

# Some Consideration On 100 Fatal Traffic Accidents

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The object of holding an autopsy after each fatal traffic accident is primarily to establish a direct relationship of cause and effect between the accident and the fatal result. Incidentally, however, it achieves another object as well which may be regarded as being equally important because each autopsy will, as part of a pattern, yield information which may lead to the devising of ways and means of lessening the number of accidents, or at least of preventing their fatal termination.

## 1 *The relationship between the accidents and death*

In a traffic accident it is fair to conclude that the death of a person involved in such an accident is due to it. This, however, is not always so, and occasionally the reverse may actually be the case. A post-mortem examination then becomes imperative to arrive at a correct conclusion. In most cases the interpretation of the findings is easy; in others it may be less so; in a small number it may even be difficult.

I shall cite a few cases to illustrate this.

Case 1. P.N., aged 47, a chauffeur, was driving his bus through Rabat when, for no apparent reason, he crashed into a wall. He died six hours later without regaining consciousness. At the autopsy diffuse arteriosclerotic changes were found together with scarring of the kidneys due to pyelonephritis. No traumatic lesions were found, but there was a large pontine haemorrhage.

This case presented no difficulties: the man was a known hypertensive who had just returned to work after a period of rest, and an ante-mortem diagnosis of apoplexy had already been made. In the next case, however, such a possibility was not even suspected, and it was only at the autopsy that matters were cleared up.

Case 2. G.P., 57 years old, of Gozo, was returning home in an open truck after a day's work. He fell out of the truck and was picked up unconscious, and died after three days. Here again there was diffuse arteriosclerosis together with a typical cerebral haemorrhage. The only traumatic lesions were two small bruises, one on the right arm and one on the right side of the chest.

There is no doubt that, without a post-mortem examination, this man's death, which was due to apoplexy, would have been attributed to bad driving; and again it was the autopsy that, in the next case, established without any doubt that death was due to the injuries sustained, and was independent of the associated arteriosclerosis.

Case 3. G.G., 57 years old, of Rabat, was on his way to work when the truck he was in hit against a wall, and he was thrown out of the truck with several others. He was picked up in a state of shock and died on his way to hospital. Arteriosclerotic changes were present; there were no cra-

nial or cerebral lesions; his left humerus and several ribs on the left side were broken, and his abdomen was flooded with blood from a torn spleen.

Actually none of these cases presented any difficulty as the sequence of events could be followed with certainty, but an occasional case does crop up where the interpretation of the findings is far from easy. Case 4 is a good example of such an occurrence, because of the rarity of the lesion found and the combination of circumstances.

Case 4. R.F., 18 years old, was going on his bicycle through one of the streets of his village, when a truck appeared at the other end. As the street was none too wide, the truck slowed down, but the lad went on. When near the truck he was seen to wobble and then hit against the side of the truck. He was picked up unconscious and taken to hospital where he died three days later. At the autopsy the only traumatic lesion found was a small graze at the back of his right hand, but there was a large subarachnoid haemorrhage around the pons and the medulla, due to the spontaneous ruptures of a vessel and quite independent of the accident.

I admit that it seems to be asking too much to postulate the spontaneous rupture of a blood vessel at such a critical moment, but this does not mean that it cannot happen, and I contend that it did happen in this case. That I am correct in my interpretation of the findings becomes evident when they are confronted with the findings in the next two cases, both of which occurred

under comparable circumstances, and in one of which the cerebral damage was accompanied by cranial lesions as well.

Case 5. J.F., a young lad of 15, was going down to Marsaxlokk from Zejtun on his bicycle when he collided with an oncoming car. Death supervened after 11 hrs. of coma. At the post-mortem examination numerous cuts and bruises were found on his face arms and legs; there was a large bruise which extended from his left ear to the lower end of the sternum across his neck and chest; neither the thoracic nor the abdominal organs were injured. The skull was not fractured, but there was diffuse subdural and subarachnoid bleeding and numerous punctate haemorrhages in the brain substance itself, together with severe bruising of both frontal lobes.

Case 6. V.C., aged 18, of Sliema, was taking part in a cycle rally when, during a spurt of speed, he ran into a stationary truck. He was picked up unconscious and died within an hour. He had cuts and bruises of the face, arms and legs, and a fracture of the left femur. A fracture of the left temporal bone spread into the base of the skull; the brain showed diffuse subdural and subarachnoid bleeding, punctate intracerebral haemorrhages and severe contusion of the left temporal and contralateral frontal lobes.

It will be seen that the lesion in Case 4, consisting of a gross and local-

ized cerebral haemorrhages, is similar to the lesions found in Cases 1 and 2, which are due to vascular disease, but in marked contrast to the finer and more generalized cerebral damage found in Cases 5 and 6 and which are the result of a traumatic cerebral lesion.

But, apart from such cases of reversal of the ordinary accident death relationship, we also come across across cases where the autopsy shows that other intervening factors have contributed to bring about a fatal result, and in these cases we may find it difficult to asses to what extent the injuries have contributed towards the causation of death. Thus, death may occur in cases of relatively minor injuries because of old age or previous ill health, or because of the insurgence of complications, and in a few cases we feel bound to admit that, but for an element of human error, the case should have ended differently.

Case 7. F.C., aged 25, of Gozo, was going in his motorcycle when he collided with a car and was thrown into an adjoining field. He was picked up dead. Except for bruises and scratches no traumatic lesions were found. The heart was, however, enormously enlarged because of an adhesive pericarditis and a vegetative endocarditis.

There can be no doubt that, but for his heart condition, this man should not have succumbed to his trival injuries. This case is, however, both dramatic and exceptional, but the next is quite typical and is met with with relative frequency.

Case 8. S.A., 78 years old, was knocked down in Birkirkara and sustained a fracture of both legs. He died a fortnight later. The autopsy showed a

small fibrotic prostate with retention of a foul purulent urine; small, pale shrunk kidneys; a hypertrophic heart with advanced sclerosis of both Aorta and Coronaries. Death was due to a terminal pneumonia. No other traumatic lesions except the fractures of the legs were found.

Complications accounted for three deaths: they were gas gangrene (compound fracture of femur), pulmonary embolism (fracture of femur) and fat embolism (fracture of tibia). In eight cases the 'element of human error' appears to have contributed towards such an ending: in three of these the injury had not been diagnosed, in the other five either too much was done, or what was done, was done too soon.

Case 9. S.F., aged 7, was knocked down by a car. He was taken to Hospital deeply unconscious and with stertorous breathing. The left humerus had been fractured. He died after twelve hours without having regained consciousness. At the autopsy there was the diffuse subdural and subarachnoid bleeding common in severe contusions of the brain, but there was also a torn spleen with consequent intra-abdominal haemorrhage.

Even admitting that the prognosis in this case was unfavourable because of the brain lesion, I feel that death should be attributed to the rupture of the spleen which had not been diagnosed.

Caes 10. G.B., 11 years old, was knocked down by a car at about 4p.m. He got up immediately and ran away, but two hours later he became unconscious

and died at 8 p.m. Death was found to be due to an extra-dural haematoma from a torn Middle Meningeal Artery.

Case 11. A.S., aged 12, was pillion riding on the carrier of a pushbike when he fell off it and knocked his head against the ground. He was momentarily stunned, but then got up and went home, where he had his usual lunch. Two hours later he started complaining of a headache and soon became unconscious. He died at 8 p.m. A fissured fracture of the parietal bone had torn his Middle Meningeal Artery, producing an extra-dural haematoma.

In both these cases an early diagnosis would have rendered possible a life saving operation.

Case 12 D.N., aged 12, was admitted to hospital suffering from a fractured pelvis after having been hit by a car. She died after three days. At the autopsy the ramus of the os pubis was found fractured, but there was no displacement, and the extravasation of blood in the pelvic floor was minimal and limited to the immediate neighbourhood of the fracture. The pleural and the peritoneal cavities were filled with a clear transparent liquid. Death was due to a terminal pneumonia in a waterlogged lung.

I attribute this death to an electrolyte imbalance brought about by the child having had too much 'drip'. I admit that my contention is debatable, but I still cannot help thinking

that a little less drip would have materially altered the course of events.

Case 13. J.T., aged 18, was involved in a head on collision with another car. Besides the usual cuts and bruises on the face and hands, the main lesion was a fracture of the right femur and of the pelvis with extensive extravasation of blood in the pelvic floor and in the retroperitoneal tissues.

Case 14. J.P., aged 18, was the driver of the other car in the above collision. The lesions found in the previous case except that they were on the left.

Both had been rushed immediately to hospital in a light car, and both died within a very short time after their admission. Naturally, I am not prepared to say that these two lads could have survived their undoubtedly severe lesions, but I feel that, had they had restorative measures before being transported in their shocked condition, they would have stood a better chance of recovery; so much so that a third companion, a passenger in one of the cars, did recover, in spite of severer injuries, simply because it took some time to extricate him from the debris of his car.

I have so far described some illustrative cases to show the necessity of holding a post-mortem examination in such cases in order to be able to establish a direct relationship between the accident and death. I now propose to consider the accident in relation to its three possible victims: the pedestrian, the driver of the vehicle and its passengers, and proceed to draw some conclusion which may point to how to prevent these accidents.

I may add that I am using the word 'vehicle' intentionally, so as to include not only all types of motor-driven vehi-

cles, but also pushbikes, and that rarity of modern times, the carrozzin as well.

I shall start with the pedestrian.

### 2. *The role of the pedestrian*

Table I shows the distribution of accidents among the various age groups. It will be seen that in the pedestrian the accident rate is greater at the two ends of the scale, whilst the occupants of the vehicle, whether driver or passenger, are more often affected in the middle groups.

TABLE I

	11	21	31	41	51	61	71	
	10	20	30	40	50	60	70	80
Pedestrian	22	6	3	3	2	3	5	5
Drivers	—	10	12	7	3	—	—	—
Passengers	1	6	7	1	1	1	1	1
	23	22	22	11	6	4	6	6

This, I think, would suggest that there is a definite correlation between age and the accident rate, and that the irresponsibility of children and the foolhardiness of old people concur as much as the imprudence of drivers in the causation of an accident. A more detailed examination bears this out.

Out of 49 pedestrians killed no less than 28 were under twenty years of age, and of these 22 were less than ten years old, 4 were less than twelve years, and the other two only fifteen years old. Undoubtedly, in many cases, with greater prudence, the driver might have avoided the accident, but on the other hand the child quite as often seems to have done its best to get run over. If we exclude those cases where it is obviously the driver's fault, such as that of a baby of ten months crushed against the wall in his pram by a car out of control; and that of a girl squeezed against the wall by a runaway truck which had been left untended, there remains many an instance where the driver does not appear to be as blameworthy as first im-

pression would suggest. My notes, in fact, show that in six cases the child had come running out of the house, or from behind a stationary object, right into the path of the car. And five other children, whose ages ranged from eighteen months to ten years, had run behind the bus or truck after it had started backing. One cannot help thinking that some of these tragedies could have been avoided by a greater degree of vigilance on the part of the guardians of the children, or if there were fewer children running about in the streets playing.

In the last two decades 10 pedestrians lost their life; in six the extent of the injuries was sufficient evidence of the severity of the impact, and therefore presumably, also of the speed of the vehicle, but in four the injuries were minimal. This would tend to show that we are apt to take too simplistic a view of these accidents in attributing them all to negligence or overspeeding on the part of the driver, and that we should look for other factors as well to account for some of them. That this is so is borne out by some of the cases occurring in the middle age-groups, where the negligence appears to be on the part of the pedestrian rather than on the part of the driver. I shall mention only one instance, that of a man of twenty-six, who, in one of the busiest crossroads of Qormi, got out of his car and crossed the street without even bothering to look about him, only to be knocked down by an oncoming car. We all know — and some of us from personal experience, as we have been guilty of such an imprudence ourselves — that this is a very common occurrence indeed.

Putting all the onus of these accidents on the driver will not help to solve the problem of the increasing accident rate simply because it will not take into account the fact that the pedestrian may be at fault as well. Greater vigilance of

the children is indicated and they should not be allowed to play in the streets; in this respect the provision of playing grounds for the children is a move in the right direction. The man in the street, especially the older one, should think of traffic as it now is, and not as it was once both more leisurely and less congested. More authorized crossings should be provided, especially in areas of heavy traffic; pedestrians should be taught to use them, and drivers to respect them and both penalized for breaking this rule. An Italian gentleman's comment is going down Kingsway some time ago comes to my mind: he said that cars can use Kingsway only through the goodwill of the pedestrians.

Need one say more?

### 3. *The vehicle and its users*

Fiftyone cases will be reviewed under this heading, and they can be split into two categories: 36 cases in which speed appears to be the dominant factor in the causation of the accident, and 15 in which it may either be excluded, or at most assigned a secondary role.

These last 15 cases are made up as follows:—

- 3 cases in which the victim was thrown was the cause of death (Case 2), or of the accident (Case 1 and a probable case of petit mal);
- 3 cases in which the victim was thrown out of the vehicle; a boy of six and a man of fifty-seven fell out of the car through the accidental opening of the door of the car, and a man of twenty-six, a sailor, through the overturning of the carrozzin he was riding in;
- 2 (a boy of twelve and a man of twenty-four) were run over when they got off the bus they were in before it had come to a stop;
- 1 labourer was run over by a bulldozer;
- 1 another labourer, was crushed against the wall by a tractor;
- 1 a boy of twelve, fell off the carrier of a pushbike (Case 11);

The remaining fourteen were unusual enough to deserve a more detailed description.

Case 15. G.C., aged 50, was on his motorcycle behind a truck in a narrow lane off Zurrieq. The truck slowed down to enter a side alley. For some unknown reason the man, who had just taken his driving licence, appears to have accelerated instead of slowing down, and collided with the truck, hitting his chest against a projecting rod, which pierced him through the heart.

Case 16. G.G., aged 40, was riding his motorcycle in Tarxien when he hit the handlebar of his cycle against the side of an oncoming truck. He fell down and died within a few minutes. At the autopsy there was a large bruise of the right side of the abdomen; underneath the Rectus Abdominis was split, and, though neither the peritoneum nor the bowels were found injured, the the abdominal cavity was found flooded with blood from a large tear of the Common Iliac Artery. The man had evidently been thrown against the handlebar by the impact, even though it was ascertained that neither vehicle had been going at anything beyond ordinary speed.

Case 17. F.V., aged 24, was going down Duke of York Avenue on a rainy day. He skidded, fell off his Lambretta, and hit his head against the corner of the Nato building. He died practically on the spot. Complete disruption of the base of the skull, starting from a fissure in the frontal bone, was found

at the post-mortem examination. And yet, the man had been going at a snail's pace.

Case 18. A.B., aged 37, died under very similar circumstances. He was going along a narrow lane on his Lambretta when the tip of his handlebar hit against the tip of the handlebar of a motorcycle coming from the opposite direction. Both drivers fell; the cyclist got up unhurt, but A.B. was picked up unconscious and died within a few minutes. A small circular bruise right in the middle of his forehead was the starting point of a fracture in the frontal bone which spread into the base of the skull, disrupting it. In falling, he had hit his forehead against the knob of his headlamp.

The other thirtysix cases were clear cut cases of overspeeding. Of these, twentyseven were what may be described as 'ordinary' overspeeding, but the other nine cases were instances of people returning from a party, or at least enjoying a joy ride, and therefore, presumably under the influence of alcohol.

Going at speed is an exhilarating sensation which is an end in itself. It makes us forget the risks we are running. An open stretch of the road is an incitement to which many a middle-aged man succumbs, and which a young man will not even attempt to resist. It is dangerous always and everywhere, even on the best of roads . . . imagine how much more dangerous it can be on our roads where every few hundred feet one comes to a bend or a crossroad! If we spy another car ahead of us, we feel the urge to overtake it; if we are overtaken by one we consider it a challenge to our mettle, and we press on the gas,

disregarding the rising speedometer, and end in disaster.

This, I think, is one of the major reasons why so many accidents happen today. Whose fault it is? Partly the fault of our times. There have always been traffic accidents, and man has always enjoyed speed, but it is only today that he has been provided so copiously with such admirable means to enjoy. We can understand why a driver should want to press on his throttle with more enthusiasm than sense, we can even sympathize with him, but we cannot condone the practice. In the interest of Society we have to repress it, harshly if need be. But to do so effectively, I think that greater stress should be laid on the dangerous quality of the driving, and less on the mere fact that the speed limit has been exceeded. Undoubtedly, beyond a certain limit, excessive speed and dangerous driving become synonymous, but technically excessive speed need not always be dangerous, whilst, under unfavourable circumstances, even technically not excessive speed may become so.

No such extenuating considerations can, however, be made in favour of the man who drives whilst he is under the influence of drink. Alcohol affects both our prudence and our capacity to react properly in an emergency. In such cases I consider that the imposition of fines to be totally inadequate as a deterrent, whilst a short period of rest and meditation as one of Her Majesty's guests, together with the withdrawal of the driving licence, temporarily or permanently as the case may require, would be both corrective and preventative, and a just reward for what morally amounts to murder. But, in order to be able to apply such sanctions, there must be absolute, irrefutable proof of such a condition: not the mere opinion of an individual, however eminent he may be, but incontrovertible evidence of an im-

personal laboratory result. This is the more important because it is not the man who is obviously "under the influence" that is the more dangerous, but he who, after taking a drink or two, feels and appears to be quite steady, but at the same time thinks that all he needs to be transformed into an imitation Stirling Moss is just that extra drink he took. And this type cannot be brought to book unless all drivers involved in an accident, fatal or otherwise, have their blood alcohol estimated if even the slightest suspicion of such a possibility exists.

#### 4. Injuries

Whilst a detailed description of the injuries sustained in these accidents is beyond the scope of this article, a few general remarks about their distribution in the body may be of interest because of the conclusions that may be drawn from them.

Reference to Table II showing the distribution of the injuries in the body will show that head injuries are by far the most common lesion, car users and pedestrians sharing them with equal frequency, with this difference however, that whilst in the pedestrian these lesions are to be found mostly on the side of the head or in the occipital region, whence they spread into the base of the skull, in the vehicle users they are most commonly met with in the vault or in the frontal region. This is due to the different mechanism producing these fractures, for, whilst the pedestrian, before being thrown to the ground by the impact, is generally bent backwards or sideways immediately he is hit, thus knocking his head against the superstructure of the colliding vehicle, the users are more often catapulted forward against the ceiling in the case of a closed vehicle, or against any other object in the case of cyclists or motorcyclists.

TABLE II

	Cranio-cerebral	Thoracic	Abdominal	Skeletal
Pedestrians	32	12	6	11
Drivers	22	10	4	4
Passengers	12	4	4	—
	66	26	14	15

In fortyone cases the head injury was not associated with other lesions, except the usual cuts and bruises to be expected in such accidents, but in twentyseven they were accompanied by serious lesions elsewhere (15 pedestrians and 12 'users'). In only two cases (Case 10 and 11) was the head injury amenable to treatment; all the others were of such severity that they were beyond all help.

Thoracic injuries were mainly of the stove-in variety, with multiple fractures of the ribs. In practically all cases the lung was either torn or at least very badly bruised; in four cases the heart had been pierced by spicules of bone from the broken ribs; in three cases there was also a fracture of the dorsal spine; in one case the Inferior Vena Cava was torn, and in another the Pulmonary Artery; in thirteen there was an associated rupture of the liver or of the spleen.

Only two cases of purely abdominal lesion appear in this series: the man died of a torn Iliac Artery (Case 16) and a young sailor of twentytwo whose abdomen was crushed against the driving wheel of his car, and who died of mesenteric thrombosis seventeen days after the accident. The other cases listed as abdominal are really thoraco-abdominal injuries with rupture of the liver or of the spleen with no fracture of the ribs.

Fractures not associated with visceral lesions occurred 15 times, and, as is to be expected, they predominate amongst the pedestrians (11 cases). The pelvis was injured six times, the femur eight times, and the tibia twice; there was



also a fracture dislocation of the cervical spine which occurred in a driver whose car crashed into a wall. In five cases death was due to the severe shock resulting from the injuries sustained whilst in the remaining ten it is to be attributed to complications setting in.

By and large, therefore, one may say that most of the injuries were of such a severity that death was unavoidable. This means that the prevention of these fatalities lies mainly in the prevention of the accident itself. Our primary aim should therefore be the reduction of the accident rate; but, as it is not likely that the present day congestion, with its greater attendant risks, will get any easier, such a reduction cannot be attained by purely repressive measures, whilst an educational campaign to make the public realize that its cooperation is indispensable — the drivers by becoming more conscious of their responsibilities, the pedestrians by taking greater care of themselves — will give better and more lasting results. And, if at the same time the conditions under which traffic flows be improved, so as to eliminate as many possible sources of danger as is practicable, the result will be more evident still.

This, however, should not make us loose sight of the fact that, whatever we may do, accidents will happen, some of which are bound to be serious. The prevention of a fatal result in such cases then becomes our main object, and we can achieve this in one of two ways, either by devising some sort of protection against such injuries, or by counteracting their ill effects once they have been inflicted. To attain the first, pro-

tective head-gear for motorcyclists, and strapping for cars users have been in use for some time, and their use should be encouraged as they will often afford reasonable protection against possibly fatal injuries; but as no such protection can be given to pedestrians, nor can these appliances guarantee full protection, it is often on the second alternative that we have to rely to save life. A trained first-aid team, fully equipped with all the necessary means of resuscitation is a prime necessity in this respect, and it should always be on call to attend to all serious accidents on the spot. That such cases are few and far between is no reason why such a measure should be considered superfluous, as even only one life saved more than justifies its institution.

#### CONCLUSION

In this survey of 100 fatal traffic accidents I have tried to show that, because many factors contribute towards the occurrence of these tragedies, the problem of their prevention must be tackled from various angles. The control of traffic, both pedestrian and wheeled, and more stringent judicial sanctions may lessen the number of accidents; the use of mechanical protective devices, together with prompt and adequate first-aid measures may diminish the number of fatalities; but it is only by educating the public to respect the code of the road than one can hope to bring down the number of accidents to that irreducible minimum which, I am afraid, no amount of human care and skill will ever be able to avoid.