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A Study of the Automobile Driver and Traffic
Accidents in Relation to Biographic,
Attitudinal and Personality Factors.

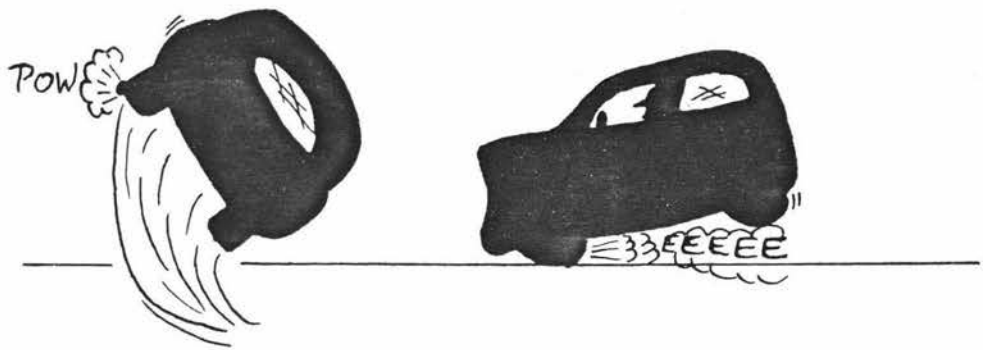
by

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'Whatever can happen to one man can happen
to every man.' (Cuius potest accidere
quod cuiquam potest)

Seneca

'Some of the best lessons we learn, we learn
from our mistakes and failures. The error
of the past is the wisdom and success of
the future.'

Tyron Edwards

'It is one thing to show a man that he is
in error and another to put him in
possession of truth.'

John Locke

'If accidents happen and you are to blame
Take steps to avoid repetition of same.'

Dorothy L. Sayers

PREFACE

'When you rise from your book, probe into what you have learned, to discover whether there is in it anything you can translate into reality.'

Nahmanides

'These, gentlemen, are the opinions on which I base my facts.' The origin of this statement is uncertain but, without doubt, it should be repeated again and again in respect of any work which professes to be objective (Smith, 1968).

Facts speak through an interpreter and are subject to his wishes. The facts of this research have been presented and interpretations made which are, of course, subject to further differing interpretations depending on the light and particular angle from which the facts have been viewed. Thus, any interpretations made of the facts are debatable and open to dispute.

In this study an attempt has been made to blend science and art with a flourish of ingenious subtlety to create a unified and compatible entity in an effort to render this work in a form palatable and digestible not only for the esoteric already initiated into this area of traffic accident research but also that it may whet the appetite and have interest for those desiring to commence such an acquaintance.

The general aim has been to captivate the reader's interest and enthusiasm not by detracting from the facts but rather by enhancing them with the infusion of lighter touches into the weighty, life and death issue of road traffic accidents being dealt with.

ACKNOWLEDGEMENTS

Creating and producing a study such as the present one is rather like being at the hub of a wheel from which numerous spokes radiate. Both spokes and hub are necessary for there to be a wheel.

This investigation is the result and sum of many parts and I feel like the hub of the wheel who could not have achieved this work without the helpful support of the many spokes or radiations out from the hub.

I am deeply indebted to a vast network of people who in their own different and special way helped me in what was often a far from smooth or easy passage when the easy way would have been to give in. Without the help, support and encouragement of this network of people the present work would have fallen by the wayside long ago before it finally emerged and became a reality rather than a dream.

To name but a few of those involved in particular from which my many sources of help emanated and was most gratefully received -

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My illustrator, Audrey Turner, for the apt illustrations capturing and portraying in a nutshell what has been stated in a sheaf of paper

The many varied sources from which I gained continual stimulation and impetus regarding the material and information for this study

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My family for their support even though absent overseas

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To each one of this whole host of people and many more not mentioned but nevertheless remembered, I am most grateful and extend most sincere thanks that I was able to keep physically, mentally and spiritually intact at the same time as being able to strive on charged with the ebb and flow of a dynamic motivating force towards the prized completion of this work, no mean feat for something that very frequently became an overwhelming challenge that was not met and overcome.

But, once having put my hand to the plough I could not look or turn back until the task was completed in spite of the cost of endurance, when I could at last take a restful pause to gaze at the furrow I had ploughed, albeit battle worn and scarred by the encountered effort but, without doubt, immensely enriched and hopefully wiser for the experience of having travelled that way, and then with joy thankfully sigh 'It is done.'

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ABSTRACT

The art of driving is a skilled activity undertaken by very many individuals during their everyday lives and is, perhaps, one of the most complex.

In this investigation a sample of 206 licenced university automobile drivers was studied. Following a widespread publicity campaign on the university campus the automobile drivers coming forward participated on what might be termed a 'random volunteer' basis by completing 3 questionnaires covering biographical, attitudinal and personality factors. Both university staff and students were eligible to take part as long as they fulfilled the two basic criteria for entry into this study, namely:-

- 1) Being a licenced automobile driver
- 2) Being a member of the selected university either as staff or student

On analysis of data 4 driver groups were formed on the basis of sex and accident category as follows:-

MA - Male Accident Driver Group	n = 67
MAF - Male Accident Free Driver Group	n = 58
FAF - Female Accident Free Driver Group	n = 59
FA - Female Accident Driver Group	n = 22
<hr/>	
Total	N = 206

These 4 driver groups above were further combined to form 4 driver group combinations using the same two criteria of classification according to sex and accident category as follows:-

M(A+AF) - Male (Accident + Accident Free) Driver Group	n = 125
F(A+AF) - Female (Accident + Accident Free) Driver Group	n = 81
<hr/>	
Total	N = 206
<hr/>	
A(M+F) - Accident (Male + Female) Driver Group	n = 89
AF(M+F) - Accident Free (Male + Female) Driver Group	n = 117
<hr/>	
Total	N = 206

This formed a complex situation of 8 driver groups for the purposes of study and comparison. By adopting this method it was possible to study, for example, male versus female driver characteristics or MA (male accident) versus FA (female accident) driver characteristics.

Three areas of biographical, attitudinal and personality factors were covered in this study and the measuring instruments (3 questionnaires) used provided a 3 dimensional view of each driver group on a two tier basis at the general or free-floating and specific or situational level for certain variables such as aggression and anxiety.

Thus, the measuring instruments used, namely the Biographic Questionnaire including a Semantic Differential Scale, the NSQ (Neuroticism Scale Questionnaire) and Parry's AG (Aggression) / AN (Anxiety) Scale formed a complementary, composite unit with confirmation of consistency being found across measures for certain variables. For example, significant correlations were found between the NSQ E (Submission-Dominance) and Parry's AG Scale variables and also between the NSQ An (Anxious-Not Anxious) and Parry's AN Scale variables.

It emerged that there were two rather than one typical accident driver personality types, namely the MA and FA driver, as well as differences being noted between the typical MAF and FAF driver. Differences were also found between M(A+AF) and F(A+AF) driver groups as well as similar personality trends noted to occur between the male/accident and female/accident free driver groups.

In effect, this means that there are 3 (possibly 4) rather than just two, the A and AF, driver personality types to consider as was previously conceived at the outset of this research.

The typical male driver, especially the MA driver, was found to be aggressive, tough, relatively cheerful and free from anxiety, self-assured and self-confident to the point of over-confidence particularly as regards driving ability, competitive, belligerent and even pugnacious.

On the other hand, the typical female driver, especially the FA, was found to be submissive, sensitive, tender-minded, lacking in self-assurance and self-confidence particularly in respect of driving ability, fairly high in anxiety and non-aggressive.

In this investigation of the automobile driver and traffic accidents in relation to biographical, attitudinal and personality factors, the focus was mainly upon the two personality variables of aggression and anxiety although not to the exclusion of other personality variables such as sensitivity and depression.

It is significant that two distinct accident related personalities emerged one for each sex, that is MA and FA.

INTRODUCTION

Traffic accidents constitute 'a pandemic of destruction' in contemporary society. Their contributing enormous toll represents both a national and international plague. They rate as the third leading cause of death in all age groups preceded only by cancer and heart disease (Clark and McMahon, 1967), and the first leading cause of death among adults within their third and fifth decades (Roberts, 1971).

It has been estimated that only about 10 per cent of traffic accidents are caused by mechanical and technical faults, whereas something like 90 per cent are due to human factors. Thus, the human factor is vitally important in road accidents and it seems reasonable that psychology would be able to help in this area (McFarland, 1952; Eysenck, 1960; Delner, 1969).

Accidents in general and motor accidents in particular constitute a major health problem in most Western countries. According to statistics from the World Health Organisation (WHO) motor vehicle accidents accounted for 169,000 fatalities in 48 countries in 1966 (Nagel et al., 1973). The number of persons injured in motor vehicle accidents in 25 countries where this information was recorded was 2,669,266 (Severy et al., 1968).

In a recent analysis of accidental deaths in 19 industrial countries representing 553 million people, 36 per cent were caused by motor vehicles (McFarland, 1969). The second category of accident death, that of falls, accounted for 22.1 per cent (Roberts, 1971).

Table of Mortality From Motor Vehicle Accidents
In Selected Countries 1966-1967

Country	Motor Vehicles per 1,000 Population	Average Annual Death Rate	
		Per 100,000 Population	Per 100,000 Registered Motor Vehicles
United States	495	26.9	54.4
France	369	25.1	67.9
New Zealand	369	20.7	56.1
Denmark	359	22.0	61.2
Canada	356	27.1	76.0
Australia	351	27.6	78.7
Netherlands	306	21.9	71.5
Finland	244	22.6	92.5
Great Britain *	237	14.0	59.1
Norway	230	12.3	53.4
West Germany +	226	28.4	126.0
Italy	215	17.2	80.2
Japan	184	15.6	85.4

Note: Ranked according to motor vehicles per 1,000 population

*Includes England and Wales, Northern Ireland and Scotland

+Includes West Berlin

The sources of basic data for the above Table of Mortality From Motor Vehicle Accidents In Selected Countries 1966-1967 were compiled from the following:-

- a) World Road Statistics, 1967
- b) Demographic Yearbook, 1967
- c) Various publications of the National Centre for Health Statistics
- d) Annual reports of other countries
- e) Statistical Bulletin, April 1969

(Roberts, 1971, P. 36)

Appendix A gives statistics of those killed and injured between 1970 and 1974 for New Zealand, Australia, Great Britain and the United States. For New Zealand, statistics of those killed and injured for the years 1940, 1950 and 1960 are also given in Appendix A.

It is a matter of vital public health concern to understand the nature of 'accident proneness' and to detect 'the accident repeater' (Roberts, 1971). As early as 1926 Karl Marbe, a German psychologist, presented statistical proof that a person involved in one accident is more likely to have another when compared to individuals having no accident at all.

Bearing all these facts in mind that road accidents are a continuing problem of modern times, this piece of research was set up to investigate what was considered to be an important aspect of accident research, that of the relationship between personality factors and road accidents. Measures yielding biographic, attitudinal and personality data were used with the aim of compiling a profile for each of the driver groups taking part in this study, divided according to sex of driver and accident category.

The focus in this study has been on 'the man behind the wheel' or to use a far more vivid impromptu reference to that 'nut behind the wheel', connoting the threat of accidents from erratic driver behaviour, to see what further light may be shed upon personality factors in relation to the automobile driver and road accidents.