by Schuman-Pelz-Ehrlich-Selzer in *The Journal of The American Medical Association*, vol. 200, 1967, p. 1026—1030.

Michigan State University
Highway Traffic Safety Center
The Kellogg Center for Continuing Education
East Lansing, Michigan 48823
Director, HTSC: Gordon H. Sheehe
Driver Licencing: Fred E. Vanosdall.

The education of *driver improvement*

analysts is extremely thorough. To act in this capacity in Michigan a Master of Arts degree is required, which probably is unique in the U.S.A. The Driver Improvement Program built up at the HTSC (chiefly through Dr. Mann) is in use in several states, Wisconsin, among others.

Examples of research projects at the Highway Traffic Safety Center:

Personality Characteristics of Effective Driver Improvement Interviews:

Development of Airphoto Technique for Studying Driver Behaviour and Traffic Flow Theory,

The Effect of Small Cars on Traffic Flow and Safety,

Economic and Social Effects of Highway Improvement.

V Research Institutions

Accident Research Center
American Institutes for Research
Washington Office
8555 Sixteenth Street, Silver Springs,
Maryland 20910
Associate Director:
Dorothy S. Edwards
Researcher: Clifford P. Hahn.

Three research projects re traffic safety were in the foreground when I visited the Center:

1. In 1962 an investigation was begun regarding the possibilities of predicting accidents on the basis of a short observation of driver behaviour. The drivers were unaware of the fact that their behaviour was being observed. 304 male drivers, more or less selected at random, were filmed for five minutes in a traffic situation. Five policemen were asked to make observations of all the mistakes made, including illegal, dangerous and impolite traffic behaviour. Only slight agreement with the observations could be ascertained. Not even a repeated run of the filmed sections of traffic behaviour resulted in complete agreement in the judgment of the mistakes made. The differences in observations appear to depend more

upon differences in interpretation, however, than lack of observation.—It was found, among other things, that 97 % of all the filmed drivers committed at least one mistake during a 5-minute sample in traffic. The number of errors on the average was 9.18. Speeding was the most common (87 %). Thereupon followed Changing Lanes Without Signal (80 %), Failure to Stay in Lane (63 %) and Turn Without Signal in 46 % of the incidents.

— Dr. Hahn considered that the filming of traffic incidents gave a very good criterion as to behaviour in traffic situations.—Attempts are now being made to predict traffic behaviour (violations and accidents) for five years after these observations.

2. From the foregoing investigation the idea of driver improvement experiments was projected. There are three experiment groups:

I. Small groups ($N = 4-5$), whose traffic behaviour had been filmed, took part in a couple of hours' discussion regarding the traffic behaviour in general, good and bad, and their filmed behaviour in particular. The intention was to test whether these sessions broadened the drivers' look-out on their own driving behaviour and thereby reduced their participation in traffic accidents. Control groups are not engaged in this "treatment", and the time for after-control is several years after the session.

II. A test is made of the drivers' perception and psychomotor attitude. Then the group discusses these results with the drivers and follow up their traffic behaviour, once again compared with the control groups, during a number of years after the tests.

III. Groups of drivers discuss both their filmed behaviour and their test results. The idea is to see whether these measures are of any importance for traffic behaviour.

3. The driving behaviour is recorded by reports that are regularly sent in

regarding traffic accidents. At the time of my visit the chief interest appeared to revolve around the connection between driving behaviour as observed in traffic and in a simulator situation. The method was quite original: Two observers took a taxi from some place about 8 miles from the Research Center. Unaware to the taxi drivers, the observers made note of all the mistakes made during the course of the drive. When the taxi had arrived at its destination, the driver was asked to take part in a test, i.e. drive a turn in two driving simulators and take part in a psycho-motor test. A test is then made of the connection between four background variables, 14 traffic behaviour variables, 10+17 driving-simulator variables and 25 psycho-motor test variables. One of the driving simulators was moveable sideways, and with the accelerator the speed on the film was regulated, the projection of the film being shown in colour on the movie screen. So far, however, the connection has been found to be unclear.

Examples of research projects carried out by the personnel at the Institute:

"Studies of Human Behaviour Affecting Safety on the Pennsylvania Turnpike",

"Human Engineering Factors Related to Highway Design and Traffic Problems",

"Measurement of Driver Reactions to Road and Tunnel Conditions",

"Effects of Drugs on Driving Behaviour" (a literature study),

"Effects of Drugs on Warning Signals",

"Human Factors in Accidents" (an extensive literature study),

"Personnel and Training Factors in Fighter Aircraft Accidents",

"Research on Near Accidents",

"Status of Research on Childhood Accidents",

"Home Accident Behaviour", and

"Effectiveness of Door Markers or Escape from Refrigerators".

Porto-Clinic/Drivers Safety Service Inc.
405 Lexington Ave.,
New York City, N.Y. 10017.

The above company is a private-owned organization, whose business it is to try to solve problems in connection with personnel at industries and drivers in traffic. The company has taken on business both from the private industries and from different State governments.

Some of the tasks are, for instance:

- to determine the scientific importance of New Jersey's driver clinic activities,
- to work out methods by which to choose and employ drivers for different companies with extensive transport business,
- to participate in tests for the planning of a "traffic-secure car",
- to work out schooling methods for so-called problem drivers,
- to work out a special system for the training of handicapped drivers.

Chief experiences:

— The experiments with driver clinic activities have shown the importance of an individual treatment of drivers who have committed repeated traffic offences or been involved in several traffic accidents. The tests carried out, as well as the group discussions and individual treatment are of greater importance for the reduction of traffic offences than for the reduction of the number of traffic accidents in which the driver is involved. As regards group discussions as a technical factor to influence traffic offenders, the most effective groups appear to have been composed of different types of traffic offenders, i.e. it appeared to be preferable to have drivers in the same group who have violated the speed rules and drivers who, for instance, have failed to observe traffic signals. This combined group was considered better than a discussion group consisting solely of drivers who have exceeded the speed limit. The number taking part in the discussion groups should preferably be 6—8, 12 is considered too many;

— in comparing group discussion technique and individual technique "between two pairs of eyes", the latter, although less practicable, we considered more effective from a rehabilitation point of view;

— attempts have also been made to work out a model for a driver in a "man-machine" system;

— experiments are being carried out with the aid of cartoons to distinguish between efficient drivers and inefficient drivers (Kole-Henderson, 1966). Pre-tests had shown that two groups of drivers interpreted the cartoons with traffic incidents in such a way that the test could possibly be used to distinguish the efficient drivers from the inefficient drivers. For the time being, however, one might question the grounds of validity so far as the test is concerned.

Den mänskliga faktorn i vägtrafiken

*Diskussion vid Svenska Försäkringsbolags Riksförbunds årsmöte
den 21 november 1969*

Ärade församling! I egenskap av ordförande i Svenska Försäkringsbolags Riksförbund ber jag att få hälsa er alla hjärtligt välkomna till den offentliga delen av vårt symposium om den mänskliga faktorn i vägtrafiken, *The Human Factor in Road Traffic*. Riksförbundet anordnar det i samråd med Trafikmålskommittén i anslutning till sitt årsmöte som har hållits idag på morgonen.

Vi har glädjen att här se närvarande en rad representanter för olika sektorer av svenskt samhällsliv och jag vill sålunda hälsa välkomna företrädare för finansdepartementet, riksbanken, försäkringsinspektionen, polisiära myndigheter, medicinska myndigheter, trafiksäkerhetsorgan, statliga och andra samt företrädare för näringslivet och dess organisationer. Jag vill vidare rikta en hjärtlig välkomsthälsning till representanterna för våra nordiska systerorganisationer och vidare till representanterna för pressen. Ett särskilt välkommen vill jag också rikta till våra symposiedeltagare. Majoriteten av dem kommer ju från utlandet.

On behalf of the association of the Swedish insurance companies I want to express a heartily welcome to our guests from abroad, from Austria, Finland, Great Britain, Holland and from the council for Europe. And I want to bring you our sincere thanks for your kind and skilful participation in this conference. I hope that these discussions will stimulate and influence the further work in our different countries in the field of road traffic security.

Trafiksäkerheten är ju allmänt debatterad och det är naturligt att försäkringsbranschen deltar i den debatten och aktivt söker att stödja den forskning som äger rum. Trafikdöden är en farsot. Vi får inte acceptera att det varje år dödas och lem-

lästas tusentals människor. Under en tidsperiod av 15—20 år betyder det att, med den dödsfallsstatistik som är i trafiken, motsvarar det utplånandet av en medelstor svensk stad. Vi får icke acceptera sådant.

Under många år har diskussionen koncentrerats till frågan om säkra motorfordon och säkra vägar. Det är säkert väsentligt. Men minst lika väsentligt, jag skulle vilja påstå i grunden väsentligare, är säkra förare utan vilka de tekniska hjälpmedlen ändå inte kan fungera.

Det måste anses riktigt att lagstiftare och försäkringsgivare samverkar i dessa frågor. En underhandsförfrågan från trafikmålskommittén om riksförbundet hade intresse av att vara med och behandla de frågor som berörs i detta symposium möttes omgående med starkt positivt intresse från riksförbundets sida. Jag ber nu att få överlämna ordet till borgmästare Yngve Kristensson, som är ordförande i trafikmålskommittén och som välvilligt ställt sig till förfogande för att leda dagens debatt.

Yngve Kristensson

Thank you very much, Mr. Chairman. Ladies and gentlemen! The discussion we shall have today shall exclusively deal with the human factor in road traffic. This choice of subject does not in any way imply that we underestimate the other factors in traffic, namely the traffic milieu and the vehicles. I would rather emphasize the great demand in traffic safety work of co-ordination and a total view of the subject, as well as a stronger political engagement. It is a matter of security which demands large investments in parity with every other question of security. Such investments are in fact economically very profitable. Words only can't help. We will very soon have to decide to what extent we are prepared to invest in traffic milieu. Are we, in other words, prepared to take considerably larger expenditures

than at present in order to adapt traffic milieu to human beings? What demands shall we place on manufacturers of motor vehicles? It is another question where much still remains to be done. For the co-ordination in traffic safety work a decision on high political level is required. However, today we shall put the human being in focus. I think it is important, particularly from the viewpoint of traffic safety, that we do not forget the road users' personal responsibility. For all of us it would naturally have been considerably more pleasant if we could turn over the entire responsibility to the road constructors and car manufacturers. Such an attitude, however, I believe would have been unjustified from the traffic safety point of view. The research that has been carried on in this country regarding the deviating road users has been inconsiderable. This depends mainly on the fact that we have not yet obtained the cross-scientific traffic research institute that we, who deal with this question, have demanded for such a long time. We have therefore naturally turned to the rest of Europe in order to get help in solving our problems on a scope and in a field where so many preconceptions exist.

It is a pleasure for me to be able to say that we have today succeeded in getting together the most well-known experts who can be obtained at present. Doctor Biehl from the Kuratorium für Verkehrssicherheit in Vienna, so successful in traffic safety work, Professor Buikhuisen from Holland, who through his often technically very advanced research has given us much knowledge regarding the road users, Doctor Willett, whose book "Criminal on the Road" has become a standard work for all who wish to try to penetrate the problem of criminality on our roads. The Applied Psychology Research Unit in Cambridge is a well-known institution in research circles. Doctor Brown has promised to inform us of some of the results of this research. We have also the pleasure of seeing a representative from Finland, Doctor Tallqvist, who is the one who in

the Nordic countries most thoroughly has dealt with the question of how we shall be able to improve the traffic behaviour of the deviating groups. Finally, we have Mr. Bishop, who in the Crime Committee of the Council of Europe has the difficult task of co-ordinating the work being carried on in this field. The Swedish delegates are probably so well-known to all of us that they do not call for any special presentation. I therefore immediately give the word to Doctor Willett.

Terence Willett

Mr. Chairman, my Lord Mayor! Let me begin by saying what an honour it is to be asked to take part in this penal symposium on this to me most absorbing and important matter. I suppose as a sociologist and as a criminologist I look at the problem of road traffic offences and road accidents in a rather different way from many other people. I see it not as an individual problem but perhaps more essentially as a society problem—as a group problem. In being that, it is all the more difficult to solve the problem, as I think we shall see.

What I am saying is that just as society gets the kinds of crime and the kinds of criminals that it deserves and creates, so it gets the kind of driving and the kinds of drivers that it creates—drivers that are products of the society in which they are brought up. People behave on the roads as they are brought up to behave. Typically, we have a few good people, rather more bad people and a majority of perhaps normal people who are sometimes good and sometimes bad. How much the normal people are influenced by the others we can never be quite sure. We should, however, look at the characteristics of the problem people, those who have more accidents than we would expect to find by chance alone and those people who commit offences consistently. And we find from these investigations in most societies where this research has been done that

they have a few things in common that are quite interesting. One of the things that they have in common is a tendency to have problems not only in driving but in other fields that are not connected with driving at all at first sight. Mainly they have convictions for offences that have nothing to do with motoring and their lives are often in rather a mess. That is why they probably can't give their attention to driving and that is why they act out a good deal of the aggression they may feel towards the society they live in. To me this makes a good deal of sense because I have lived with it so long. To others it seems to be a little bit unique. Another thing that many of these problem people have in common is that most of them are men. Like crime and other forms of social deviations, we find that it is almost exclusively a male phenomenon and I think we have to ask ourselves why this is so. Probably an answer might be that so many accidents that cause damage and injury and so many offences of a more serious nature are an expression of behaving in a primitive sort of way that is probably a little bit out of date in the highly sophisticated technological society in which we live. And, my Lord Mayor, you mentioned the damage that is caused on the roads in terms which are very graphic, the elimination of a Swedish city. And of course we know that war is primitive, and we know that war is an expression of primitive behaviour. Could it be that we are talking about very much the same thing?

Another problem that we are faced with is that of attitudes, attitudes towards life, attitudes to the role we play, attitudes to the part we take in society. And if we are going to do something about this, if we are going to reduce this damage or these offences, we have got to change these attitudes—change these attitudes towards driving, stop taking it for granted that it is something easy and simple that anyone can do. As I have said, it is out of date. We have perhaps got to look at driving in a similar way in

which the modern pilots look at the problem of flying, to see it as a behaviour in which the less primitive value of manly virtues are dominant, namely discipline, skill and self-control. And if we would reduce damage, death and offences on the roads, then we have got to have people to see driving more in this way. But, in the last resort, the answer to this problem, like problems of crime and delinquency, lies perhaps more in the family and in school than it does in the courts or in the prisons or anywhere else. I admit, of course, that we do need to improve the system, we need to improve the roads, we need to improve the vehicles. But it is the individual and his ideas of what constitutes good driving and good social behaviour that means most of all. And that is a social issue, more a social issue than a technical issue. We have got to try and convince people of the truth that is brought to us by research in this field: the people drive as they are. And if you would look at the sort of society which you are in, you should look not only at the penal system, but you should look at the roads, because that would perhaps tell you more about the society than almost any other area that you could look at quickly.

Wouter Buikhuisen

I think it was about in 1950, or something like that, that there was a very popular American song that sounded something like "Give me five minutes more, only five minutes more." I wouldn't like to sing this song here but I would have liked to ask you indeed to give me five minutes more because now I'm afraid I can give you only a small picture of the scope which I had preferred to show you as a whole. I'm asked here to give some information about research regarding drunken drivers. In the Netherlands we have indeed carried out a rather extensive research in this field and it is especially because the number of subjects convicted

for drunken driving are increasing steadily. And therefore our Ministry of Justice has asked my institute to carry out this research and the first thing we were looking after was: Has our penal system any special preventive effect with regard to drunken driving?

Usually it is very difficult to answer questions but in this case I am in the fortunate position to say that it is rather easy to answer this question because our penal system has no special preventive effect in this respect. For instance, if you would send a group of drunken drivers to prison unconditionally, then we found that about 38% is convicted again for drunken driving. If you should send them only conditionally to prison, then you find that also 38% is committing this crime again. And if you would disqualify them from driving, then you can see that 36% is reconvicted again for drunken driving. If you would not disqualify them, then you see that 37% is reconvicted again.

And now you can ask yourselves, and I think it is a very important question: Why is our penal system in this respect ineffective? And then I logically think about three possibilities that I have chosen to discuss here.

The first possibility is that our law enforcement is not effective. In general you can say that rules lose their power if you can easily break them. With regard to drunken driving this means that we say, drinkers of alcohol are not allowed to drive. But if you still drive without being detected, this means that you take out a power of the rule itself. What we indeed found in our research is that there is a high dark number with regard to drunken driving. That means that many drivers are driving under the influence of alcohol without being detected. We found in our study that about one out of 3,000 cases of drunken driving is detected and led to court sentence.

The second thing which should have to be fulfilled is that sanctions cannot be effective if the convicted person can disobey them. Now, of course, if you would

send him to prison there is not any problem at all. He has to obey and then he will have indeed to yield. But what if you have disqualified him? If we disqualify a driver, we also suppose that he won't drive during the period that he has been disqualified. And also here in our research we found that, as in other countries, most of the subjects from whom the licence has been withdrawn do drive in spite of the fact that they are disqualified.

A third thing which I would like to mention is that there should be a relationship between sanctions and the reason why the crime is committed. This means that we have to look for the reason. For instance, to be concrete: Why is a subject driving under the influence of alcohol? Well, the problem is, of course, very simple. He is driving under the influence of alcohol because he has been drinking too much. But you will realize the problem does not lie there.

The main question we should ask is: Why do they drink so much? And another question is: What does alcohol mean to them? And this is one of the things we have been looking for. We have found indeed that in the Netherlands many of the subjects convicted for drunken driving had a special relation to alcohol in this way that they badly needed alcohol. Alcohol was like a kind of medicine to them. They used it to solve special problems. And what I would like to say is that as long as we do not solve the problems which make them drink, we must be afraid that they will continue drinking. As you need your car in the society, they will also combine this drinking and driving.

Well, if you would allow me to summarize these three things: The law enforcement should be effective, sanctions should be obeyed and there should be a relationship between the sanction and the reason why the crime is committed. Then it leads us logically to a number of measures, which I think should have been taken and which I would like to mention to you.

The first thing is, of course, that there should be more preventive police control. I have told you that too much people can drive without being detected. As long as this situation goes on, people will take the risk. The first thing that we have to do is to make driving under the influence of alcohol a higher risk.

Then there is another thing. We need a more effective system to control and see to it that disqualified drivers do not drive. I am telling you this because it usually gathers rather a lot of objections from people. I am prepared to have them today too, but I will still mention them. I think the only way to have effective control is to make sure that you can identify a car in traffic from which the owner has been disqualified from driving. That means that you need a special registration plate for it. This is, what I want to emphasize, *for repeaters*, not for the man who has been convicted for the first time. But the driver should be warned what would happen to him if he does it a second time. If he does it a second time, he should get a special plate which makes the car easily identifiable in traffic.

But I would like to add something to this. That is, we should be more realistic in applying disqualification. I mean that everybody should have the right every time and always to drive his car to his job. We live in a society in which we hardly can be without a car. You need a car for your work and in other connections and therefore I would like to say: Everybody should have the right, even if he is disqualified, to use his car for his profession. This is especially realistic, I think, because most of the drunken driving takes place in leisure time, during evenings and weekends.

The third thing which I think is also important is that drunken drivers who need treatment should receive treatment. We should build into our court system the possibility to identify the problem drinkers. Therefore I have suggested in the Netherlands that the judge, the prosecution or the defence might ask for a psy-

chological report and a social inquiry about the man who is suspected of having driven under the influence of alcohol. In this report they should look for different things. The first one of them is: Was there any more drunkenness in case of this man. Were there any family problems or personal problems? The court should refer, if there are any problems, the convicted subject to institutions who can deal with these problems. For instance, if he seems to be alcoholic, we would refer him to consultations about his alcoholic problems. If he seems to have problems with his marriage, we should refer him to institutions dealing with marriage and family problems.

Finally, I think it is important to give the general public more information about the effect of alcohol. We should teach this as soon as possible, preferably also build it into our elementary school system. Later on especially I think we should teach the public what to do to minimize the influence of alcohol. Concretely this means we should give them information about alcohol effects. It means that we should say: Don't drink on an empty stomach. It is better to have long drinks than short drinks.

We could mention other things to give them information about alcohol metabolism. Although I'm afraid it is not my profession, I think there is a development in which I very much believe and which would be, I think, the possible solution of the problem. I think biochemists should find as soon as possible means which make it possible to promote the alcohol metabolism in the stomach and not in the blood, which is being tried now. They always try to promote this metabolism in the blood but then it is too late, we should do it in the stomach.

Ingmar Dureman

Människan kör som hon lever, har det sagts i många sammanhang. Man började säga det 1947 i samband med en under-

sökning av en kanadensare vid namn Tillman. Denne gick till väga på samma sätt som 1953 års svenska trafiksäkerhetsutredning. Han valde nämligen ut förare av en viss kategori, t.ex. bussförare. Sedan delade han in dem i dels en grupp extremt olycksbelastade och förseelsebelastade och dels en grupp utan förseelser. Sedan tittade han på om dessa förarkategorier hade andra förseelser, anmälda till olika myndigheter. Svaret blev att de olycksbelastade hade många sådana anmälningar. Ni kanske redan anar i vilken riktning vi får tolka det här materialet. Vi får nämligen bara säga att människan lever som hon kör. Den slutledningsriktningen är berättigad, men däremot inte att hon kör som hon lever.

Att sedan den här tesen kom att slå igenom i 1953 års trafiksäkerhetsutredning, det kan man kanske förklara därav att det just vid denna tidpunkt var en mycket kraftig debatt kring de här problemen. Dessutom kom man att välja ut en speciell grupp av förare, nämligen de som har belastning med våldsbrott. Man sade att i den grupp som visar våld i sitt icke-trafikbeteende finns det rätt goda skäl att förmoda att den också visar ett våldsamtt sinnelag på vägen. Man generaliserade således deras aggressivitet.

Det är nu tid att pröva om hela den här frågan. Bland praktiskt utövande domstolsjurister är det nämligen en ganska utbredd uppfattning att de för närvarande beaktade brotten som har våldsinslag knappast har större förutsägelsevärde än andra brott. Den utredning som jag utfört är ett försök att se om man kunde bekräfta vad man redan anade, nämligen att det inte skulle vara en skillnad mellan brott med våldsinslag, som för närvarande rapporteras, och brott utan våldsinslag, som t.ex. förskingring, bedrägeri, som icke rapporteras f.n. Jag skall fatta mig mycket kort i redogörelsen för undersökningen och försöka komma till slutsatserna så fort som möjligt.

Vi har valt ut ett domstolsmaterial från fyra år, dvs. från 1965 genom hela 1968. Urvalet har gjorts slumpmässigt så att det

domstolsmaterial som vi har direkt bearbetat är 1/30 av hela materialet under fyraårsperioden. Antalet personer, som undersökningen omfattar är 2 269 och de är födda mellan 1901 och 1950. Mittåldern för dem är 28 år och mittpersonen ligger alltså i födelseåret 1942.

Om vi sedan går till resultaten. Låt oss då när vi ställer upp de olika brottskategorierna, indela dem i brott med våldsinslag och brott utan våldsinslag. Mot dessa brottskategorier ställer vi sedan förekomst av trafikbrott, uppdelat på de olika typerna av trafikbrott, de som innebär vårdslöshet, normal eller grov, olovlig körning, rattfylleri, rattonykterhet och smitning. Vi har härvid inte kunnat finna några tendenser som pekar på att brottslingkategorierna, våldsbrottslingar contra icke våldsbrottslingar, skulle skilja sig på något sätt. Alltså, vi har inget som helst underlag för att påstå att det är rätt som man tidigare trodde, eller velat tro, att våldsbrottslingarna skulle utmärka sig speciellt på vägarna. De har mycket goda konkurrenter i bedragarna och andra. Bland dessa senare brottslingskategorier finns alltså samma trafikbrott som hos våldsbrottslingarna.

Ett annat resultat i stort, som är viktigt att nämna är att undersökningen för hela brottsmaterialet bekräftar ett annat förhållande som man i stort sett visste tidigare. Det finns nämligen en generalisering av oförmåga att lära regler och tillämpa dem samt att lära av erfarenhet från livet till trafiken. I det här fallet är det berättigat att säga att människan kör som hon lever. Vi vet att omkring 30 % av alla de här allmänna brottslingskategorierna också har belastning med trafikbrott. Men det intressanta är, om vi går lite längre in på siffrorna, att det är bara 1/3 ungefär av varje brottskategori som har en belastning med trafikbrott. Om jag får skärpa slutsatsen något, så kan man säga att i vårt material så kör 1/3 av personerna som de lever. Resten har inga brott registrerade på vägen. Det blir i varje brottskategori till slut en grupp på 1/3, ungefär 30 %, som står för alla trafikförseelserna inom

gruppen. Detta tror jag är speciellt viktigt att stryka under. För en tredjedel av materialet så gäller regeln att personen kör som han lever. Precis som tidigare talare har sagt, är det alltid män man har att göra med i de här materialen. Jag tror inte vi har någon enda kvinna. Jag vill också tillägga att undersökningen omfattat de grövre förseelserna, både när det gäller allmänbrottslighet och trafikbrottslighet.

B. M. Biehl

Mr. Chairman, ladies and gentlemen.

I would like to give you a brief introduction into the use of diagnostic methods for driver's selection. As we heard already in this discussion, there are various ways of increasing road safety by taking the human factor into account and thereby reducing the number of accidents. One way is for example to take into consideration the human factors in shaping traffic environment. Appropriate education and propaganda would be another way.

Assuming that the constant characteristics of a driver have an effect on the number of accidents or traffic offences he is likely to commit, then another way is possible, the selection of drivers by means of diagnostic measures. There could be two basic possibilities of doing this: the selection of particularly good drivers, which is a so-called positive selection, or the selection of particularly bad drivers, which is a negative selection. The former method of selection is more appropriate for commercial purposes where there may be more applicants than vacant positions. The latter method, however, is the only possible one for use as a preventive and legal measure. Thereby unfit persons could be excluded from participation in traffic.

The selection of potential drivers on a basis of a legal measure presupposes the answer to the following questions: Basically everyone has the right to drive a car. But in most countries there are certain conditions to be fulfilled before permission to drive motor vehicles can be given.

Most often a driving licence is granted when the candidate passes a test of ability and knowledge only. He has the required control of the vehicle and knows the most important traffic regulations. In most countries the driver may obtain a licence when these conditions are fulfilled. Sometimes medical tests are included.

Other countries, however, hold the point of view that there are drivers who, because of certain personality characteristics, endanger both themselves and other road users. They require, therefore, that when there is no doubt of the presence of such characteristics, the person concerned should not be allowed to acquire a driving licence. The grants for elimination of drivers could be because a driver would have more accidents than the average driver or because he would commit more traffic offences than the average driver. Other reasons could be that his behaviour would be less appropriate or lastly because he would not pass a driving test.

Selection *before* these events can occur is only possible, however, when diagnostic methods are available by means of which it can be predicted to a defined level of probability whether a particular person would fulfill one of these criteria. Only then do such methods of testing have sufficient validity. Are there now any diagnostic methods by means of which the previously mentioned criteria could be predicted with a sufficient degree of confidence? There are hardly any characteristics of drivers which have not been examined as predictors. And these characteristics could be divided into the following areas: the medical conditions, psycho-motor features, intelligence, personality characteristics and attitudes. A great deal of research has been done and we in Vienna also did some research to find the correlations between test results of these areas, on the one side, and driving criteria, mostly accidents, on the other side.

Indeed there are some significant correlations. But if one summarizes it can be

said that diagnostic methods which can be used for negative drivers' selection for a whole population are not feasible. Neither one single variable nor a whole test battery provides a reliable linear predict of driving behaviour. In addition, the results would be unlikely to justify the expenses involved. This holds true not only for psychological but also for medical characteristics.

But the situation is different for a selection restricted to extreme groups. In the case of obvious medical or psychic deficiencies, these can be verified by the aid of diagnostic measures. The question of certain minimum standards being reached can thereby be more easily solved. Their bearing on driving behaviour is obvious. Certain regulations in this field have been established in some countries, as for example in Austria, where aptitude tests are obligatory for certain groups of drivers, of whose driving ability there is some doubt. Such groups are, for example, persons whose driving licenses have been repeatedly withdrawn, persons with many traffic accidents or offences, and very old persons who apply for their first driving license.

Only persons with very negative scores are rejected. Apart from the road safety aspect, another advantage is gained by this type of selection. Some applicants for driving licence, particularly the older people, are prevented from needlessly spending a large sum of money on driving lessons and then after this fail in the tests several times. To sum up, it can be said that drivers' selection based on medical and psychological predictors is justified in extreme cases only. In this way an important safety measure is achieved for those to whom the selection tests applies and for the other road users.

Anders Tallqvist

Mina damer och herrar. Herr ordförande. Ett av de drag som varit mycket genomträngande under det här mycket givande

symposiet har varit strävan att vidga vyerna i förhållande till de problem som vi har kämpat med. Min uppgift har varit att presentera alternativ för påverkan av förarna. Jag har gjort det utgående från att det är bara ett sätt att förbättra trafik-säkerhetssituationen att koncentrera sig på förarna. Vi har varit rörande eniga om att samtidigt som vi försöker skola förarkomponenten, så har vi som en lika viktig uppgift att skola de övriga delarna av trafiksystemet.

I dag skolar vi förarna genom att fordra att de genomgår en trafikskola. Vi kontrollerar deras prestationsnivå i körprov. Vi låter dem i de flesta fall delta i trafiken, alltså de som vill köra får i allmänhet köra. Därefter försöker vi motarbeta de avvikande beteendena, som förresten definieras av lag och polis, genom att straffa sådana företeelser som är riskfyllda, fortfarande enligt polisens definition. Upprepas förseelserna så sker en körkortsindragning. Körkortsindragningen sker i de flesta fall med antalet och kvaliteterna av förseelserna som grund. Här har jag då kommit in på mitt speciella område.

Jag har hävdad att uteslutning ur trafiken inte är en ändamålsenlig metod att höja trafiksäkerheten på grund av bl.a. följande faktorer. Sambandet mellan förseelser i trafiken och trafikolyckor är rent statistiskt mycket svagt. Det betyder i praktiken att utesluter vi ur trafiken människor med ett antal förseelser så utesluter vi samtidigt många förare som aldrig kommer att förorsaka någon trafikolycka. Alltså, vi har inte påverkat säkerhetsnivån, kanske nivån av laglydighet.

Att utesluta förare med ett antal olyckor som grund är också diskutabelt. Exempelvis har man i Amerika, det är där de flesta undersökningarna gjorts, konstaterat att om man genom uteslutning försöker påverka trafiksäkerhetsnivån, så har man följande effekt att konstatera. Om man utesluter sådana förare som har förorsakat två eller flera olyckor under 1961 och 1962, så har man under 1963 fortfarande 75 % av samtliga olyckor kvar.

Det förefaller klart att en rättvis och ändamålsenlig grund för uteslutning av trafikanter ur trafiksammanhanget inte finns.

Till detta kan tilläggas att en indragning av körkort också har andra negativa konsekvenser. Tidigare har nämnts att det inte nämnvärt påverkar trafiksäkerhetsnivån. Att dra in ett körkort för en yrkesförare innebär att han har stora svårigheter att erhålla pengar för mat. Attindra hans körkort kan upplevas i många fall och upplevs troligen också som en psykologisk nedvärdering. Körkortsindragningen har alltså psykologiska, psykosociologiska, familjära och ekonomiska negativa konsekvenser.

Som alternativ har jag presenterat ett förslag om för det första en ökad och snabbare information om vårt beteende i trafiken. Vi bör alltså ha ett system som informerar oss om när vi beter oss illa och när vi beter oss bra. Ett system som informerar oss om när vi beter oss bra i trafiken saknas tyvärr helt och hållet. Vi får bara veta när vi har betett oss illa.

I det här sammanhanget är det s.k. prickningssystemet, the point system, värt att beakta. Detta gäller i synnerhet om man får mera prickar för sådana förseelser som har vetenskapligt konstaterats vara riskfyllda förseelser. Pricksystemet har troligen en god effekt på säkerhetsnivån om det fungerar snabbt och automatiskt. Den enskilde föraren blir informerad om sitt negativa beteende. Han får reda på att han har kört över hastighetsgränsen så och så mycket. Det innebär att han, om han fortsätter, råkar ut för de och de åtgärderna.

Jag har framlagt förslag om följande åtgärder mot den som fortsätter sitt avvikande beteende. Han bör erhålla ett varningsbrev. Detta är systemet i några delstater i Amerika. Systemet med varningsbrev undersöks för närvarande också utom Amerika. Bl.a. pågår en undersökning i Norge och i Finland. Innehållet i detta varningsbrev bör för att effekt skall uppnås anpassas efter förseelsernas art och dess riskfylldhet.

Fortsätter föraren att avvika — köra över hastighetsgränser exempelvis — så har jag föreslagit att vi trots detta inte skall dra in hans körkort. Vi kan kalla honom till en intervju, ett face to face tillfälle, där han kan förklara sin situation. Administrationens skolade representant kan förklara administrationens synpunkt på hans trafikbeteende. Är detta intervjutillfälle — det behöver inte räcka så farligt många timmar — diagnostiskt och skall vi säga positivt terapeutiskt betonat, då har det en effekt på hans trafikbeteende. Det har således visat sig att det har en effekt på hans olycksbeteende förutom på hans förseelsebeteende. Det betyder att man i vissa fall bör skilja på förseelsebeteende i trafiken och olycksbeteende i trafiken. Varningsbrevssystem har således konstaterats för det mesta ha effekt enbart på trafikförseelsernas antal och kvalitet.

Har den personliga, terapeutiskt betonade intervjun, närmandet mellan föraren och administrationen, inte lyckats. Det finns således fall, där en hjälp från systemets sida inte har effekt. Det kan således finnas starka indikationer på att trafikanten inte förbättrar sitt beteende. I sådana fall ser jag som den enda möjligheten att utesluta trafikanten ur trafiken. Men utesluter vi honom ur trafiken så måste han ändå ha möjlighet att komma till sitt jobb. Vi bör därför effektivisera masspersontransporterna.

I sammandrag: Vi bör utveckla våra diagnostiska metoder, som hjälper oss att ta reda på vilka problemkombinationer som ligger bakom det avvikande beteendet. Det räcker inte med att vi räknar antalet trafikförseelser. När vi har kommit närmare orsaken till beteendet, skall vi finna fram till alternativa, mera adekvata kontraåtgärder. En adekvat medicin för en speciell sjukdom.

Carl-Johan Cosmo

Herr ordförande, mina damer och herrar. Min uppgift vid symposiet har varit att

försöka som jurist svara för den kritik som herrar vetenskapsmän har riktat mot det system vi har idag. Jag skall därför inte försöka ge en samlad bild av det trafikjuridiska systemet, utan jag tar upp några punkter där vetenskapsmännen varit som mest kritiska.

Psykologerna har sagt, att vi har för många regler. De vill ha ett mindre antal regler för trafiken. Jag har svarat: Det kan inte juristerna åstadkomma. Varför? Därför att vägbyggarna tillhandahåller ett trafiksystem som är så konstruerat, att det krävs en massa trafikregler för att reglera trafikantens uppträdande i detta system. Det har sagts att vi skall ha cirka tolv trafikregler. Det är vad man kan räkna med att trafikanten kan lära sig. Den bistra verkligheten är emellertid att det finns hundratals regler. Jag tror alltså att till dess att de som konstruerar vårt trafiksystem lärt sig hur trafikanten fungerar, så kan inte vi, juristerna, tillhandahålla ett enkelt regelsystem. För att undvika de misstag som nu begås är det nödvändigt att juristerna kommer in i ett betydligt tidigare skede av planeringsarbetet än som nu sker. Som ett exempel på de misstag som begås om inte juristen kommer med i tid vill jag nämna vägrenarna. Dessa konstruerades först av vägbyggarna och sedan började man fråga juristerna: Hur skall vi göra med trafikanter som kör på vägrenarna? Hur skall vi göra med företrädesrätten för trafikanter som kommer in och ut från denna vägen? Detta är ett exempel på bristande planering och förutseende.

Det andra önskemål som vetenskapsmännen framfört är avkriminalisering. Där har jag svarat att här tror jag att vi jurister har brustit väldigt mycket. Vetenskapsmännen har sagt att en överkriminalisering medför en inflation i straff. Detta avtrubbar verkan av straffet. Straffet får ingen stigmatiserande effekt. Det hjälper inte till att skapa den rätta synen på trafiksamhället. Den syn som doktor Willett har understrukt vikten av. Överkriminaliseringen medför också en överbelastning av polis, åklagare och domstolar. Detta

gör att dessa organ inte kan fungera tillräckligt preventivt.

Jag har således medgett, att här finns många områden, där vi kan förbättra. Som ett exempel på brister i nuvarande system vill jag peka på följande. Vi har f.n. väldigt mycket olovliga körningar. Hur bör vi möta detta? Jo, givetvis genom att införa en obligatorisk trafikundervisning, så att alla, eller åtminstone alla som kan, också får körkortet automatiskt i det reguljära skolsystemet.

Vi kan säkerligen också avkriminalisera mycket vad gäller skatt, försäkring och registrering. Vi kan avkriminalisera parkeringsförseelserna. Vi har också ett stort område, som kallas vårdslöshet i trafik, där vi i Sverige har en mycket hög kriminaliseringsgrad. Där är det inte heller någon svårighet att avkriminalisera.

Övervakningen är bristfällig. Någon har sagt att vi begår ungefär 30 miljarder trafikbrott här i Sverige årligen och vi upptäcker ungefär en miljon. Vi upptäcker kanske var tusende rattfyllerist. Det är klart att man inte med den bakgrunden kan säga att vi har någon bra övervakning. Personligen är jag pessimist i fråga om möjligheterna att skapa en effektiv övervakning med användande av de mycket personalkrävande metoder som f.n. används. Här krävs ett radikalt omtänkande. Vi måste i fortsättningen ta hjälp av elektroniska hjälpmedel vid övervakningen. Det finns exempel på detta utomlands. Fortfarande är denna metod dyrbar. Men utvecklingen här går snabbt. Behov av dessa hjälpmedel finns i alla utvecklade länder. Den potentiella marknaden för sådana hjälpmedel är därför stor. Jag vill emellertid nämna att den som kör bil i Mont Blanc-tunneln kan redan nu se ett exempel på mekanisk övervakning.

Sedan när det gäller den konventionella trafikövervakningen har det vid symposiet hävdats att den brister i dag på det sättet, att korrigeringen av trafikanterna inte sker tillräckligt snabbt. Det är doktor Tallqvist bl.a. som har tryckt på detta. Här har vi stora möjligheter att redan i dag förbättra systemet. Det har på symposiet presente-

rats en undersökning som tyder på att den omständigheten att man enbart ser en polisbil inte upplevs som en verklig övervakning. Om man t.ex. ser en polisbil då man gör sig skyldig till rattfylleri, och ingripande inte sker, förstärks intrycket av att risken för upptäckt är liten.

Jag tror att man här måste försöka lägga om trafikövervakningen på det sättet att man gör många fler ingripanden. Sedan bör man använda det vidgade rapporteftergiftsinstitutet, som vi har fått för några månader sedan här i landet, på det sätt som det var tänkt. Detta innebär alltså att det inte alltid skall bli bestraffning i samband med polisens ingripande.

Den fjärde punkt där kritik riktats mot systemet gäller snabbheten. Det har för övrigt vid symposiet framförts en hel del kritik mot det preventiva system, som i dag finns inom straffrätten. Det finns de som har hävdat, att på sätt och vis är det synd att kritisera dagens system, eftersom vi ännu inte har börjat tillämpa det på det sätt som det var tänkt. Man kan således inte säga att man har försökt att använda bestraffning för att hindra trafikbrott, när straffet och körkortsåterkallelsen kommer 1½ à 2 år efter det att man har gjort sig skyldig till ett brott. Då har man inte prövat systemet. Här tror jag att vi jurister kan göra mycket för att förbättra systemet. På småförseelsernas område har vi ju genom ordningsföreläggande och i viss mån strafföreläggande fått metoder, som är snabba. När det gäller den något grövre brottsligheten finns det emellertid exempel från utlandet, t.ex. Västtyskland och USA, där man har kommit ner till handläggningsstider på en vecka, fjorton dagar vid s.k. jourdomstolar. På det området finns det väldigt mycket att göra i det här landet genom en förenkling av processen. Våra nuvarande handläggningsmetoder är både från rätts- och trafiksäkerhetssynpunkt föga tillfredsställande. Straffprocessens betydelse och samband med de materiella reglerna måste i fortsättningen uppmärksammas på ett helt annat sätt än f.n.

Yngve Kristensson

Efter dessa inledningsanföranden följer nu den allmänna diskussionen mellan panel och auditorium. Jag föreslår att vi vid denna diskussion i anknytning till inledningsanförandena tar upp några huvudfrågor. En huvudfråga har behandlats av doktor Willett och även professor Buikhuisen. Doktor Willett har gjort gällande, konstaterat kan jag väl snarare säga, att det föreligger en eftersläpning i våra normer för samlevnaden i trafiken. Medborgarna som trafikanter, alltså bilförare, cyklist och gående, är sämre socialt anpassade i bilsamhället än i det vanliga samhället. Doktor Willett talar om "cultural lag".

Hur skall vi således kunna lära oss att bättre leva samman i trafiken? Varför ser vi, och det har också berörts under symposiet, så milt på trafikbrotten? Skall vi inte i själva verket jämställa vissa trafiksyndare med vanliga brottslingar, alltså med kriminella i vanlig mening? Professor Buikhuisen behandlade en viss stor grupp utav trafikbrottslingar, rattfylleristerna. Han gav åtskilliga intressanta rekommendationer, som det finns all anledning att närmare diskutera.

Sedan kommer vi över till den fråga som professor Dureman här berörde. Är det riktigt att vi, jag ställer frågan så eftersom vi sysslar med det i trafikmålskommittén, vidhåller den grundsats som finns i vår nuvarande lagstiftning och som bygger på att människan kör som hon lever. Vi har samtidigt också frågan om det finns olycksfåglar, om det påståendet är riktigt, att det är en liten grupp bilförare, som förorsakar huvudparten utav olyckorna. Till detta problemkomplex hör också frågan om andra brott än trafikbrott skall inverka på rätten att inneha körkort. Om man t.ex. begår stöld, om man gör sig skyldig till skattebrott, om man begår förskingring eller sexualförbrytelser, skall då detta inverka på körkortet?

Det tredje huvudavsnittet skulle gälla den ytterst viktiga frågan om det finns

någon testmetod, varigenom man verkligen kan bestämma att du är en säker förare och du är en farlig förare. Kan vi eliminera de farliga förarna på detta sätt? Detta har doktor Biehl berört.

Den fjärde huvudfrågan är, hur vi skall behandla dem som bryter mot trafikreglerna. Doktor Tallqvist har varit inne på detta. Skall vi använda körkortsindragning i den utsträckning som vi nu gör eller bör vi uppskjuta körkortsindragningen så länge som möjligt och i stället söka hjälpa de felande till rätta genom undervisning osv? Skall vi tänka oss ett pricksystem? Skall vi tänka oss en positiv inriktning på hela vårt sanktionssystem i stället för den rent straffande uppgift som vi i huvudsak har nu?

Slutligen det som vi nu sist hörde, och det är också en ytterst viktig fråga. Är det rimligt att vi kriminaliserar i trafiken i den utsträckning som vi nu gör?

Ja, det är såvitt jag har fattat det de fem huvudfrågor som det har rört sig om. Det första huvudavsnittet, där har Mr. Bishop varit opponent. I ask you, Mr. Bishop, do you want to make any comment to what Mr. Willett and Mr. Buikhuisen has said?

Norman Bishop

Mr. Chairman! Thank you first of all not only for the opportunity of speaking on the subject but also, perhaps just very briefly, for giving me the opportunity of saying publicly how much I personally have enjoyed being present at this symposium. I would also say that it seems to me that this kind of activity of organizing a symposium and subsequently following it up with this kind of discussion is indeed something that happens all too rarely in Europe and is very progressive. I think it is a positive way of approaching a difficult problem.

I shall try to be very brief now in the comments I want to make about what has been said here this morning, and I want to begin with what Doctor Willett and Pro-

fessor Buikhuisen have drawn our attention to. It seems to me that the starting point is what Doctor Willett says when he states: There are some people who are very bad. There are some people who are very good. There are a lot somewhere in the middle. And in a way you can say perhaps that Professor Buikhuisen has particularly picked out people who are quite extreme into the scale. Psychologically sick people on the roads are a rather well-defined group. They are reasonably homogeneous.

I think the difficulty emerges at the point where we are looking at people who are neither very bad nor very good. Professor Buikhuisen pointed out that one of 1,000 persons apparently is detected when dealing with people at the drunk end of the scale. I think the detection rate for those who are more the normal rangers is considerably worse than that. And for this reason I think we must be very careful indeed about the whole way in which we define their characteristics. Obviously the measures we are going to take about these matters depend to some extent on the kind of characteristics we can see. I hope one thing we might do is to stop music slogans like "people drive as they live", because I think they very dangerously tend to suggest that we know far more than we actually do about a phenomenon which is an enormously complex one.

I want to suggest then that the real problem is that we do need, as has rightly been said, to begin picking up on the question of detection, at least beginning to have much more supervision and much more possibility of finding out who these people are who cause danger in traffic. I think that the contribution you have heard from Doctor Tallqvist, for example, suggests that we cannot simply put it down to a simple offender approach. There are others in traffic who are causing danger, people who sometimes commit offences, just in the same way as we find ordinary criminals. Here there is a fairly well-marked group of those who are regularly committing offences and there are others,

perhaps even in this room, who commit offences occasionally.

So this notion of supervision I think is a very important one. But what follows after this? One would suggest it should be a screening process, which does give us the possibility of bringing into play many different kinds of opportunities of handling, treating and controlling the system. It may be that the punishment of certain persons is the right and proper thing to do, but after this we need to have other kinds of treatments in perhaps a more social, a more psychological or more technical sense of this term.

I can make one last point, which is that perhaps the level of technical training is fairly easy to define. There are a number of very excellent technical methods to be used. However, treatment in the social and psychological sense of the word becomes very difficult indeed. And there I think it's easier for Professor Buikhuisen to say what people have for problems than to propose how to deal with them. It is not likely that we will be any more successful than the 37 or 38% of reconvictions in the penal system. We still have a very great deal to do, and the long and the short of it is then that, if we want to do more about it, we have got to invest a great deal more money, I suspect, to put this matter higher among social priorities, to find out more, to experiment more and to evaluate more what we actually do attempt.

J. O. Brown

Mr. Chairman, ladies and gentlemen!

Could I first of all support Mr. Bishop's appreciation of this meeting and say not only that I hope there will be more meetings like this. I hope too that there will be more co-operation between our joint organizers, as it were, in the different countries, that is insurance companies and the traffic authorities. Because I think they have a lot to offer one another.

Being an applied psychologist, I start on the assumption that there are two ways to design a system of any kind. One of them is to adopt the criteria of cost or convenience and design a system on engineering grounds. Having got the system, you could by the imposition of complex rules force people to fit into the system. The alternative way, which I think is better, is to have human factor engineers concerned with the design of the traffic system, and design the system to match human characteristics. Then I think we might meet just Cosmo's requirement of having fewer rules. Also I'm sure that it pays more often to obey the rules, that the opportunity for people to behave in an unfortunate manner occurs less frequently. It's one of the conclusions from human engineering research that selection and training are no substitutes for good system design. I'm not underestimating the need for selection and training. Of course we need both. But I think that Doctor Biehl and Doctor Tallqvist have shown us that our methods of selection are very imprecise at the moment. We hope they will get better but they are very imprecise, and in order to avoid injustice we have to set out criteria that are rather wide. Thereby we lead into the system people who are going to cause trouble. On the question of training Doctor Willett discovered—my work is complementary to his—this idea that one might change attitudes. That is a very exciting area and I think it holds great promises, and obviously something has to be done here. A lot of knowledge is needed about how our attitudes are being shaped all the time by the advertisers. If only some of this knowledge could be applied on the traffic safety field, I think there would be big advances. I am really concerned personally with the fact that—which seems to be a fact—most accidents happen to normal drivers in moments of what one might call mental aberration or when the demands of the system exceed human possibilities. So we have two areas here which I would just like to mention briefly.

One is to find out where drivers are unlikely to have these moments of mental aberration. We must be concerned with the facts of stress, that is the facts of lack of sleep, or fatigue or intoxication. We have heard something of this already. But especially interactions between some of these things are important, the fact that quite often intoxication and lack of sleep go together, the fact that sometimes people prolong their driving into that portion of the 24 hours when they would normally be sleeping. We are just beginning to get information now that some of these interactions produce effects which are more dangerous than when one looks at the separate effects of these stresses. To combine sleeplessness with intoxication, for example, produces a tremendously much greater effect than if we these two things added together. So what we need to do, as Professor Buikhuisen has said already, is to provide people with much more information of these interactions, tell them just when these interactions of stress will cause them trouble.

The second thing is that, first of all one can use the accidents and offences as symptoms to diagnose faults in the traffic system, to find out when the system demands exceed the ordinary human requirements. It's a fact, which I suppose most motoring people know, that in Great Britain some of these new symbolic signs, even after they'd been in use for a very long time, were understood by only 50% of the population. So clearly we have a big educational problem here.

It's also true, as Cosmo pointed out, that the design of some systems just doesn't match human requirements. Just to take one example of traffic signs. It's a very bad system to design a sign where the man doesn't know where to look, so he has to spend a long time searching for the information. When he has found it, there may not be time to decide in which direction he has to go. It is much better to design a system so he knows where to look and simply fix up a directional information. And these signs are available.

One has to redesign the traffic system, I think, so the handling characteristics never exceed human requirements. We have to go a long way towards that.

So my main conclusion really is that we need the human factor's engineer very early in the designing of systems, that we must have a system that matches human requirements much more than it does now. We are going to acquire a lot of these complex rules which we have at the moment. We need to detect people when they don't conform to the rules.

Alvar Thorson

Jag har lyssnat med väldigt stort intresse på inläggen, som till största delen gällde de utbildade bilförarna. Jag sysslar med informationsuppgifter på det här området tack vare ett mycket stort stöd från försäkringsvärlden. Jag känner också på mig att NTF har skyldigheter att hjälpa till med att skapa ett fint underlag för dem som skall ta sitt körkort. Min organisations uppgift måste vara att från den tidigaste ålder, när en individ kan påverkas till goda trafikvanor, medverka till detta. Till sist är man framme vid körkortsåldern och det är här jag tror att vi kan göra så väldigt mycket. Jag anknyter här till vad den siste talaren sade. Det finns verkligen mycket man kan göra för att bearbeta den mänskliga faktorn och det understryker jag som reaktion till att vi här i Sverige på sista tiden har tagit upp som förstahandsfrågor bilen och trafikmiljön. Naturligtvis är detta också oerhört väsentliga frågor. Men de får inte skymma att det återstår kolossalt mycket att lära ut till individen. Det har till och med sagts ibland att det inte är mycket mer att göra åt människorna. Det gäller bara att förbättra miljön. Jag är övertygad om att det återstår kolossalt mycket på det här området. Vi människor lär oss en del men vi glömmer så väldigt fort, så det gäller att hålla den informativa verksamheten vid liv.

Vi vill också ha metoder så att vi verkligen kan följa upp på ett sätt som tränger in innanför västen. Naturligtvis skall reglerna, som vi skall lära ut, vara riktigt skapta, som herr Cosmo har nämnt, eller som den gamle poliskommissarien en gång sa, att de skall vara skrivna för utomhusbruk, med andra ord inte bara skrivbordsprodukter. Det är ju självklart.

Nu menar jag att man skall ta itu med informationsfrågorna mycket tidigt. Där har ju docenten Stina Sandels, som finns här bland oss idag, gett oss väldigt fina riktlinjer för hur man uppfostrar de minsta barnen till goda trafikvanor. Vi vet också en hel del om hur man sedan undervisar och utbildar under skoltiden.

För vår del i NTF har vi tagit fasta på Stina Sandels principer och startat en barnens trafikklubb. Vi gick ut med den förra året och vände oss till dem som i år fyller 3 år. 123 000 treåringar finns det i den årskullen. Vi trodde vi skulle få en 8 000—10 000. I dag har vi anknutna 51 600 treåringar eller med andra ord 51 600 familjer har lystrat till den här inbjudan. Vi har alltså direktkontakt med dem och kan börja ett arbete som inte gäller bara treåringen utan som gäller familjen. Bearbeta dem till det här vi strävar efter, ett bättre förhållande mellan olika trafikantgrupper ute på vägen.

Går man sedan upp i skolåldrarna så har vi haft en utomordentlig organisationsform under de båda åren kring dagen H, med kontaktlärare i varje rektorsområde, med konsulenter i länskolnämnderna. Arbetet bedrevs med liv och lust. Lärarkåren i det här landet är intresserad. Nu skedde tyvärr det sorgliga att 1 juli 1968 så drogs detta in och nu har man egentligen att lita till lärarna själva då man ingen specialishjälp har. Detta är mycket beklagligt.

Jag vill peka på en brist till, som jag tror inte gäller bara Sverige utan många andra länder. Det är att uppe i de gymnasiala stadierna i våra skolor finns egentligen ingen trafikundervisning. Jag vet vissa länder där man avlägger prov för körkortet i gymnasiet. Vi måste i det här

landet, Europas mest motoriserade, snarast komma till en ändring på den här punkten. Vi måste få in en väl genomtänkt trafikutbildning i våra gymnasiala skolor, helst på det sättet, att den nuvarande trafikskolan och undervisningen i det gymnasiala stadiet vävs samman till en sak, att med andra ord det allmänna skolväsendet anammar också utbildningen till körkort. Det måste väl vara riktigt när praktiskt taget varje adertonåring vill ha ett körkort. Då tycker jag att det allmänna skall bereda möjlighet till detta.

Anders Englund

Det är många talare som har tackat arrangörerna för detta symposium. Jag kanske skulle vilja börja med att tacka de kolleger från andra länder, som har kommit och ställt upp.

Sedan skulle jag vilja fästa auditoriets uppmärksamhet på en sak. Den som har lyssnat på de här inläggen måste, liksom jag själv, ha slagits av att nästan varenda en har börjat med att konstatera att vi måste se till att vi har ett trafiksystem där de olika delarna är anpassade till varandra. Det har i motsats till vad som sägs i referatet i Dagens Nyheter i dag varit en enighet i symposiet att man har gjort för litet på den sidan. Man kan räkna upp ett oändligt antal exempel utav den typ som doktor Brown gav alldeles nyss på hur systemet inte är anpassat för människan.

Även om man skulle bygga bort en del av de misstag som gjorts så återstår det åtskilligt. Det är inom det området, som utbildningen och attitydpåverkan kan verka. Den senaste talaren hänvisade till Stina Sandels. Hon torde vara den i Sverige som har den största insikten i hur svårt det är att förändra människan så att hon kan passa i det här systemet. Vi måste lära oss att arbeta med beaktande av den prestationsgräns som finns hos människan. Det har förekommit i tidigare debatter under hösten att man har sagt att vi löser trafiksäkerhetsproblemen genom att ta

hand om ett antal marodörer på vägarna. Om man tar den approachen till trafik-säkerhetsproblemen så missar man det faktum som också har poängterats av de experter som har samlats på det här symposiet, nämligen att trafikolyckor begås inte av några unika, särpräglade individer utan det är den normala bilisten som tillfälligtvis råkar i en sådan situation att han blir upphov till olyckan.

Arthur Kaijser

Herr ordförande, mina damer och herrar. Jag är specialist på kirurgi och hjärnkirurgi och som sådan har jag tyvärr haft tillfälle att studera många trafikolyckor. Vad jag särskilt vill informera om så är det ju om hjärnskadorna. Hur lindrig en trafikolycka än kan vara, så är det tyvärr så att även om vi får bara ett skärsår i ansiktet så har vi dock slagit i ansiktet någonstans. Oavsett om vi haft säkerhetsbälten eller inte. I och med det har vår hjärna fått sig en stöt.

Vår hjärna är ett mycket känsligt instrument. Det är som en stor telefonväxel. Det minsta trassel i ledningarna gör att det blir ett helt kaos. Det behöver inte vara någon lång medvetlöshet. Det kan vara en mycket kort, kanske någon sekund, som uppfattas kanske inte ens av de omkringvarande. Kanske mycket obetydligt av individen själv men som ändå gör att vi får ett stort fel i systemet. Detta leder till att vi får en mänsklig faktor; vi får den omdömeslöse bilföraren. Och inte nog med det, utan han blir otroligt intolerant mot alkohol. 2—3 glas rödvin, en starköl på lunch, kan vara tillräckligt för att han blir en kvalificerad rattfyllerist. Detta gäller även om det icke syns på något som helst blodprov.

Jag vill därför ur min synpunkt rekommendera en utomordentligt skärpt utredning när det gäller bilolyckorna beträffande just hur individen har skadat sitt huvud. När det gäller exempelvis epilepsi så har samhället en skärpt uppmärksamhet. Då dras körkortet in. Då görs det

årliga neurologiska utredningar åratals i följd. När det gäller en skallskada, en commotio eller en contusio celebris, som vi säger, då görs det ingenting alls. Jag skulle vilja föreslå en rekommendation att man vid alla bilolyckor noggrant rekonstruerar hur individen har skadat sitt huvud, hur länge han har varit medvetlös och hur hans reaktion är. Han bör genomgå en elektrisk hjärnundersökning och hans körkort bör dras in tills man får se hur skallskadan utvecklar sig. Tyvärr har jag sett alltför många av dessa lindrigt skallskadade som har blivit svåra bilmarodörer.

Anders Tallqvist

Herr ordförande. Direktör Thorsson framhöll att vi bör inverka intensifierat på människan. Jag tror ingen på det här symposiet åtminstone har den åsikten att vi inte skall påverka människan. Men jag delar mångas uppfattning att vi också måste påverka trafikmiljön. Jag tror att koordineringen av åtgärderna är en av de viktigare frågorna.

Stig Berséus

Jag är läkare och mångsysslare. Jag är docent i medicin, hjärtspecialist, geriatriker, försäkringsläkare. Jag vikarierar då och då i rättspsykiatriska nämnden på socialstyrelsen. Jag vill bara komma med några små reflexioner.

För några år sedan på Medicinsk riksstämma diskuterades information. Jag ville ha mera information, mera upplysning om de medicinska framsteg, som skulle möjliggöra profylax i stället för behandling av en massa sjukdomar. Det är det som är vårt problem nu. Sjukvården dignar under sjukvårdsproblem. Vi måste lätta dem genom profylax. Då fick jag nästan ett litet slag i huvudet av min gode vän professor Lindgren, socialmedicinare i Lund, som sade att de hade bör-

jat med undersökningar över informationsförmåga att gå in nere vid hans institution. Man hade fått ett kolossalt nedslående resultat utav vanligt upplagd information.

Å andra sidan erinrar jag mig ett sammanträde på Karolinska sjukhuset för läkare och medicinpersonal efter slaget vid El Alamein då man i en mycket realistisk färgfilm visade modern krigskirurgisk behandling som provades just där. Den filmen glömmar jag aldrig och flera kolleger och sjuksköterskor gick i däck med dun-der och brak. Det var alltså en kolossalt påtaglig, handgriplig information och den gick säkert in. Jag undrar om man inte skulle kunna i vår körskoleutbildning ha en sådan där väldigt realistisk färgfilm så man får se hur det går till, resultatet av frontalkrockarna. För det är ändå just de där svåra frontalkrockolyckorna som är det stora problemet, som ger de stora skadorna och försäkringsmässigt det stora problemet också. Och studerar man resultatet i dagspressen utav våra week-endar, så kommer man till att det är den personliga faktorn nästan överallt som har vållat dessa olyckor. Skulle man inte genom en sådan där lämplig, skickligt gjord obligatorisk film, kunna få folk att helt enkelt vara försiktiga, att inte glömma vad det rör sig om.

Sedan tror jag att det är väldigt viktigt att man har en väldigt noggrann statistisk bearbetning och genomgång utav olyckorna. Inte bara att man samlar antal, utan en verkligt ordentlig utredning och, såvitt man kan, uppdelning utav alla de svåra olyckorna, så man vet var man skall sätta in kraftåtgärderna för att få största möjliga resultat. Vi har ju tyvärr inte ekonomiska möjligheter att göra absolut trafiksäkra vägar. Det finns siffror från de stora motorvägarna på kontinenten, särskilt i Tyskland, att 700 av 16 000 dödsfall i Tyskland hände på motorvägarna. Allt det andra var i övrig trafik. Men det är väl orealistiskt att tro att vi kan få tillräckligt med motorvägar i vårt land.

Anders Tallqvist

Om jag får reagera på det här senare. Denna realistiska film som visades, så att sjuksköterskor och läkare måste gå hem, det är väl för kraftigt om de svimmar. Då får de ingenting av det. Den här metoden att genom skräck påverka människor att förändra sitt beteende har man försökt i Västtyskland och i staten New York. Där kallar man in 100 problemförare och visar en bloddrypande film. Varje gång bar man ut några, men de flesta gick hem bleka om nosen, men inte tror jag de blir bättre för det. Man vill inte tro på att den här olyckan som man ser på film skall röra en. Den rör andra men inte mig.

Motorvägarnas säkerhet. Det är klart att motorvägarna inte är hundra procentigt säkra ännu, men de är säkrare än vägar med endast två filer. Motorvägarna kan också förbättras med elektronik. Jag kan inte dra fram alla möjliga detaljer, men idéer finns och lösningar finns väl till alla. Jag skulle vilja säga att förbättringen av vägarna, där trafikantkategorier skiljs från varandra, är nog en linje att slå in på.

Terence Willett

I too was very interested in this question that Doctor Berséus put forward, that a film should be shown. But I would support what my colleague has said that this sort of thing has very little effect because people say: It couldn't happen to me. I was also particularly interested in and impressed by what Mr. Thorsson said about the programme of education that you have in Sweden. I wish that these were followed in my country too. But I was alarmed to hear that very little took place in the middle school. Very little education of this kind seems to be taking place with the people at the most impressionable age for this sort of thing, the adolescent.

You see, one of the problems is this one of cultural lag. We still have an up to date idea about driving. It's very closely related to the life of the adolescent. We still have a sort of heroic conception of driving behaviour, that it is manly, daring and adventurous to drive very fast and show our girl friends what we can do, show our wives what we can do too. This sort of thing dies very hard. It is a kind of show-off behaviour, exhibitionistic behaviour which is so much behind much of our trouble.

To correct it I think we have to give people a different image of the good driver. We can do this, I think, by using what we might call exemplars, the people who the young and to some extent the old will follow. Perhaps an example of this in a rather different but not unrelated field is a pop star. Now I think we can perhaps sell better driving in this way by using exemplars. We can show that the reality of good driving is not distorted, old-fashioned virility. It is a highly professional skill. We don't see Graham Hill get in his motor car and go. We see a highly-skilled, competent, disciplined driver who knows what he is doing and who drives within the limits of the environment and of the vehicle.

We find that this kind of attitude can be changed from our experience of flying. If I may be anecdotal for a moment: During the war I was the commander over a flying squadron. I was also commanding a civil flying school. It was sometimes quite difficult to civilize some of the officers into handling their aeroplanes in a way that would not break them and in which they would live to fight again. We could do this by changing the whole concept of good flying, by outlawing the kind of cheer-away behaviour that was going on, making people realize that it was stupid not to be disciplined. We do seem to have quite a considerable effect on people always when we make it very clear to them that their behaviour is stupid. It is simple things like this which, if they are taught in the schools, particularly at

an impressionable age, can do a great deal to change the attitudes. Change the system? Yes, this is very necessary but we also have to bring people up to date, to face the traffic situation.

Alvar Thorson

Jag vill gärna anknyta lite till förslaget om den här skräckfilmen och säga att jag delar herrar Tallqvists och Willetts uppfattning i den frågan. Jag tror att vi har rätt mycket erfarenheter av sådana prov, inte bara här i Sverige utan ute i världen också.

När det gäller information blir man ju besviken många gånger. Den tränger inte in ordentligt. Där har vi för vår del inom NTF kommit till att det gäller att vara så konkret som möjligt. Med andra ord det bästa vore om man kunde helt avsluta trycksaker och sådana ting och i stället få samla folk till en sorts vidareutbildning. Den linjen har förresten flera försäkringsbolag varit med om att stödja. Vi har samlat bilförare sedan de har tagit sitt körkort till en fortsatt utbildning. Men då råkar man ju i ett annat dilemma. Till den utbildningen kommer de, som förut är väldigt hyggliga och trevliga förare, som aldrig gör några fel och är vetgiriga och vill lära sig ännu mer. Konsten är att finna en modell så man får tag i alla de andra också. Alla de som kör bil och kör på ett sätt som vi inte gillar och få dem till en vidareutbildning.

Inom NTF håller vi på med en liten utredning kring den här frågan, där vi helt enkelt säger så här: Vädja gärna till fåfängan. Premiära människor om de kommer. Ge dem märken och certifikat och allt möjligt. Bara vi får dem till vidareutbildning t.ex. i bilkörning. Gör det på ett aptitligt och trevligt sätt, så kanske vi kan få en viss popularitet kring sådana arrangemang och samla betydligt större skaror än vi hittills har kunnat samla. Så får man hoppas att ringarna sprider sig på vattnet. Efter några år kanske vi har en ordnad vidareutbildning,

som sorteras in och som kanske värdesätts som ett tillägg till det körkort man en gång har förvärvat. Det tror jag är en idé att arbeta fram emot.

Rune Andreasson

Herr ordförande. Beträffande utbildningen så talar man ibland om barn, man talar om bilförare, man talar om vidareutbildning men man talar sällan om något system i detta utbildningstänkande. Jag tror dock att det håller på att tränga fram ett system som man kan följa. Man lägger grunden i förskolan, man går genom grundskolans olika stadier med en trafikutbildning. Det är bara att glädja sig åt att i läroplanen för den nya grundskolan har man också tagit upp trafikämnet. Jag tror att genom att ge en sådan systematiserad utbildning så får man också grunden för en bättre bilförarutbildning. Man kan då ta bort rent elementära regler och ge mera kvalificerad utbildning i trafikskolan. Jag tror emellertid att man uppehåller sig för mycket i dagens debatt kring själva verksamhetsformerna, om bilförarutbildningen skall ske i skolan eller på andra ställen. Det är inte det som är det avgörande. Det avgörande är vilken kvalitet vi ger denna utbildning och att den ingår i ett system.

Det är intressant att konstatera, att av de få av auditoriet som har talat här, så är två stycken läkare. Det verkar på mig som om det är läkarna i dag som har kommit in i trafiksäkerhetsarbetet på ett mycket aktivt sätt. Det var årsmöte i Svensk trafikmedicinsk förening häromkvällen och vi kunde konstatera att, efter en rekryteringsdrive bland läkare och närstående, på ungefär två månader, inte mindre än 582 stycken anslutit sig till Svensk trafikmedicinsk förening. Europa-regionen av Världshälsoorganisationen hade för kort tid sedan ett symposium nere i Budapest. Där var man enig om en sak, nämligen att ta upp trafiksäkerhetsproblemen som ett allmänt hälsoproblem. Jag nämner detta för att få en bakgrund

när vi frågar hur vi skall se på trafikbrotten. Jag tror att herr ordföranden formulerade frågan så: Varför ser vi så milt på trafikbrotten? Ja, om det här hälso-tänkandet tränger in i diskussionen, om vi börjar att systematisera utbildningen, så får vi ju en helt ny grund för aktiviteterna på trafiksäkerhetsområdet.

Jag måste deklarera att själv har jag under senare år genomgått en väsentlig sinnesändring och också uppfattning när det gäller de här frågorna. Från att tidigare ha trott på straffet som ett sätt att återföra sådana som begick trafikbrott, så har jag mer och mer insett att det gäller att finna former för rehabilitering. Bakom det ligger också en filosofi, nämligen att vårt moderna samhälle ju knappast kan existera utan att människorna får köra bil.

Man säger att man skall ta körkortet ifrån gamla människor, därför att de har då sådana åldersförändringar att de kanske inte är säkra i trafiken. Det skall vi inte alls göra. Gamla människor kanske har större behov än unga att ta sig fram ifrån glesbygder till tätorter, att delta i vad samhället kan bjuda dem, att komma i kontakt med omvärlden. Vi skall underlätta för dem genom att tala om vilka åldersförändringar som inträder och hur de kan anpassa sig till ett säkert uppträdande i trafiken. Vi skall tala om för dem när de känner sig stressade ute på motorvägarna, att välja mindre trafikerade vägar. Vi skall tala om för dem när deras mörkerseende avtar, att de skall förlägga sin körning till dagtid osv.

Jag tror också att de som begår trafikbrott måste vi ta hand om på ett helt annat sätt än för närvarande. Professor Dureman tog upp frågan om tesen fortfarande är riktig, att man kör som man lever. Vi har alla blivit så väldigt influerade av denna Tillmanska visdom, uttalad någon gång under 1940-talet och vidarebefordrad av 1953 års trafiksäkerhetsutredning. Det finns väldigt mycket i själva tesen, och jag tror att ingen egentligen vill motsäga den. Men vi kan dock inte säga att den är allmängiltig. Vi vet att

den gäller folk med alkoholproblem och den gäller säkert en del andra grupper också. Jag är glad och tacksam för det klargörande som professor Dureman har gjort.

Men om det är så att vi vill att så många människor som möjligt skall delta i trafiken, då måste vi ta hand om dem. Det krävs en återanpassning av dem som begår trafikförseelser. Detta bör naturligtvis ske på många områden. Det gäller inte bara att fylla igen kunskapsluckor. Det kan ju finnas mentala störningar. Det kan finnas fysiska handikapp som måste rehabiliteras. Därför tror jag att det är väldigt nödvändigt nu att komma in på tankar och förslag till hur vi skall kunna rehabilitera dem som begår trafikförseelser.

Vi skall komma ihåg, och jag vänder mig till Carl-Johan Cosmo, att om människorna i det här landet begår tre miljarder trafikförseelser per år, vilket jag tror är helt möjligt — i USA har man gjort liknande studier och fått fram svindlande siffror — så tror jag dock att dom här 3 miljarderna kan multipliceras med många miljarder riktiga handlingar som trafikanterna begår, men som vi aldrig talar om. Det är den där enda gången då förseelsen sker som man skall få lida för. Vi måste få ett system för hela trafikutbildningen. Detta hindrar inte att olika parter kan genomföra delar av det efter träffad överenskommelse. Vi måste diskutera och få en klar uppfattning om vilka som skall ha körkort. Där har jag gjort mig till tolk för den meningen att så många som möjligt i dag har behov av att köra bil, och därför måste vi anpassa oss efter den situationen.

Den sista frågan som jag vill ta upp till diskussion är följande: Hur skall vi kunna få dem som begår trafikbrott säkrare i trafiken? Vilka rehabiliteringsmöjligheter för framtida säker trafikantpassning har vi för dessa människor?

Olle Karleby

När det gäller den mänskliga faktorn i trafiken så är det en speciell punkt som jag skulle vilja ta upp. Vi i den här församlingen blir väl ofta vittne till grovt omdömeslösa och vansinniga omkörningar, som emellertid lyckas. De som gör dessa grovt omdömeslösa och vansinniga omkörningar, de känner sig tuffa när de lyckas. Men när de misslyckas så framkallar de en stor del av de trafikolyckor som vi här diskuterar och som leder till död eller lemlästning.

Jag frågar mig: Vilka möjligheter finns det till snabbingripande mot sådana företeelser på vägarna? Finns det möjligheter till flygande poliskontroll och att haffa vederbörande direkt ute på vägen? Kan polisen genast utdela varning eller uttala hot om körkortsindragning eller vilka åtgärder kan tänkas? Jag tror att den här typen av uppträdande på vägarna med grovt omdömeslösa omkörningar är en huvudfaktor när det gäller uppkomsten av trafikolyckor på vägarna.

Wouter Buikhuisen

I should like to come back just for a few moments to what Mr. Thorsson and other members here in the audience have said about the value of education. I would be the last person to say that we should not have education. But I'd like to add something to it. Let's go back, for instance, to the elementary school. At the elementary school many things are taught to children. If we follow up their knowledge after some time, we can see that some of the things they have been taught they still know, they still remember them, and other things they have forgotten. Some things they apply and others they do not apply.

Let's take a fairly simple example. If you ask children who have just passed the elementary school: Do you know, how much is two and two? They will certainly say: It is four. And if you ask: How much

is two and three? they will say: It is five, and so on. Now we can ask the question: Why does a child know, after having been at elementary school, that two and two is four? Now one of the reasons could be that if he is at home and he says: Two and two is four, his parents do not argue with him and don't say: No, you are mistaken, two and two is five.

Therefore, and now I want to come back to the point which is indeed of very great importance: We should promote education, but we should realize that education does not take place if it has to be applied in a vacuum. The child comes back in a society which behaves in a certain way. As long as we do not succeed also in attacking in the same way, the attitude of society as a whole, I'm afraid that whatever we are going to do with the child in the elementary school will be a waste of time. Therefore I would like also to stress the importance of what my colleague, Doctor Willett, has said that at the same time we also should try to change the attitude of the people in the society as a whole. Indeed Doctor Willett's idea about trying to take into consideration the behaviour of, for instance, pop idols, teenage idols and rally drivers should be taken up. We must know what they do and how they behave in traffic. We should also try to incorporate in our attack of the attitude the behaviour of these people, trying to get them also to promote good traffic ideas, like for instance defensive driving, etc.

Terence Willett

I too would like to comment further on this discussion of our education. By asking a question: I wonder what it is that, though nearly everyone of us, particularly the male members of society, have a very considerable interest in cars and in motoring indeed, there is one thing that will strike a common note of interest between men of different nationalities who hardly know each other, regardless of social class

or anything else, it is a conversation about the car. Now why is it that our educational programmes regarding road safety miss? I wonder if it is because the whole concept of road safety is dull. And need it be dull? I don't think so. It can be sold as exciting and interesting just as much as anything else.

The reason why people forget certain subjects they learn at school is because they are not interested, because they don't think they are relevant, because they think they are academic. Yet, surely there is something wrong with the way we teach, with the way we handle a whole problem if a topic like this cannot be made interesting in a most demanding way.

Now, there is one more thing about driver re-education, the treatment of offenders. Here we have one thing which penalologists, those who work in the prisons and try to do something constructive, have longed for: something in which most of the offenders are really interested. And if we find a vehicle—and I use the term vehicle in more meanings than one—if we find a vehicle in which people are interested, we can use it as a means of teaching all sorts of other attitudes which are linked with it. That is why, in some ways, having motoring offenders to deal with in the penal system should present to us a very fascinating opportunity of really getting somewhere. I suppose that doing what we do in prisons now, giving people very routine work, in which they haven't any interest at all, is something very bad. They switch right off mentally, they serve their sentence, they go out and they are just as they were before.

Carl- Johan Cosmo

Innan jag försöker besvara direktör Karleby's fråga vill jag gärna understryka följande. Vi måste ha klart för oss att vi gör inte så mycket för trafiksäkerheten om vi ser det från olyckssynpunkt om vi tar bort några få kraftigt olycksbelastade förare från trafiken. Det betyder, tror jag

direktör Lanteli har sagt vid symposiet, ungefär 0,1 % av det totala olycksantalet. Inte desto mindre är det självfallet, inte minst från exempelsynpunkt, av väsentlig betydelse att ingripande sker vid omdömeslöst uppträdande i trafiken. Den som gör farliga omkörningar lockar också många andra att göra fel i trafiken genom exemplets makt.

Men det är alltså en — kanske förklarlig — lekmanmässig felsyn att vi löser trafiksäkerhetsproblemen genom att ingripa mot några få marodörer. Så enkelt är det tyvärr inte.

Vad sedan gäller frågan om vi kan få ett effektivare ingripande mot de allvarliga trafikbrottslingarna vill jag obetingat svara ja på den frågan. Det är emellertid en övervakningsfråga och en resursfördelningsfråga. När det gäller övervakningen så har vi talat om ett annat system för trafikövervakning eller åtminstone en annan linje att arbeta efter än den vi nu har. Det räcker inte med att det finns polisbilar på vägarna. Polisen måste också ingripa och göra det ofta. Detta innebär inte att man alltid skall ta till straff. En muntlig tillsägelse kan ofta vara minst lika effektiv. En av anledningarna till att vi har för svag övervakning är att vi använder polisen och rättsväsendet för att angripa en massa brott som åtminstone från trafiksäkerhetssynpunkt enligt alla experters mening inte har någon betydelse. Så att genom en omfördelning av resurserna skulle vi kunna höja trafiksäkerheten.

Sedan snabbheten. Det enda alternativ jag kan peka på där, det är de jourdomstolarna som finns i Amerika och i Västtyskland. Där kan man komma upp till snabba handläggningstider så att ett rattfylleri kan handläggas på en vecka à fjorton dagar. I Sverige synes man emellertid tro att snabbhet försämrar rättssäkerheten. Personligen har jag den motsatta uppfattningen. I stort sett menar jag att när vi har fått in en person i vårt rättsystem så håller vi på med honom så länge så vi hinner bara ägna oss åt några få. Ägnade vi oss lite mindre åt var och

en som vi fick med i systemet eller framförallt lät vi honom gå igenom ett mindre antal turer så skulle vi kunna ägna oss åt så många fler. Någon har sagt att Volvo kan ju prestera en bil på sitt löpande band mycket snabbt. Måste inte rättsväsendet ha litet av samma snabbhetstänkande så att alla mål inte skall behöva ta ett och ett halvt år. Det är mitt svar.

Bertil Odén

Direktör Karlebyns anförande måste faktiskt väcka till liv tankar som tidigare varit under diskussion bl.a. i motororganisationerna. Det är dock en sak att man helt riktigt som direktör Lanteli påpekar inte når en nämnvärt stor effekt genom att ta bort ett antal förare som har många olyckor. En annan sak är om man lyckas ta bort förare, som åstadkommer *en* mycket svår olycka, innan den inträffar. Det är här alltså frågan om att få tag i ett ganska stort antal förare, som kanske aldrig varit utsatta för en olycka. I något fall kanske de har det och då tycker jag att professor Kaijers antydning om att en hjärnskakning medför ökad omdömeslöshet, också har ett betydande intresse. Vidare har vi doktor Tallqvists förslag innebärande att dessa personer, som åstadkommer en rad olämpligheter i trafiken, kan behandlas genom varning, genom personligt samtal. Detta förslag har också ett betydande intresse.

Den fråga som tidigare diskuterats men som då väckte mycken negativ reaktion är följande. Det är nämligen så att polisen är mycket sällan tillstädes när dessa van-sinnesomkörningar verkställs. De enda människor som kan anmäla dessa förare är de som har sett händelsen. Förslaget var faktiskt den gången ställt så att omdömesgilla bilförare skulle ha rätt, inte att polisanmäla sina kolleger på vägen, men att anmäla till NTF vad de sett. En anmälan ingen åtgärd. Två anmälningar kanske ingen åtgärd. Tre anmälningar av skilda personer, upplevelser på skilda tidpunkter och på skilda vägar, skulle kunna tänkas leda till ett brev, exempelvis från

NTF. Fyra, fem, sex anmälningar, då blir det personligt samtal modell Tallqvist. Och därefter får vi väl se vad vi kan göra.

J. O. Brown

I just wanted to take up this question of education, mainly because it is concerned with two things here. One is the surveyor or long-term education and then—to take up what Professor Buikhuisen was saying—this isn't the final answer.

It's a psychological fact that people don't learn things, at least they have great difficulty in learning. They must have an immediate feed-back of whether their behaviour was right or wrong. One of the difficulties in traffic is that quite often the wrong behaviour is not corrected. The person who overtakes in a very dangerous place, just by chance, doesn't get killed, most of the time.

There is very little one can do about this, except by improving detection and perhaps by filling in the information during the person's training that this kind of behaviour—apart from this immediate danger—doesn't gain a person very much.

I was pleased to see that the road research laboratory has published figures showing how many minutes you gain by driving down a motorway at 70 m/h as compared with driving down it at, say, 50 m/h. The differences were compared with the amount of time you might spend having a cup of coffee or doing something else of less importance. If this kind of information is taken into consideration in driver training, I think there might be a gain.

Another problem within the traffic situation is the need of building a whole traffic system, particularly concerning vehicle speed. I think the speed differences must be reduced. One problem here which hasn't been touched on yet is that we have wide differences within vehicle speeds. In fact, a safe overtaking procedure for a man in an E-type of Jaguar is probably very dangerous for a man in a Ford popu-

lar. And this kind of behaviour does rub off from one man to the next. How is a man to learn what is safe and what is not safe when he sees another man doing something which he himself can't do safely? How do we tell him that he can't do that? How do we get people to drive not in their own limits but the limits of their vehicle?

The final point is another psychological fact which is hard to take into account and that is the risk-taking behaviour of people acting within a group. This risk-taking is always very much higher than when the same people act in isolation, as individuals. Why can't we take that into account? I can't answer.

Yngve Kristensson

I inledningsanförandena framkom ju åtskilliga ytterst kontroversiella förslag. Vi har förslaget angående hur man skall behandla rattfylleristerna, frågan om man över huvud taget skall dra in körkort för dem eller bara göra vissa restriktioner, så att de får köra till sitt arbete trots att de har gjort sig skyldiga till rattfylleri. Detta leder över till spörsmålet när man skall sätta in körkortsindragningen? Skall det vara ungefär som man säger beträffande straffet, att det skall vara en sista åtgärd eller skall man behandla det på ett helt annat sätt, dvs. ungefär som en rutinåtgärd? Här finns ett samband också med rehabiliteringssynpunkten. Vad skall vi göra med alla de ungdomar som har gjort sig skyldiga till relativt grava brottsliga handlingar? Skall de få körkort eller ej?

Nils Fröding

Här sade Kaijser att den obetydligaste hjärnskakning kunde diskvalificera för bilkörning för längre eller kanske bara kortare tid. Det finns givetvis också många andra sjukdomsfall, som diskvalificerar

för bilkörning. Då skulle jag vilja ta upp en mycket känslig fråga. Hur skall läkaren informera körkortsmyndigheten om en sådan situation? För närvarande har vi väl här i riket den rekommendationen från socialstyrelsen att man skall underrätta länsläkaren. Systemet fungerar inte hundra procentigt säkert. Jag har en granne som har haft en hjärnblödning, och som är 80 år. Hans anhöriga ber honom att "kör för allt i livet inte bil", men han vill nödvändigtvis göra det. Det vore också av intresse att veta hur man utomlands har dessa informationsbestämmelser ordnade?

Hans Klette

I det samordnade kontrollprogram som här är nödvändigt — jag betonar alltså samordningen — ingår bl.a. den kontinuerliga skolundervisningen. Där ingår också en väldigt viktig faktor som heter upptäcktsrisk. Denna faktor har jag försökt att undersöka en hel del beträffande olika beteenden. Jag har studerat upptäcktsrisken, den subjektivt upplevda upptäcktsrisken, som preventivfaktor.

Vad har vi för möjligheter att öka upptäcktsrisken i vårt samhälle? Genom en ökad trafikövervakning finns det kanske en möjlighet. Vem står för den övervakningen idag? Det gör poliser. Allmänheten rapporterar mycket litet. Vill vi öka den subjektivt upplevda upptäcktsrisken måste vi omorganisera polisens trafikövervakningsarbete. Jag utgår ifrån i stort sett samma antal poliser som vi har idag. För att höja upptäcktsrisken kraftigt, så kraftigt som vi skulle behöva för att det skulle få en stor preventiv effekt för att öka trafiksäkerheten, så tror jag vi behöver ett mycket stort antal poliser. Vill vi ha det eller inte i vårt samhälle, frågar vi oss då. Om vi inte vill ha det, har vi då några andra möjligheter att skaffa oss andra grupper som deltar i trafikövervakningen? Jag tänker inte på en trafikövervakning som medför något straff utan en trafikövervakning som medför en korrektion så snabbt som möjligt.

Vi hörde från försäkringshåll ett inlägg om att man eventuellt skulle kunna använda sig av omdömesgilla bilförare, hur nu det skulle gå till. Finns det några andra grupper som man kunde använda sig av, frågar man. Vi använder oss f.n. av en specialutbildad personal vid parkeringsförseelser, parkeringsvakterna. I USA har man använt sig av specialutbildad personal för trafikdirigeringen. Finns det möjlighet att skaffa specialutbildad personal som bara är inriktad på trafikövervakning? Jag tror att det är möjligt. Det skulle vara roligt att få er respons på den här frågan.

Gunnar Lanteli

Jag är bilförsäkringsstatistiker i Hansa. Eftersom jag har blivit citerad två gånger så kanske jag måste säga ett par ord. Det är ju så att vi är helt ense beträffande målet. Målet är ju att få ner antalet olyckor. Man kan säga att det finns två huvudlinjer i hur man skall gå till väga, två olika uppfattningar. Det ena är att man försöker komma åt de förare som har speciellt hög olycksfallsbenägenhet, de s.k. olycksfåglarna. Det andra är att man försöker påverka samtliga förare, alltså även dem som är fullt normala.

Man kanske blir litet pessimistisk när man läser en del av rapporterna på symposiet, beträffande våra möjligheter att komma åt de speciellt olycksbenägna förarna. Man har konstaterat att det råder ganska svaga samband mellan de olika kriterier som man har och antalet olyckor. Vi har konstaterat att exempelvis antalet inträffade olyckor är ett ganska dåligt mått. Däremot är det ett något bättre mått om man räknar antalet trafikförseelser. Jag vet inte om alla riktigt fattade doktor Tallqvist där. Jag missuppfattade honom i första ögonblicket i varje fall. Jag skulle kanske därför vilja upprepa ett par saker, som man har konstaterat. Det är huvudsakligen amerikanska undersökningar och där har man alltså konstaterat att om jag plockar bort sådana förare,

som under en given observationsperiod, i detta fall på tre år, har vållat skador eller rättare sagt varit inblandade i olyckor, då får man en ganska obetydlig effekt på antalet skador under den kommande perioden. Här står exempelvis det att om de som har vållat två eller fler händelser under en treårsperiod togs bort, så skulle man bara minska antalet olyckor med 4 %. Nu kan man visserligen säga att detta är ett rent statistiskt resonemang. Man kan ju inte riktigt säkert garantera, att om olycksinblandade inte hade fått vara med i trafiken så hade kanske antalet olyckor minskat ännu mera. De kan ju indirekt vara orsaken till andras olyckor. Men däremot, om man går på de antal som har haft två eller flera förseelser, convictions, då hade man i alla fall bara kvar 75 % av olyckorna. Detta tycker jag i och för sig är ett ganska stort steg framåt.

Kruxet är emellertid att om man skall ta till så drastiska åtgärder, som att hindra folk att köra bil, då måste man ju ha ett kriterium, ett test som är oerhört tillförlitligt. Det måste råda nästan hundra procentig säkerhet för att man just får ut dem som verkligen är farliga, så att inte en massa oskyldiga människor hindras från att överhuvudtaget transportera sig själva i trafiken. Där måste man alltså kräva en mycket stor säkerhet.

Däremot finns det ju andra åtgärder som man kan vidtaga utan att man behöver ha fullt så stor säkerhet. Man kan alltså på olika sätt låta antalet förseelser få ekonomiska följder. Detta kan ju komma till uttryck bl.a. i försäkringens system. Det finns bolag i Amerika som har tillämpat just ett sådant här pricksystem. Där har man alltså beräknat premien på basis av antalet förseelser. Då är förseelsen dessutom graderad med hänsyn till svårhetsgraden så att man får ett system. Jag tror dessutom att detta skulle ha en indirekt gynnsam inverkan på trafikuppförandet om man hade ett sådant pricksystem som vederbörande förare själv kände till. Hur många prickar han hade och hur han successivt kunde närma sig den gräns där han kanske riskerar att inte

få lov att köra bil längre. Man har olika möjligheter att ge honom varningar under tiden osv. Sedan är det ju inte så att detta skall vara ett evigt belastningssystem. Prickarna försvinner efter ett visst antal år. Så att man kan ju säga det att om man under en viss tid har burit sig illa åt så kan det så småningom kompenseras av att man därefter uppträtt korrekt. Jag tror att detta skulle ge folk en viss tankeställare. De som är — jag kanske inte skall säga olycksfåglar — men de som kanske är lite mindre omsorgsfulla i trafiken än flertalet förare. De skulle på det viset få en motivation för att verkligen försöka bättra sig.

Det var också en annan siffra som nämndes — jag vill bara påpeka detta för att det inte skall bli några missförstånd — nämligen att om man kunde ta bort de förare i trafiken som har vållat ett stort antal skador under en viss tid, då skulle det påverka frekvensen mycket litet enligt vår statistik. Nu är det en sak som man inte får glömma bort i detta sammanhang. Man får inte ta detta över en kam. Det finns förare som normalt sett är — höll jag på att säga — berättigade eller för vilka det är mera förståeligt att de råkar ut för flera skador. Detta gäller framförallt sådana som har en oerhört stor årlig körsträcka, taxiförare, långtradarchaufförer o.dyl.

Om man skall definiera olycksfåglar så måste man säga det att det är folk som har en extremt hög olycksfallsbenägenhet under exakt samma förhållanden. Man måste således mäta ett stort antal individer under exakt samma betingelser, och då är det min uppfattning i varje fall, att det finns naturligtvis folk med högre och med lägre olycksfallsbenägenhet, liksom alla andra egenskaper är fördelade. Människor är ju olika och det är mest en fråga om var man anser att gränsen bör gå för vad som är tolerabel olycksfallsbenägenhet.

Rune Andreasson

Jag vill bestämt och definitivt ta avstånd från Bertil Odéns idéer om en angivarorganisation. Det är inte på det sättet man angriper trafiksäkerhetsproblemet. Jag kan inte här närmare motivera det, men jag har tillsammans med doktor Gerhard Munch i Tyskland skrivit en liten bok som kommer till våren och som behandlar just detta. Det är aktgivandet på sig själv i trafiken som är det väsentliga, inte att upptäcka grandet i broderns öga.

Sedan efterlyste herr ordföranden synpunkter och tog som exempel upp Buikhuisens förslag rörande åtgärder som rör rattfyllerister. För det första, när han talar om trafikövervakningen tror jag vi kan vara helt eniga med honom. Det är så allmänt uttryckt att det är svårt att veta vad han egentligen avser.

Jag är också helt enig med honom när han föreslår att man skall angripa de bakomliggande orsakerna till rattfylleriet. Jag tror att vi är inne på fel vägar då rattfylleriet tenderar att öka och vi fortsätter att sända folk till Bogesund. Det gäller att ta hand om dem, lära dem en del om alkoholeffekter, försöka bota deras alkoholsjukdom. Vi drar in deras körkort. De kör bil ändå. Vi sätter in dem i fängelse. De kommer ut därifrån. De är lika okunniga om alkoholeffekterna och deras grundproblem, alkoholsjukdomen, finns kvar oförändrat. Jag tror det är väldigt viktigt ur rehabiliteringssynpunkt att ta itu med det här problemet.

Vidare talar Buikhuisen om att man inte längre skall ha ovillkorliga körkortsåterkallelser. Det borde vara en fråga som kan övervägas i samband med åtgärder i samband med rehabiliteringen. Det sammanhänger för övrigt också med möjligheterna att övervaka det hela.

Så långt är vi nog eniga, men sedan tycker jag att Buikhuisen går tillbaka till metoder, som för länge sedan är avskaffade i det moderna samhället. Vi hade en gång i tiden i det här landet ett system, där man satte brottslingar i stock utanför kyrkan på backen till allmänt beskådande

och också bespottande för dem som hade lust. Att här på samma sätt sätta en speciell skylt på dessa bilar för att peka ut dessa brottslingar, det är väl ändå i stort sett samma system. I varje fall har jag väldigt svårt för att kunna känna några sympatier för sådana idéer.

Terence Willett

I would like to say something about disqualification. It is a penalty that I have been studying in research during the last three or four years and we have been interviewing offenders who had been disqualified to see just what the effect is on them. Some of them had been disqualified for quite short periods, about 2—6 months, the majority had been disqualified for a year or over. And there is no doubt that of all penalties that a court can impose, disqualification is disliked more than any other.

But it seems to last for only a very short time as an effective penalty. After about three months the warning of the court as to what will happen if you drive — that you will go to prison or whatever it may be — seems to fade away. Very often the offender has got his car or, if he is a youngster, he has got his motor-cycle under his eyes the whole time. I should think it is perhaps a little unreasonable to expect someone, whose principal character is not strength, to stand up to the temptation and not drive, and most of them of course do. The reason they do so is that the chances of getting caught are almost none, and in most of our cities this is true. I think, however, disqualification, especially when used conditionally, has a very important role to play, not only as a deterrent but also reformatively and as a rehability measure. I was impressed by California where they imposed conditional disqualifications. You may drive for your work or you may drive in certain places. You may drive at certain hours but not at others.

Now this makes people laugh when one

suggests it in England because they say: "Ridiculous, it could not be enforced." But it can be enforced if the appropriate kind of police is used. We must use a high density of traffic police on the roads and even police visiting the homes of people who are known to be disqualified. This, in fact, they do in Chicago, to see that they are there, that their cars are there, and so on. They call this harassment and think it is justified. And they take it seriously.

I'd also like to call attention to the comment by Judge Fröding who did touch on something very, very important. That is that we tend to forget, when we concentrate so much on the young, that we are an ageing society, that one of the big problems on the roads is going to be the old people. This is a problem for the doctor and it's a problem for the insurer.

In England the traffic authorities have forgotten this problem. They left it to the insurer to practise in his own way the principle of only renewing the insurance policy if a medical examination is conducted. But although the medical examination is often conducted by the medical practitioner of the patient, the doctor is still in the spot. It could be that the answer to many medical problems is that the license authority maintains its own clinical system, where drivers whether they are old or whether they are in some way suffering from a reportable illness could be examined by someone who has no commitment particularly to that patient. This is something that we are going to have to think about increasingly. I am very glad that it was mentioned because it is often forgotten.

Per Boëthius

Jag skulle vilja göra några reflexioner i anledning närmast av assessor Cosmos förslag rörande trafikförsäkringens inpassning i säkerhetsarbetet. Man har länge haft detta problem klart för sig och man har faktiskt gjort en hel del i fråga om bilför-

säkringens inpassning. Det främsta medlet vi har är bonussystemet och det är ett mycket viktigt medel därför att det betyder ganska stora pengar. En försiktig förare kommer relativt snart ner i 25 % av premiekostnaden för trafikförsäkringen och 50 % på övrig försäkring. Det är alltså ett incitament till uppmuntran till säker körning som vi har haft länge och som också uppfattas av försäkringstagarna såsom något mycket värdefullt att slå värn om. Jag tror att detta är en sådan sak som försäkringen kan göra.

Andra åtgärder har ju också gjorts inom försäkringen. Ett bolag har nyligen premierat användande av säkerhetsbälte på så sätt att man får ett ganska stort belopp extra vid eventuell personskada, om man har använt säkerhetsbältet och om passagerarna har använt säkerhetsbälte. 10 000 extra på förarplatsförsäkringen tror jag det var. Andra former av uppmuntran direkt är förtjänstmärket för prickfri körning. Det visar sig att allmänheten är mycket intresserad av att få detta. Det delas årligen ut flera tusen stycken genom trafikförsäkringsföreningen.

Å andra sidan kan man också genom försäkringen genom åtgärder som känns belastande för försäkringstagaren påverka hans körsätt. Det har man också gjort. Man har infört ungdomssjälvrisk. Om en förare av en bil som är under 24 år åstadkommer en skada så får han, eller snarare försäkringstagaren, vidkännas en självrisk som dock är ganska låg, 200 kronor på trafikförsäkringen och 100 kronor på övriga moment.

Man skulle naturligtvis inom trafikförsäkringen kunna ha en massa olika moment efter vilka man reglerade de här premieförhållandena. Det är emellertid också en ganska invecklad sak. Om man tänker på ungdomarna, som ju enligt trafikförsäkerhetsrådets utredning är särskilt belastade — nya körkortstagare i 18-årsåldern, som kör mellan 1 000 och 2 500 mil, har fem gånger så många olyckor som en 50-åring med samma körsträcka. Skulle man beträffande dessa ungdomar göra så, att man belastar dem med den

verkliga kostnaden för den risk de utgör, så kommer man upp i ganska astronomiska belopp. Trafikförsäkringen för en Folkvagn i premieklass 1 och bonusklass 1 kostar ungefär 600 kr och för en Mercedes 220 i samma läge kostar försäkringen nära 1 000 kr. Skulle man säga att en ungdomlig förare, som är en fem gånger så stor trafikrisk, skall bära sin risk själv, så skulle han ha en premie på 3 000—5 000 kr enbart på trafikförsäkringen. Tar man med hela försäkringskomplexet på bilen, så kommer han upp i kanske bortåt 10 000 kronor i premie om året. Det är alltså, såvitt jag kan se, orealistiskt att göra detta. Man kan inte gå den vägen.

Jag är medveten om att i vissa stater i USA har man ett system liknande detta. Där kommer man ganska snart i ett premieläge där man inte längre kan få försäkring och alltså inte längre kan köra bil. Men jag tror kanske inte att det är den lyckligaste vägen. När det gäller de unga förarna, så vill jag instämma med vad Thorsson sade: Utbildning i skolan och en riktig utbildning i skolan, på mellan- och högstadiet, som leder fram till ett körkort. Jag tror detta är en mycket viktig möjlighet att komma till rätta med de unga förarna.

Får jag också säga några ord om urspringsprincipen när det gäller dåliga förare i övrigt. Jag har hållit på med trafikskadereglering i ungefär 20 år och har väl haft drygt 2 000 trafikmål. Jag tycker nog, utan att jag har några statistiska belägg för det, att man ofta ser att föraren av bilen, som har råkat ut för en olycka, inte är lämpad att ha körkort. Bara för ett par år sedan hade jag ett mål, där det gällde förarplatsförsäkring. Det visade sig vid utredningen att föraren hade kört ut på en huvudled med 80 km:s fart utan att sakta ner eller stanna. Det var stopplikt. Det gjordes gällande i det här målet att det var grovt vårdslöst att köra på det viset, och det stannade domstolarna också vid.

Emellertid var nog den verkliga orsaken till den här körningen en helt annan. Det visade sig vid ett samtal med provinsialläkaren på orten, att föraren som var i

50-årsåldern, sedan flera år tillbaka led av psykisk instabilitet. Han hade hallucinationer. Han hörde avlidna anförvanter i radion även när den var avstängd etc. etc. och hade black-out-perioder. Läkaren hade rekommenderat intagning på mentalsjukhus för vård. Det är som doktor Kaijser sade, alldeles uppenbart, att skallskadade personer utgör en klar trafikrisk. Där borde man alltså försöka komma fram till en skärpt kontroll och övervakning mot dessa personer, utan att detta skall framstå såsom något diskriminerande för dem personligen.

När det gäller körkortet och körkortsindragningarna, så har jag många gånger undrat varför vi inte här i Sverige liksom i England har provisoriska körkort. I England har man ett L på bilen under en viss tid efter det att man fått förtroende att köra. Skulle man inte i Sverige kunna införa något liknande och utsträcka det att gälla för dem som har varit särskilt olycksbelastade? Man skulle ålägga dem att under en viss tid, förslagsvis två år, på sitt fordon ha ett märke som visar att de är under utbildning. För den som är så trafikbelastad är det nämligen motiverat, att han får mera utbildning.

Jan Ljung

Jag är livförsäkringsstatistiker. Här har diskuterats och framförts många synpunkter på eliminationen av förare och jag är inte alls kompetent att ta ställning i detaljfrågor. Det finns emellertid många kloka synpunkter som jag håller med om. Men man har mycket litet berört den ram inom vilken man har valfrihet att göra den eliminationen. Vad finns det för alternativ?

Jag är själv en medelgod förare ungefär och det betyder att jag är ganska omdömeslös. Ofta märker jag att jag gör dumma saker. Därför vill jag undvika att köra långa sträckor och i dåligt väglag. Det är numera praktiskt taget omöjligt. Jag har anledning att med min familj fara 45 mil. Förr i världen kunde jag polettera

mitt bagage och åka tåg och därigenom komma fram till närheten av mitt mål och sedan ta en billig taxi. I dagens läge kan jag inte polettera på närliggande stationer. Jag kan inte polettera med express-tåget utan måste fara in till Stockholm i förväg. Jag hamnar fem mil från bestäm-melseorten. Resan kostar 150 kr tur och retur med taxi och SJ:s avgifter. Priset blir sådant att jag inte kan ta med hela min familj.

Jag tycker att detta får man inte glömma bort. Vi skall visserligen hålla oss till den mänskliga faktorn. Den sidan av samhällets arbete som avser kommunikationerna är emellertid väldigt viktigt för att vi skall ha valfrihet att dra in körkort och att behandla folk som har fått hjärnskada. Det är en väldig konsekvens för mig själv att få körkortet indraget. Och då är jag ändå lyckligt lottad. Jag bor i ett nästan civiliserat storstadssamhälle — i Stockholm. Jag har en bekant, som bor på den andra ändan av min färdväg, som tyvärr är notorisk och hopplös alkoholist. Han är lantbrukare och har sällan en promillehalt som understiger de lagliga gränserna. Han kör bil varje dag. Han är tvungen. Hans fru har inte körkort. Hans medarbetare har inte körkort. Gudskelov är de lokala polismyndigheterna så kloka att när de ser honom går de in i en stuga och gömmer sig. Han har ännu icke vållat en enda olycka. Men han har inte heller något alternativ. Det finns ingen billig taxi att få. Jag vill således bara att vi inte skall glömma bort den synpunkten att de allmänna kommunikationerna är dåliga.

Wouter Buikhuisen

I'd like to say a few words to Mr. Andreasson, and I would like also to take the opportunity of making a general remark about the discussion with regard to those people who are involved in accidents. It has been told here several times that most accidents have been caused by normal people. In general I would like to agree with this but I should like to make

a small remark in this connection. We should in the first place try to differentiate between different kinds of traffic offenders, and one category for which I would like to make an exception is drunken drivers. I think that in general it is the ordinary man who is involved in a traffic accident in which alcohol does not play a role. But I do not like to say that in the case of those people who have been involved in an accident where alcohol plays a role. You cannot say that these in general are as normal as the other group involved in accidents without alcohol being drunk. I think it is important to make this differentiation, and I could prove this with some figures. We compared two groups of people, one was convicted for drunken driving and the other was just a control group. This control group was matched, was made equal with regard to such points as the time they'd had their driving licences, their profession, whether they needed a car for their profession, their age, and so on. Then we compared the traffic records of both the groups. We found, for instance, that the drunken drivers as a group are four times as much involved in traffic accidents as the other group. The drunken drivers as a group have committed about four times as many serious traffic crimes. If we also look—and this, of course, I must remind you are figures for the Netherlands—to the percentage of people who have been involved in fatal accidents, we also find that 12% of these cases happened under the influence of alcohol. So I think there are many reasons for treating the drunken drivers as a separate group.

Well, then we have to do two things. And one is that we should ask the question: "Is the group of drunken drivers different from the group of non-drunken drivers? Well, I can assure you, that I have no preference in this remark. I'm just looking to see whether they are different. I'm comparing the two groups and then we find some differences also with regard to personality trends, for instance with regard to neuroticism and to social

situations like family problems, marriage problems and any kind of individual problems. Then I am inclined to say that a lot of them cannot be regarded as normal persons, normal in this way that they could be compared to a random sample of licence holders.

When I'm saying that I would add just to Mr. Bishop, I'm not saying that to insult the group. It is just a kind of diagnosis. I do not have any preference in saying so. And then I think we could all agree that we have to do something about it and I have tried to mention some of the things which you could do.

The first thing I tried to emphasize, and Mr. Andreasson, I think, agreed with that, is that the measures we take should not be only repressive. When we try to do something we should not only look to the drunken driver but also to our system and we should ask ourselves: "What is the contribution of our system to the fact that this man is a drunken driver again, is committing a crime like this again?"

Then I could mention that at a study we have carried out and from which clearly appeared that a very important point is the time which elapses between the day of arrest and the day the sentence is executed, we found that the longer the time between the two points, the more recidivism occurred. This is something which lies in the system itself. Indeed we should try not to make this period between day of arrest and day of execution too long. We found that in the Netherlands this could sometimes be two years. That is, of course, a ridiculous time. We should therefore look also at the system.

But here comes a point in which we say, well, we have tried several things, we have tried to modify the system, we have tried to warn the man and we don't mind that he likes to drink very much. We only mind that he also uses his car after having been drinking so much. Then we just want to say: What else can we do? Then I think the moment of stigmatizing, although indeed I hate that myself, also should be introduced for repeaters—I

want to emphasize that—not for the first offenders. And we have to do this because it has been proved time and time again that drunken drivers are causing many more accidents than could be expected only by chance. And that is the reason why after some time we have to take this kind of measures, but indeed we should not start with them.

Anders Englund

Jag skulle vilja fråga: Är det inte ganska betecknande att vi har så stort intresse för onyktra förare, för förare som har upprepade olyckor och andra små grupper? En förklaring tycker jag verkar vara att vi har själva väldigt svårt att gå med på att trafiksäkerhet rör alla, att olyckor kan vem som helst bli inblandade i. Vem som helst kan begå det här lilla felet som behövs för att råka ut för en olycka. När vi har svårt för att inse att trafiksäkerhet rör alla och dessutom är angelägna att lösa problemen snabbt så är det så lätt att ta till de här små grupperna som vi inte själva räknas till. Det ligger då nära till hands att leta efter olycksfåglarna och vidhålla att det skulle gå att på detta sätt lösa trafiksäkerhetsproblemen trots att, som direktör Lanteli framhöll, det inte ger så stor effekt om man plockar bort de s.k. olycksfåglarna. Det är dessutom väldigt svårt att i förväg tala om vilka dessa är. Man vet ju egentligen inte vilka man skulle ta bort.

Det ligger också nära till hands att göra trafiksäkerhetsfrågan till ett ungdomsproblem eftersom vi inte är ungdomar själva. Jag skulle således här vilja allvarligt ifrågasätta trafiksäkerhetsrådets undersökning och hur man kommer fram till denna fem gånger större risk? Det har nämligen gjorts mängder av undersökningar som visar att nya förare i trafiken utgör större risker än sådana med längre erfarenhet. Men det gäller oavsett om man är 18, 24, 44 eller 64 år. Jag tror alltså att vi här skjuter över problemet på försvarslösa grupper när vi letar efter endera olycks-

fåglar eller unga förare, eller plockar fram andra extremfall. Samtidigt löser vi inte problemet.

Jag skulle t.ex. vilja fråga: Är det någon här i auditoriet som kan bevisa att han inte någon gång har utsatts för en eller fler hjärnskador? Det behöver inte vara i trafiken. Under uppväxttiden lär man väl utsättas för åtskilliga sådana olyckshändelser som är av samma allvarliga karaktär som att köra huvudet i en vindruta, t.ex. att stå på örona från en cykel eller att slå i isen under ishockeyspel. Det lär inte bli många förare i trafiken om vi skall plocka bort dessa fall också.

Jag undrar om vi inte snart, helst nu, måste acceptera att vi får lov att gå en mer mödosam väg för att lösa trafiksäkerhetsproblemen. Det innebär, att så långt det går, måste vi ordna trafiksystemet så att de allra flesta klarar av att vistas i det. Det har tidigare nämnts att Stina Sandells undersökning, när det gäller barn, visat att det går att lära barn trafikregler. Undersökningen har också visat att det finns effektivare metoder än de vi nu använder. Framför allt har emellertid undersökningen visat att barn inte kan tillämpa reglerna även om de känner till dem. Då är, som jag ser det, enda lösningen att försöka ordna en miljö åt barnen som inte ställer större anspråk på dom än dom klarar eller också acceptera att det blir olyckor.

Vi kan räkna upp rader av liknande exempel på att trafikmiljön är för svår som gäller för bilförare, för fotgängare i vuxen ålder, för åldringar, för handikappade osv. Och även om vi ordnar trafikmiljön efter bästa förmåga så att den i varje detalj så långt det går är anpassad efter människan så kommer det att uppstå olyckor. Dessa måste vi också angripa med hjälp utav den mödosamma vägen — alltså med utbildning genom hela skolsystemet. Det går alltså inte att hoppas på att vi genom att utesluta de små grupperna av trafikanter klarar av de stora problemen.

Lennart Palmgren

professorns undersökning blir det betydligt svårare att ta ställning till återkallelsefrågor. Jag har ingen anledning eller någon kompetens att bedöma riktigheten i professor Duremans teser, men när man har ett ärende som rör exempelvis rattonykterhet eller rattfylleri så tycker man att man finner det meningsfullt att återkalla körkortet. Efter den här undersökningen kan man verkligen fråga sig om det är meningsfullt att återkalla ett körkort för en person som har gjort sig skyldig till ett våldsbrott som inte är ett trafikbrott. Finns det inte anledning, på grund av de resultat som man kommit fram till, att överväga att helt slopa den bestämmelse i VTF som säger att man skall ompröva körkortet vid ett sådant brott som innefattar våld? Skall man endera ta bort den paragrafen helt eller har man grund för att ompröva körkortsfrågan vid allvarlig allmän brottslighet?

Ingmar Dureman

Ja, frågan är helt befogad att ställa i det här sammanhanget. Naturligtvis kan man säga som så att de som tillhör den här tredjedelen i varje brottslighetsgrupp, de som står för trafikolyckorna och trafikförseelserna, det är den gruppen som vi vill åt. Men man kan ju också lägga till att det är den gruppen man kommer åt om man återkallar körkort i anledning av trafikförseelser. Man behöver således inte åberopa saker som ligger utanför trafikmiljön. Argumenteringen skulle närmast vara att, om man skall välja mellan en vidgad rapporteringsskyldighet och att ta bort rapportering av annat än trafikbrott, så är det rimligare att helt ta bort rapporteringen. De farliga trafikanterna kommer ändå att bli föremål för körkortsindragning med hänvisning till det sätt på vilket dom betar sig i trafiken.

Participants at the symposium on "The Human Factor in Road Traffic", held by the National Association of Swedish Insurance Companies in cooperation with the Swedish Government Traffic Committee on November 19-20, 1969

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Mr **Per Boëthius**, general counsel, Skandia Insurance Group, Stockholm, Sweden

Doctor **J. O. Brown**, psychologist, Applied Psychology Research Unit, Cambridge, England

Professor **Wouter Buikhuisen**, criminologist, Groningen, The Netherlands

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Mr **Anders Englund**, psychologist, Traffic Safety Board, Stockholm, Sweden

Judge **Nils Fröding**, Sundsvall, Sweden

Judge **Stig Iversen**, Department of Justice, Stockholm, Sweden

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Mr **Olle Karleby**, president, the National Association of Swedish Insurance Companies, Stockholm, Sweden

Doctor **Hans Klette**, criminologist, Lund, Sweden

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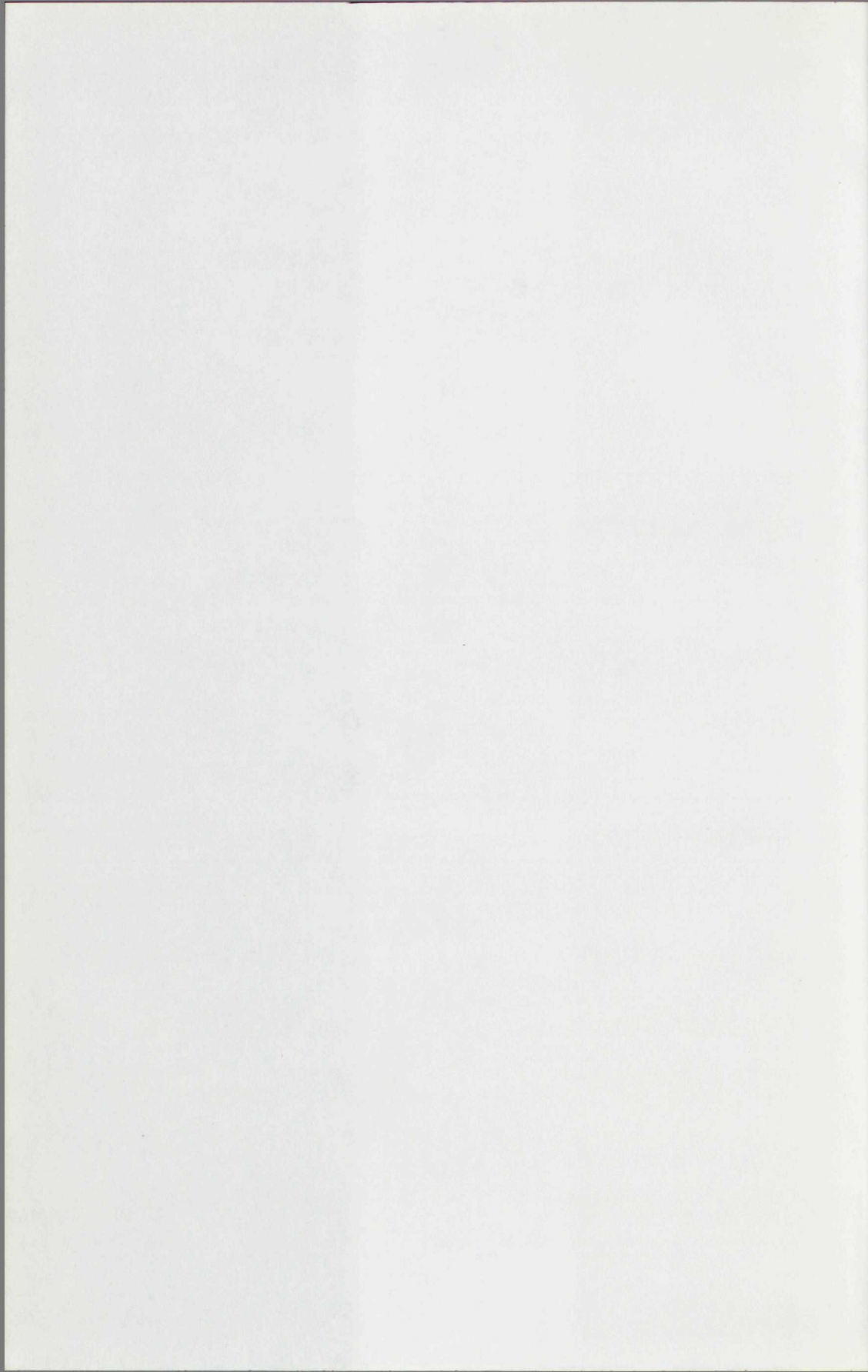
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Nordisk udredningsserie (Nu) 1971

Kronologisk förteckning

1. Forskning med relation till utbildning för åldersklasserna 16–19 år.
2. Harmonisering av matematikundervisningen i årskurs 1–6 i de nordiska länderna.
3. Konsument- och marknadsföringsfrågor.
4. Nordiska transportproblem.
5. Nordiska ministerrådets arbetsformer.

Statens offentliga utredningar 1971

Systematisk förteckning

Justitiedepartementet

Post- och Inrikes Tidningar. [2]
Snatteri. [10]
Förslag till aktiebolagslag m.m. [15]
Ny domstolsadministration. [41]
Utsökningsrätt XI. [45]
Unga lagöverträdare I. [49]
Rätten till abort. [58]
Högsta domstolens kansli. [59]
Maskinell teknik vid de allmänna valen. [72]
Kriminalvård i anstalt. [74]
Offentligt biträde och kostnadsersättning i förvaltnings-
ärenden. [76]
Den mänskliga faktorn i vägtrafiken. [81]

Socialdepartementet

Familjepensionsfrågor m.m. [19]
Särskilda tandvårdsanordningar för vissa patientgrupper.
[38]
Läkartjänster. [68]

Försvardepartementet

Utredningen om handräckningsvärnpliktiga. 1. Hand-
räckning inom försvaret. [56] 2. Utbildningen av vissa
värnpliktiga i stabstjänst. [57]

Kommunikationsdepartementet

Ny sjömanslag. [6]
Ett nytt bilregister. [11]
Utredningen angående befordran av farligt gods på väg m.m.
1. Europeisk överenskommelse om internationell transport
av farligt gods på väg. (ADR) Betänkande I. [20] 2. Euro-
peisk överenskommelse om internationell transport av farligt
gods på väg. (ADR) Bilaga A. [21] 3. Europeisk överens-
kommelse om internationell transport av farligt gods på
väg. (ADR) Bilaga B. [22] 4. Europeisk överenskommelse
om internationell transport av farligt gods på väg. (ADR)
Register m.m. [23]
Sjömanspension. [30]
Lastbil och Taxi. [34]
Vintersjöfart. [63]

Finansdepartementet

SOU 71. Handbok för det officiella utredningstrycket. [1]
1970 års långtidsutredning. 1. Svensk industri under 70-
talet med utblick mot 80-talet. Bilaga 2. [5] 2. Finansiella
tillväxtaspekter 1960-1975. Bilaga 4. [7] 3. Arbetskrafts-
resurserna 1965-1990. Bilaga 1. [8] 4. Miljövärdet i Sve-
rige under 70-talet. Bilaga 8. [12] 5. Utvecklingstendenser
inom offentlig sektor. Bilaga 6. [13] 6. Varuhandeln fram
till 1975. Bilaga 3. [14] 7. Regional utveckling och plane-
ring. Bilaga 7. [16] 8. Export och import 1971-1975.
Bilaga 5. [40] 9. Plan och prognos. 1970 års långtidsutred-
ning. Bilaga 9. [70]
Större företags offentliga redovisning. [9]
Mått och vikt. [18]
Betalningsbalansutredningen. 1. Den svenska betalnings-
balansstatistiken. [31] 2. Valutarreserven och utrikeshandelns
finansiella struktur. Bilaga. [32]
Teknisk översyn av kapitalbeskattningen. [46]

Testutredningen. 1. Psykologiska urvalsmetoder inom
statsförvaltningen. [47] 2. Personurval med hjälp av psyko-
logiska undersökningar. [48]
Mellanölsfrågan. [66]
Svenska folkets alkoholvanor. [77]
Jordbruksbeskattningen. [78]
Byggnadsindex för bostäder. [79]

Utbildningsdepartementet

Vuxenpedagogisk forskning och utbildning. [24]
Kyrkan kostar. [29]
Produktionsresurser för tv och radio i utbildningen. [36]
Utredningen rörande lärarnas arbetsförhållanden. 1. Lärar-
nas arbete. En statistisk arbetsstudie. [53] 2. Lärarnas ar-
bete. Bilaga I. Tekniska rapporter. [54] 3. Lärarnas arbete.
Bilaga II. Tabeller. [55]
1968 års utbildningsutredning. 1. Universitetsstudier utan
examen. [60] 2. Val av utbildning och yrke. [61]
3. Högre utbildning och arbetsmarknad. [62]
Fonogrammen i musikalivet. [73]
Vuxna: utbildning-studiefinansiering. [80]

Jordbruksdepartementet

Veterinärdistriktsindelningen. m.m. [3]
Bokskogens bevarande. [71]

Handelsdepartementet

Fri affärsid. [33]
Konsumentpolitik - riktlinjer och organisation. [37]
Näringspolitiken - ny verksamhetsorganisation. [69]

Inrikesdepartementet

Servicekommittén. 1. Boendeservice 3. Kommunstudien.
[26] 2. Boendeservice 4. Projektstudien. [26] 3. Boende-
service 5. Totalkostnadsstudien. [27] 4. Boendeservice 6.
Strukturstudien. [28]
Den fria rörligheten för personer inom EEC. [35]
Den svenska köpkraftsfördelningen 1967. [39]
KSA-utredningen. 1. Försäkring och annat kontant stöd vid
arbetslöshet. [42] 2. Arbetskraftens struktur och dimensio-
ner. [43] 3. Bilagor till KSA-utredningens betänkande. [44]
Invandrarutredningen I. [51]
Byggandets industrialisering. [52]
Saneringsutredningen. 1. Sanering I. [64] 2. Sanering II.
Bilagor. [65]
Ränteomfördelning och vinstutdelning. [67]

Civildepartementet

Kommunala val. [4]
Räddningstjänst. [50]
Fysisk rikspanering. [75]

Industridepartementet

Malm - Jord - Vatten. [17]

