Road Safety and Mental Health in South Africa

PART II

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ALCOHOL AND DRUGS

The literature on the effects of alcohol and drugs on human behaviour and the relationship to road accidents is vast, and probably constitutes the bulk of the literature in respect of the human factors involved in death on the road. As it is well known, reference to this aspect will be relatively brief, but its importance and all the connotations involved should not be overlooked.

Lovibond and Bond[17] described the Warwick Farm project in which 16 racing and rally drivers and 26 ordinary drivers were tested in rapid evasive manoeuvres on a race track after having consumed varying quantities of alcohol. In non-competition drivers, marked impairment was evident even at 0,05%, and at 0,06% the competition driver had lost the skill and advantage over the ordinary sober driver. Increasing blood alcohol levels resulted in a subtle, insidious, unobservable, progressive impairment of driving performance; the impairment at 0,05% was particularly noticeable in less skilled non-competition drivers, where a more dramatic effect may lie in the reduced capacity of the driver to handle emergency situations. In one incident an experienced driver reported that he knew the efforts he was making would not have the desired effect, but that he was powerless to adapt his behaviour appropriately.

In this respect Pittman[18] indicated that highway crashes involve an extremely disproportionate number of individuals with a blood-alcohol concentration of 0,05%, or more. At least 3 variables are, however, crucial to the understanding of highway crashes. The first is the type of drinker involved in highway crashes (he concludes that it is the problem drinker most frequently involved and *not* the social drinker); the second is the driving skill of the individual behind the wheel; and the third, the interaction of road and car conditions; all 3 factors apply in the highway crash. 'Indications are that highway crashes are basically a problem of industrialised and urbanised society, thus cultural patterns relevant to alcohol and drug-taking are significant."[18] Sociologically, highway crashes are viewed as deviant behaviour and the most frequent approach is to view the high-blood-alcohol driver as either immoral or sick. The moralistic approach has shown, in studies such as those in California, that the imposition of severe legal sanction is not effective enough for chronic alcoholics or problem drinkers who drive.

This being so, it might be appropriate to consider another line of approach and to take cognisance of the

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comments of Sir Martin Roth[19] in his Charter Address as the first President of the Royal College of Psychiatrists: 'Even if such contentious areas as crime, alcoholism, drug dependence and sexual deviation are taken, psychiatry with its roots in the clinic and in the medical model and psycho-analysis, which never relinquished psychiatric diagnosis, have an honourable record as pioneers in the systematic and objective analysis of such problems, and in changing society's punitively moralistic attitudes in the direction of greater tolerance, detachment and humanity.'

Pittman[18] refers to the difficulties of sickness and refers to medical ethics, screening of problem drinkers, the use of compulsory civil commitment to treatment facilities and, in this respect, states that 'we notice that while all Western societies are against highway crashes, when it comes to the crucial matter of putting up the financial resources to provide treatment facilities, it is another matter'. Pittman, having drawn attention to the fact that more research is directed to trying to develop safe motor cars rather than to problem drinkers on the highway, asks significantly 'whether society is willing to allocate the kind of resources that it allocated to place men on the moon and to military ventures'. If the accident rate is to be reduced education is also obviously necessary, but Pittman considers that the primary educators within any society are the family units, and the individual peer groups, directed primarily towards those age groups where the highest incidence of alcoholism or highway crashes, or both, occur. In this respect the highest rate of alcoholism would appear to be in the middle age group.

There appears however, to be a link between problem drinkers, car accidents and some form of socially unacceptable behaviour. Nelker[20] indicates that there is virtually universal agreement that about 10% of all drivers are excessive drinkers, 80% are modest drinkers without any apparent alcohol problem, and 10% are non-drinkers, but it is generally accepted that drivers in 50% of serious road accidents have been affected by alcohol. In Sweden the divorce rate is 10% among alcoholics, 1% among abstainers, and the incidence of criminality, 48% for alcoholics and 2,5% for abstainers, and many excessive drinkers are socially maladjusted and criminal individuals. Nelker also quotes McCarroll and Hadden (1963) that 75% of a group of 50 pedestrians killed in road accidents had a high blood-alcohol content, whereas only 34% of pedestrians in the same situation in a control group, had been drinking.

Berrill[21] describes an examination of 100 unselected dead drivers.

Only 18 had zero alcohol levels at postmortem, only 11 had alcohol levels between 0 and 0,05%, and the Grand Rapids survey showed that problems do not arise until the latter level has been reached. He also states that drivers with levels of over 0,05% are significantly over-represented in crashes and this over-representation becomes more marked the higher the alcohol level. He quotes Goldberg *et al.* (1952) to the effect that alcohol misusers were 2,4 times as common among traffic victims as they were in the general population, and that they accounted for 32% of all crashes studied. In Victoria, Australia, it was found that in a total of 8 500 drinking drivers, the 20 - 24-year-old group provides 28% of cases of drunken driving, although this probably accounts for only 8% of licensed drivers; 71% had levels over 0,15% while 33% were over 0,2%, and in this latter group the incidence of criminal records rose to 52%. He states dogmatically that drivers in crashes who have been drinking, and drivers arrested for drunken driving, are not typical ordinary drivers. Berrill[21] also quotes Waller who stated that the majority of drinking drivers involved in crashes or offences were already frequently known to community service agencies by the age of 25 - 30 years, and Glatt, that an arrest for drunken driving frequently precedes admission to a mental hospital for alcoholism by 7 years, and he emphasised the need after crashes for treatment of young drivers who have a high alcohol content.

Keating[22] described individuals convicted of drunken driving, dangerous driving, and failing to stop after an accident as being problem drinkers and not social drinkers. In his clinic of 1 100 patients of all socio-economic groups with a mean age of 41 years, 41% of the alcoholic patients had civil offences and of these 80% involved alcohol; multiple convictions were found in 70%, but there were few convictions among the social drinkers; 78% of 674 clinic patients examined had been involved in the transport of goods and people for at least 1 year. He notes the important relationship between driving offences and alcohol and civil offences and alcohol and, as a preventive measure, he suggests a central computerised system to collate both driving and civil offences in order to identify problem drinkers so as to cancel their licences.

Some relationship exists, therefore, between the incidence of individuals charged with drunken driving or other serious motor offences, and alcohol and organised crime, frequently of a violent nature, as was shown by the findings in the supplement to the *Quarterly Studies on Alcohol,* 1968, and by Willett, as quoted by Whitlock.[3] This applies particularly to the psychopathic offender and his innate inability to profit from experience, his aggression, and other concomitant paranoidal attitudes which are potentiated by the consumption of alcohol.

Henderson[23] discussed the interaction between psychotropic drugs and alcohol, and Milner[24] also indicated that a number of commonly precribed drugs may potentiate the effects of alcohol. He stated that it is probable that drugs such as chlordiazepoxide potentiate alcohol, and in a 90-day study of 68 drivers on this preparation, traffic accidents occurred 10 times more frequently than predicted in a control group. He quotes Reggiani *et al.* (1967), Milner *et al.* (1963), Murray (1960) and the work of Kielholz *et al.*, that 20 mg of chlordiazepoxide significantly added to the deleterious effects on driving skills with a blood-alcohol level of 0,09%. He quotes further studies on the supplementary and potentiating effects of major tranquillisers and antidepressants and the finding that patients on antidepressants had 4 times the error score after alcohol than when they were sober. Highly significant correlation results are reported on the effects of a combination of the major tranquillisers and antidepressants together with alcohol, and an increase in fatigue, sleepiness and loss of energy. Thus a number of commonly prescribed drugs may add to the effects of alcohol.

As far as the effects of drugs alone are concerned,

Pittman[15] states that insufficient research has been undertaken into the effects of marihuana, barbiturates, and amphetamines prior to significant generalisations being made. Nevertheless, it is obvious that efficiency and stability must be endangered.

It is generally accepted, therefore, that alcohol is intimately related to road deaths. It is all the more important to attach significance to the type and age of the person involved, the drinking pattern and the underlying personality factors. The paradox in this country, as in many countries, is that legislation is directed towards the effect rather than the cause, in an attempt to curb the high death rate, a result of driving under the influence, and in so doing adopts the same policy of punishing the offender without studying the underlying reasons. This applies equally to individuals who consume minor or major tranquillisers at the instigation of medical practitioners, or habit-forming drugs at their own instigation, or alcohol as a means of handling difficulties which are intrapsychic. While the current attitude of treating symptoms instead of the cause prevails, in direct contradiction to the accepted principles of medical practice in this country, the high incidence of driving under the influence of alcohol or drugs must continue.

It is not suggested that all forms of punishment should be abolished, but whatever the measure prescribed, it must be realistic and deserves very close study and review, as does the need for some form of deterrent and psychiatric investigation of the pedestrian who is under the influence of alcohol and who suffers injury. Currently, blood tests are immediately performed upon suspect drivers, but little attention is paid to the pedestrians who constitute a large number of those killed on the roads. In the majority of cases of death or serious injury of pedestrians, the onus to prove innocence rests upon the driver, and there appears to be little legislation regarding the pedestrian who may be equally, or even more culpable than the driver. This, too, necessitates radical change.

Harsher penalties are unlikely to succeed, for the major problem is to educate those in authority, or those currently engaged in accident investigation, such as the Road Safety Council or National Institute for Road Research to understand the pathologies which exist in the psyche of the individuals involved, and the various factors which result in road accidents. It is essential to review the current erroneous concept that problems can be handled only at a punitive level, in the belief that these alone will be deterrent. Experience has proved otherwise; more attention should be paid to education, public awareness, positive identification, and the prevention of road accidents, particularly when this is related to driving under the influence of alcohol, or uncontrolled aggression, or both.

THE PRINCIPLES OF MENTAL HEALTH IN RELATIONSHIP TO ROAD ACCIDENTS

The principles of mental health can be regarded as preventive, promotive, therapeutic, and the encouragement of research. One of these principles is the early recognition of symptoms and the initiation of adequate treatment; another is primary prevention aimed at avoiding the onset of symptoms. Both these principles relate to road accidents, that is, to devising ways and means to determine: (*i*) the characteristics of individuals who have driven safely for many years, compared with those involved in repeated serious accidents; (*ii*) aspects in the daily life of the individual, likely to be factors predisposing to accidents; and (*iii*) methods whereby accidents can be prevented in predisposed individuals.

Investigation of the Characteristics of the Safe Driver

During World War II an efficient method for assessing the fitness for flying duties was established by Biesheuvel at the Aptitude Test Centre. He introduced a battery of tests for the psychological assessment of all applicants and his findings resulted in international recognition. It should, therefore, be possible to institute research into the assessment of the characteristics of those who are psychologically fit to drive a motor car. The application of the tests to all intending motorists could provide a reason for withholding licences, for a time, from those who were likely to have an accident.

Some Suggested Preventive Measures

1. It would be invidious to suggest that alcohol and drugs do not contribute significantly to the road death toll. It appears, however, that the current public trend is to regard alcoholism *per se* as an illness (and this may apply to drug dependency in the near future), and thus tacitly to accept that the dependency on drugs or alcohol is symptomatic of some underlying mental illness. In contradistinction, however, this does not apply in the courts where individuals found guilty of driving under the influence of alcohol are sentenced to a fine or imprisonment, or both, and no cognizance is taken of the possibility that the dependency is probably symptomatic of an underlying psychiatric illness. It is suggested, therefore, that convictions of this nature should also entail psychiatric assessment or treatment, or both, particularly as individuals are repeaters of this type of offence; in any event this is a responsibility to Society, which the State should encourage.

2. All practitioners should be acquainted with the relationship of mental illness to traffic accidents and when this is established steps should be taken to inform the patient, relatives and authorities that the individual is unfit to drive a motor car.

3. Emotionally disturbing events in the home, in employment, and on social occasions, have been shown to be contributory factors, particularly in the more emotionally unstable individual and especially those whose inhibitory control of their aggression is minimal. Well known is the slogan: 'Do not drink and drive', equally applicable is 'Anger annihilates', to convey that the public should be made increasingly aware, through education, of the many factors which predispose in particular aggression and aggressive driving.

4. More school and family education of children in road manners is required, for relatively little attention is paid to the conditioning of children who may observe the aggressive behaviour of their parents on the road and regard this as normal behaviour.

5. More pedestrian education is essential and, in relation to prevention, of considerable importance is the relatively little attention paid to the lack of awareness, or disregard of the possibility of death on the road, by pedestrians who break down fences for easy accessibility to property on the opposite side of the road, or who cross freeways with little concern. In this respect the authorities should consider the need for more pedestrian crossings, especially over the more recently developed highways through built-up areas, and the control of pedestrians, in the same manner as is done for vehicular traffic, with the excellent signs which exist on most South African roads today. A fact particularly pertinent to circumstances in South Africa is that the majority of pedestrians fall into Black, Indian and Coloured ethnic groups. Particularly when they are darkly clothed, they are extremely difficult to see at night, and athough they are aware of oncoming traffic, they themselves appear unaware of the fact that they cannot be easily seen. This fact has been recognised by local authorities who provide their employees on the road with distinctive fluorescent apparel. The same system should be enforced by education and the provision of some form of fluorescent apparel for members of these ethnic groups who are pedestrians at night.

6. Education for all concerned, especially as detailed earlier by Pittman,[18] is essential, but this must include all ages, groups, and professions, particularly those in authority who should be made aware of the *total* complexity of the problem. It is not unreasonable to suggest that blood alcohol estimations of pedestrians involved in road accidents should be made as a routine.

Therapeutic Methods

In view of the comments of Brown[2] and the many research findings, it must appear obvious that the people in the 5 categories he mentions (particularly when this is a repeated behaviour pattern), are manifesting some evidence of mental illness, be it a psychosis, neurosis, or a personality disturbance, and are in need of psychiatric or psychological assessment or treatment, or both, as well as restraint. The factors need careful evaluation.

Human Factors Possibly Related to Traffic Accidents

Various factors could conceivably relate to traffic accidents and steps should be taken to determine whether these are important contributory factors and whether appropriate measures can be taken to reduce the number of drivers falling into any one of the categories to a minimum.

Alcoholics and drug dependents. The basic personality in such cases is frequently that of an emotionally unstable individual whose judgement, even when it is not under the influence of alcohol or drugs, is impaired, but is grossly abnormal while the individual is under the influence of drugs or alcohol.

A psychopathic person who is impulsive, aggressive, and lacking in conscience, uses the motor car either as a weapon, or exhibitionistically, in an emotionally immature fashion. He or she is devoid of a sense of responsibility, and frequently does not profit from experience, from kindness, or discipline.

Hypomanic individuals are impulsive, unstable and aggressive, lacking in judgement, without thought and care for others and unable to tolerate frustrations such as the slow driver on a relatively narrow road with a centre white line.

Psychotics and near-psychotics lack judgement and insight, and frequently are out of touch with reality and drive in an irresponsible fashion.

Individuals on **high doses of tranquillisers and hypotensive** drugs may be euphoric, exhibiting a 'don't care' attitude, or sleepy, or liable to sudden attacks of low blood pressure, with consequent cerebral anoxia and loss of critical faculties, or clouding or loss of consciousness.

It has been established, although some authorities still disagree, that certain individuals are **accident-prone.** They have a history of previous accidents at home or at work and they may exhibit this proneness on the road, and an examination of the personality may reveal impulsiveness and lack of control.

Sufferers from **coronary artery diseases,** who are likely to have an attack at any time, especially under duress and fatigue and without previous warning, or sufferers from severe hypertension, who have a great deal of internalised hostility and aggression.

The **severely deaf** who do not hear hooters or overtaking cars, noises of trains, etc., and because of their disability may be paranoidal and aggressive.

The **aged** who are rigid in outlook, who lack judgement and insight, whose reaction time is extremely slow and who drive frequently in the centre of the road, totally unaware of other traffic passing in both directions.

Uncontrolled epileptic sufferers from either petit mal or grand mal, may have an attack at any time. Although many such people do not drive a vehicle because they are aware of the consequences of their malady, there are others who drive in spite of their illness. This malpractice demands a strong deterrent. On the other hand, current research shows that epilepsy, *per se*, is a minor factor as a cause of road accidents, yet present legislation appears too restrictive, especially where responsible controlled epileptics are concerned, and it should be amended to allow persons to drive if their attacks have been controlled for 2 years.

Persons falling into one of these above categories are likely to be involved in more than one accident with serious consequences, but these factors cannot be adequately determined except by careful medical and psychological examination. Thus, after a second or serious accident, or a second serious breach of traffic regulations, it would appear logical to recommend, in everybody's interest, that those reasonably regarded as culpable in two or more serious traffic accidents or offences should be legally instructed to undergo an examination by a panel which

should include a psychiatrist or a clinical psychologist, or both. It is thought that in many cases the person involved may be sufficiently astute to withhold evidence of his psychopathology from a general practitioner or specialist, or from the district surgeon. There is, of course, the possibility of unpleasant circumstances being discovered by an examination of this sort, but in view of the seriousness of the situation the information is as important as a suspicion of carcinoma or cardiac pathology.

Subsequent to the medical examination a full report should be submitted by the medical examiners to the magistrate, advising: (*a*) whether the condition is permanent or temporary; (*b*) the type of therapy most appropriate; (*c*) the licence to be cancelled; or (*d*) the licence to be suspended temporarily, and subsequent to treatment, recovery or improvement, to be granted at a later date.

Promotive Aspects

The current attitude is to criticise or condemn; in any court of law an individual found guilty of an offence has his previous criminal record examined with little attention to any previous 'good conduct' record. Furthermore, little attention is paid to his general attitude of responsibilty. Other than the avoidance of financial costs and suffering and personal responsibility, there is no reward for good driving. It would not be out of place to institute a system of reward after 10, 15, or 20 years of responsible driving, for if everyone were to drive responsibly there would be little need for prohibitive traffic laws and punitive measures. It would also not be out of place for insurance firms to introduce differential insurance schemes, particularly in relation to alcohol as has been suggested in Sweden by ANSVAR.

Research

In this article much has been said about the prevention and recognition of the causes of road accidents. Every aspect is, however, open to research. It is not intended to repeat these recommendations, but to request interested parties to study each aspect in turn, in particular the manner in which the human factors can be brought to the attention of the authorities.

1. Clear-cut statistical evaluation of the total costs of the past 20 years would mean an initial small financial outlay, but the impact of these findings would undoubtedly influence public apathy, particularly if they were widely publicised.

2. With regard to adequate methods of education, a reduction of public apathy, and methods to be used by the mass media, particularly with respect to public awareness, understanding and personal identification, it would not be out of place here to call upon the assistance of psychologists and acknowledged advertising agencies.

3. Research into the personality factors or psychiatric illness encountered in accident-repeaters and those involved in serious traffic accidents, and the relationship between this and antisocial behaviour, should be undertaken.

4. Psychiatric disturbances in individuals convicted of driving under the influence of alcohol or drugs, should be assessed.

5. The deterrent effects of the present methods of punishment should be evaluated.

6. Further statistical research in relation to the different ethnic groups of drivers, and of pedestrians, and the date and areas in which the driver's licence was obtained by those involved in serious accidents and serious traffic offences, would provide information conceivably of value to all concerned.

CONCLUSION

With apologies to Lewis Carroll: 'The time has come the walrus said to *think* of many things . . .' It is obvious that the emphasis is upon the need to apply an intellectual approach to the fundamental causes and prevention of motor car accidents, and the importance of the human factor. It is recognised that adequate accident prevention in all its aspects will result in a number of individuals not being allowed to drive, and so a reduction in the number of motor cars and heavy vehicles on the road, and possibly some threat to the motor industry, but the total cost of the carnage is of greater significance. Unfortunately, the author does not have available the cost to the country in terms of deaths, major physical disablements, absenteeism, motor cars destroyed, and that one factor without financial valuation, human suffering. An audited statement of the former against the latter, would provide interesting statistics. South Africa as a whole is probably in the red, and will be still further in the red unless fundamental changes and research are implemented.

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REFERENCES

1. Mundy, R. (1961): S. Afr. Med. J., **35**, 458.
2. Brown, D. D. ((1971): *Car*, June, p. 4.
3. Whitlock, F. A. *in* Walker, N. ed. (1971): *Death on the Road*. London: Tavistock.
4. Carstairs, G. M. (1965): *Transcultural Psychiatry*, p. 192. London: J. & A. Churchill.
5. McFarland, R. A. (1946): *Human Factors in Aircraft Design*, p. 570. New York: McCraw-Hill.
6. *Tonus*, July, 1972, p. 5.
7. Norman, L. G. (1962): *Road Traffic Accidents* (Public Health Paper No. 12), Geneva: WHO.
8. McQuade, W. (1972): *Fortune*, January, p. 102.
9. Lorenz, K. *in* Carthy, J. and Ebling, F., eds (1964): *The Natural History of Aggression*. London: Academic Press.
10. Selzer, M. L., Rogers, J. E. and Kern, S. (1968): Amer. J. Psychiat., **124**, 1028.
11. Shaw, L. (1966): International Road Safety and Traffic Research, **14**, 30.
12. Road Research Laboratory (1963): *Research on Road Safety*, p. 133. London: HMSO.
13. Smeed, R. J. (1971): In *Op cit.*[3] (foreword).
14. Gunn, J. (1972): Brit. J. Psychiat., **120**, 463.
15. Wyckert, J. (1972): Psychiat. News, **7**, 1.
16. Wold, C. I. (1972): *Ibid.*, **7**, 28.
17. Lovibond, S. H. and Bond, K. *in* Kiloh, L. and Bell, D. eds (1971): *Proceedings of the 29th International Congress on Alcoholism and Drug Dependence*, p. 275.
18. Pittman, D. J. (1971): *Ibid.*, p. 270.
19. Roth, M. (1972): Brit. J. Psychiat., **120**, 362.
20. Nelker, G. (1971): In *Op cit.*,[17] p. 275.
21. Berrill, J. H. W. (1971): In *Op. cit.*,[17] p. 287.
22. Keating, M. (1971): In *Op. cit.*,[17] p. 293.
23. Henderson, M. (1971): In *Op cit.*,[17] p. 306.
24. Milner, G. (1971): In *Op. cit.*,[17] p. 295.