



Studies in Ethics, Law, and Technology

Volume 2, Issue 1

2008

Article 1

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Recommended Citation

Evans, Leonard (2008) "Death in Traffic: Why Are the Ethical Issues Ignored?," *Studies in Ethics, Law, and Technology*: Vol. 2 : Iss. 1, Article 1.
Available at: <http://www.bepress.com/selt/vol2/iss1/art1>

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Death in Traffic: Why Are the Ethical Issues Ignored?

Leonard Evans

Abstract

More than a million people are killed on the world's roads annually. Injuries vastly outnumber deaths. The victims are overwhelmingly young and healthy prior to their crashes. This harm flows from many decisions made at many levels, from the individual road user to top government and industry leaders. While the decisions are steeped in a host of ethical questions, the ethical questions are almost universally ignored. This paper raises ethical issues relating to drivers, industry, and government. Increased professional and public focus on the ethical issues surrounding death and injury in traffic has the potential to generate enormous reductions in harm, far larger than those from ongoing safety programs.

KEYWORDS: traffic fatalities, traffic crashes, drunk driving, speeding, moral hazard

INTRODUCTION

Annually 1.2 million human beings are killed on the world's roads.¹ Most of the victims are young, and prior to their crashes were healthy with expected normal life spans in normal health. Most are not drivers -- worldwide most victims are pedestrians. Injuries vastly outnumber fatalities. Traffic harm flows from many decisions made at many levels, from individual road users to leaders of industry and government. The decisions are steeped in ethical issues, yet ethical issues are largely ignored. Indeed, the only relevant paper I could find in the professional literature begins "Philosophers should begin to think more seriously about the many moral issues that arise from our frequent use of personal motor vehicles."²

Discussing any aspect of traffic should be based on knowledge of its characteristics. One cannot discuss, say, the ethics of a medical procedure unless you have knowledge of what condition it addresses, what alternative options are available, what are its risks of success, what are its risks of making the patient more sick, and so on. The source of such knowledge is scientific inquiry, as reported in scientific literature. All too often traffic safety policy makers think that they are experts on traffic safety simply because they drive. They would be ridiculed if they claimed expertise in pulmonology because they breathe. Any discussion of ethical issues in traffic safety must rest upon what is known from science about the subject.

Traffic safety has been studied as a scientific subject for more than 70 years, with a large body of reliable information accumulated in many peer-reviewed technical journals. For example, a paper submitted to the *American Journal of Psychology* in August 1937 contains insights that are often ignored today, and references to even earlier work.³ The body of scientific information is summarized in a book⁴ that will be a key source for this article.

Traffic safety research establishes that vehicle characteristics affect safety, but not nearly as much as roadway factors. Roadway factors do not affect safety nearly as much as human factors, especially the behavior of drivers.⁴⁻⁷ It is the behavior of those whose lives are at stake in traffic that most influences risk in traffic. The least safe vehicle driven on the least safe road by some drivers poses far less risk than the safest vehicle driven on the safest road by other drivers.

While it is easy to say that drivers have a personal moral responsibility to not harm others, this ignores wider issues. Do drivers adequately understand that their normal driving poses an unreasonable threat to others? If not, why not? Have drivers been misinformed? If so, by whom, and for what purposes? While the individual driver is the final agent, other institutions contribute hugely to how individual drivers behave, and accordingly bear a major moral responsibility for traffic harm.

RESPONSIBILITY OF INDUSTRY

Should industries that affect safety have a moral obligation to improve safety? Or at least satisfy a lower standard to avoid doing more harm than is inherent in their product? While such questions arise for manufacturers of many products, such as ice cream, the big difference in traffic is that the majority of those harmed are not purchasers of the products offered. Arguably, the most important ethical issue for an industry is its obligation to insure that its products do not unreasonably harm those who do not buy them, or have no interest in them.

Automobile industry

The automobile industry advertises vehicles in ways that glorify and encourage behavior that increases risk to all road users, including other drivers uninterested in the advertised product. The purpose of advertising is to change behavior. As driver behavior is the factor that overwhelmingly affects the safety of all road users, should the ways that some vehicles are advertised not be discussed in moral terms?

Before a drug can be sold it must meet two standards. It must be of proven efficacy and proven safety. No corresponding standard (or any standard) applies to the marketing and sale of vehicle accessories. Manufacturers regularly advertise “safety equipment” without any evidence that it enhances safety, or that it will not increase harm.

Insurance industry

The insurance industry has a history of supporting additional “safety” equipment on vehicles. Their obvious economic interest is often overlooked. Adding more accessories to a vehicle increases its cost. The more expensive a vehicle is, the higher is the premium to cover loss due to theft, fire, or damage.

On a more basic level, auto-insurance sales are linked directly to crashes. If traffic crashes were to disappear entirely, so would the auto-insurance industry (after an exceptionally profitable final year). The motivation of the insurance industry in claiming that they want to reduce crashes should be evaluated with the realization that the more successful they are, the less money they will eventually make in a competitive market.

The term “moral hazard” refers to an increase in risk taking because insured individuals do not pay for the damage they cause. Someone may be more likely to hit a golf ball within striking distance of their expensive windows if they know the insurance company will pay to replace them. Auto insurance raises additional considerations because an individual driver purchasing more insurance than the law requires increases risk to all road users. Are you safer imbedded in traffic in which all drivers know they must pay out of their pockets the cost of any damage they cause, or the present situation in which insurance bears most of the costs?

Insurance reduces safety. At an individual level, is it ethical to purchase more auto insurance than required by law?

Alcohol industry

The alcohol industry has been outstandingly successful in creating widespread belief in two falsehoods. First, they have persuaded the public that essentially everybody drinks, when in fact about one in three adult Americans (for many different reasons) do not consume any alcohol. Second, they have persuaded the public that they want all their customers to drink responsibly. This is not credible, because if successful it would ruin them. About half of US alcohol sales are to underage and problem drinkers.^{4(p 266)}

Drunk drivers are predominantly young male beer drinkers. While hard liquor is rarely advertised on US television, billions of dollars are spent advertising beer on programs aimed specifically at young males, and with the confident knowledge that they also create and influence under-age drinkers.

Entertainment industry

Television is probably the industry having the largest influence on safety. While drunks no longer appear in programming as likeable and humorous, as was once common, the media still portray reckless driving and speeding as exciting and acceptable.

Television receives substantial advertising revenue from the auto and beer industries. It is therefore unlikely to broadcast that some experts conclude that beer advertisements and some auto advertisements contribute to the deaths of many people who do not even see the advertisements.

In-vehicle radar speed-detector industry

In-vehicle radar speed detectors have only one purpose – to enable drivers to violate speed limits and thereby increase the risk that they will harm other road users. In Canada such devices are illegal, while in the US they are legal and aggressively marketed. This is a manifestation of broader differences in safety policy approaches in the two countries, as discussed later.

RESPONSIBILITY OF GOVERNMENT

Government's ability to influence how drivers behave towers over that of other institutions. Government, unlike industry, has a core duty to prevent citizens from harming other citizens. Government failure to protect the public should therefore be judged by a higher standard than that applied to industry.

Because the US most strongly illustrates the concepts in this paper, most of the examples and content relate to US experience.

Until fairly recently it was generally assumed that government was not responsible for the weather. Yet there were justified charges of incompetent discharge of government responsibility when Hurricane Katrina killed about as many people in Louisiana as die on Louisiana's roads every year.⁸

While not responsible for hurricanes, government has major responsibility for just about everything relating to traffic, including designing and building roads, enacting and enforcing traffic law, taxing fuel and beverage alcohol, regulating vehicles, and licensing drivers. The number of people killed in traffic is vastly more influenced by government policies than by any collection of other factors.

The dramatic failure of US safety policy

US government traffic safety policy has been a disaster without parallel.^{4(p 381-8)} Prior to the mid 1960s the US had the safest traffic in the world, whether measured by deaths per registered vehicle or deaths for the same travel distance. By 2002, in terms of deaths per registered vehicle, the US had dropped from first to sixteenth place.

Figure 1 compares changes in annual traffic deaths in the US and in the three comparison countries Great Britain, Canada, and Australia, all normalized to a value 100 for 1979. Fatalities in the comparison countries declined by an average of 45%, compared to only 16% in the US.

This enormous difference is not due to greater growth in the number of vehicles or miles of travel in the US. Quite the reverse – average percent growth of vehicles and travel was greater in the comparison countries. Therefore, if changes in deaths per registered vehicle, or per mile of travel, are compared, even more additional US deaths are computed. Accumulating the differences over 1979 – 2002 shows that by merely matching the mediocre safety performance of the comparison countries, about 200,000 fewer Americans would have died.^{4(p 387)}

The disastrous trend in US safety continues. In 2005 Sweden recorded 440 traffic deaths – their lowest total since the 1940s. The US recorded 43,443, the highest total in 15 years; 23 US states with smaller populations than Sweden recorded more traffic deaths than Sweden. Eleven of these recorded more than twice as many deaths as Sweden, and one (North Carolina with 1,534) recorded more than three times as many.

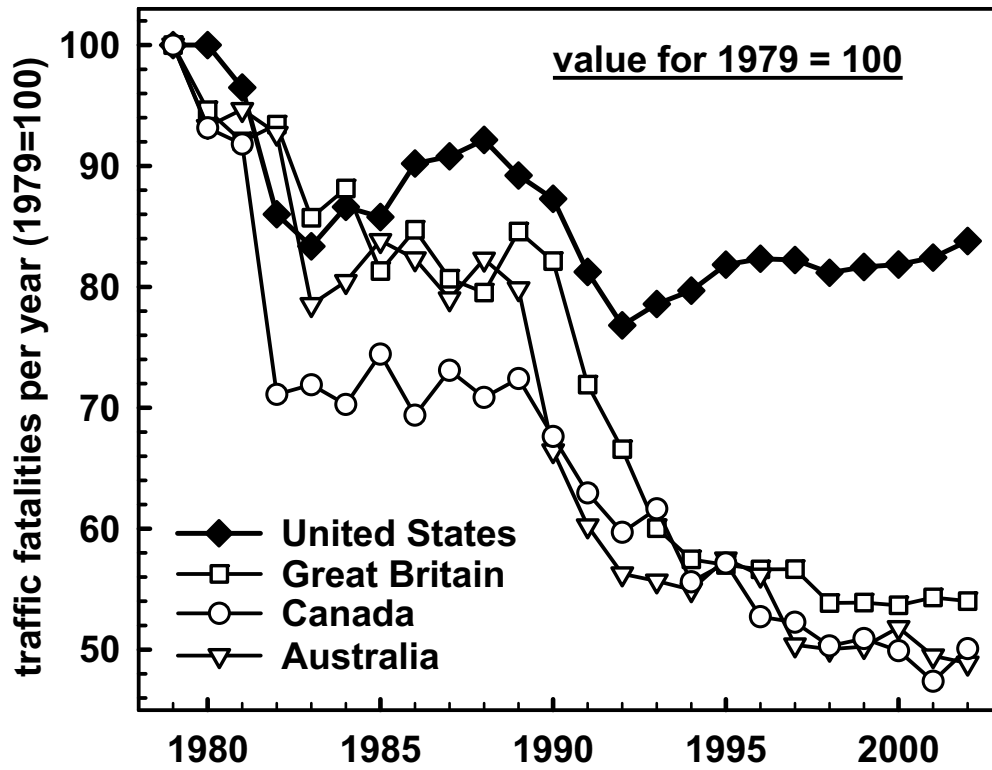


Figure 1. Traffic fatalities per year in the US and in three comparison countries. All values are rescaled by dividing the actual number for each year by the number in 1979, and multiplying by 100. The absolute numbers of deaths in 1979 are as follows: US = 51,093; GB = 6,352; Can = 5,863; Aus = 3,508. Reproduced from p. 382 of Ref 4.

US safety policy priorities are ordered almost perfectly opposite to where benefits are known to be greatest. This happened because the US ignored well-documented scientific knowledge to a far greater extent than other countries. The result was that the US placed most emphasis on factors known to have minor effects, thus leaving little energy for factors known to produce major benefits.

Vehicles are the obsessive focus of US road-traffic safety policy. In commercial aviation safety, the US is a leader. In 2002 there were zero fatalities,⁹ yet (for operational reasons) modern aircraft are far less crashworthy than those in earlier high-fatality years. Aviation safety succeeds by focusing on preventing crashes, not surviving them.

The US government's own research⁵ showed that vehicle factors were the sole factor in only 2% of a large sample of crashes, while human factors were a sole or contributing factor in 93%, findings closely corroborated by British research.⁶

More than 30 million vehicle safety recall notices are issued annually in the US (about 1.7 recalls for every new vehicle sold).¹⁰ The National Highway Traffic Safety Administration, the government agency responsible for the massive expenditures and activity associated with these recalls, has provided no evidence that they save a single life.

There is nothing special about safety policy in the comparison countries – it is influenced by lobbying, misunderstanding, special interests, etc. and legislators' concern not to irritate the electorate they hope will return them to office in the next election. It can accordingly be described as *ordinarily foolish*. In contrast, US policy is *extraordinarily foolish*.

The chapter in the cited book ends with a quotation from Goethe: *There is nothing more fearful than ignorance in action.*^{4(p 407)}

The safety policy of the US government spotlights in a most dramatic fashion an ethical question of enormous dimensions. Is it morally acceptable to ignore known knowledge if doing so leads to so much harm?

Airbags and safety belts

Much of the thinking surrounding US safety policy is based on a grand assumption that is almost never specified, let alone discussed or justified. It is assumed that traffic crashes are inevitable. They are pre-ordained, or flow inexorably from the flawed nature of man (or of Americans). Accordingly, the only thing we can do is reduce harm when crashes occur.

Even within the arena of protection when crashes occur, it was a strongly affirmed belief rather than scientific knowledge that dominated US safety policy thinking in the crucial 1970s that initiated the present disastrous course. The belief was that passive devices (ones for which no actions were required by users) were intrinsically superior to active devices (user actions required). More specifically, that airbags were superior to safety belts.

The belief was supported using the persuasive analogy that adding chlorine to the public water supply is a more effective countermeasure against cholera than attempting to persuade everyone to boil drinking water. The principle that passive was superior to active determined policy rather than the science that showed that safety belts were three times as effective as airbags. Australia had the first belt-wearing law in 1970. More than 100,000 Americans died because the US did not start getting belt laws until 1984,^{4(p 406)} the delay being almost entirely due to the belief in passive solutions.

Despite the fact that the technical community knew airbags provided only small net benefits, and those designed to meet US standards could kill people who would otherwise be uninjured in crashes, airbags were not only permitted to be sold, but were mandated as required equipment.

Even after government data documented that many short women had been killed in crashes in which, if there had been no airbag, they would have been

uninjured or only slightly injured, airbags continued to be mandated.¹¹ Short women purchasing vehicles were required by law to purchase a device that was known to increase their risk of being killed. It was illegal for them to have the device threatening their lives deactivated unless they received specific government permission.

When a drug kills patients, it is recalled without regard to whether it helps more patients than it hurts. How can so different a standard apply when safety equipment kills?

Airbags pose another moral question. Those designed to US standards (requiring that they protect unbelted occupants) increased net harm to females, but decreased net harm to males.¹² Twice as many males crash, so the net effect was a modest population risk reduction. In what scheme of medical ethics is it acceptable to sacrifice females in order to save males?

The above comments relate to what are referred to as first generation airbags. Later models incorporated changes designed to address unintended deaths. How were they tested? By using as subjects unwilling and generally unknowing occupants of new vehicles. The redesigned airbags were an improvement – they killed occupants at a lower rate than the first generation airbags. But they continued to kill healthy people who would have been only slightly injured, or not injured at all, were it not for the airbag.¹¹ How enormous is the contrast between this and the “informed consent” and other formal protocols surrounding drug testing.

US drivers systematically misled

American drivers have for decades been persuaded that safety is to do with vehicles, crash test ratings and on-board safety equipment (especially airbags). Harm is presented as due to the bad decisions of those responsible for making roads and vehicles.

Drivers know that they personally do not make roads or vehicles, so are led to believe that safety has little to do with them. They are encouraged to believe the very opposite of what is most beneficial to safety. Drivers cannot begin to make moral choices unless they understand that it is their own choices and actions that have the most impact on not only their own safety, but that of others.

CRASH COMPATIBILITY

One vehicle factor that has attracted enormous attention is dubbed "crash compatibility". It refers to the relative risks of those traveling in each of the vehicles involved in a two-vehicle crash.

If the risks in each vehicle are identical, the vehicles are considered to be "crash compatible". A vehicle (usually a large heavy one) that imposes higher

risks on drivers of other vehicles is described as having unfavorable crash compatibility.

The truly great incompatibility, and one that has been central since the beginning of the automobile, is between pedestrians and vehicles. When a vehicle strikes a pedestrian, the type, mass, or size of the vehicle has little effect on the pedestrian's fate. Most of the 1.2 million people killed on the world's roads annually are pedestrians. (In the US there were 4,881 pedestrian deaths in 2005, the highest total in the last four years.)

Even when identical vehicles crash head-on into each other, their drivers do not have identical risks. If one driver is a man, and the other a similar-age woman, the woman is 28% more likely to die. If one driver is age 20 and the other age 70, the older driver is three times as likely to die. If one driver is drunk and the other sober, the drunk is twice as likely to die (because alcohol affects many body organs, not just the brain).^{4(p 120-46)} If one driver is traveling alone while the other has a passenger, the lone driver is 14% more likely to die than the accompanied driver, because the accompanied driver is in a vehicle heavier by the mass of its passenger.¹³ The only way to achieve equity of risk in traffic is to avoid crashing so that all participants are equally unhurt.

OBJECTIONS TO ELECTRONIC ENFORCEMENT OF TRAFFIC LAW

Electronic surveillance of traffic has consistently been shown to reduce crashes. It is often opposed by invoking two philosophical principles – the freedom of the individual and the right to privacy. For more than a hundred years drivers have not been free to drive on their chosen side of the road at their chosen speed after consuming their chosen amount of alcohol. Driving is performed on a public road, and only with government permission. Police officers are empowered to observe and stop vehicles. The principle that driving is a public activity regulated by government has been decided long ago and appears to be universally accepted. All present discussion is mere squabbling over methods and details.

Much of the often heated discussion about "rights" proceeds in blissful ignorance of the fact that more than a thousand children eight years old or younger are killed in US traffic annually (plus about 65 fetuses¹³). It is time to focus on how the behavior of those presumed to be able to make moral choices impacts the lives of those incapable of exercising such choices.

DRUNK DRIVING AND SPEEDING

Drunk driving has been discussed in moral terms in the US more than any other traffic safety topic, largely due to *Mothers Against Drunk Driving*. MADD was founded by a mother whose daughter was killed by a drunk driver as she was

walking in the middle of the day in California. MADD generated widespread moral outrage against drunk driving that culminated in many societal and law changes. The combined effect of this ethical discussion probably saved more lives than any US traffic safety measure.

In commending the success of MADD, it should be kept in mind that overwhelmingly the victims of drunk driving are the drunk drivers themselves (and their, in most cases, similarly drunk passengers).

A child pedestrian killed by a drunk driver gave birth to MADD. However, about 90% of the child pedestrians killed in the US are killed by sober drivers.^{4(p 342)} The major problem in traffic is the sober driver problem, and the most important factor is travel speed (Figure 2).

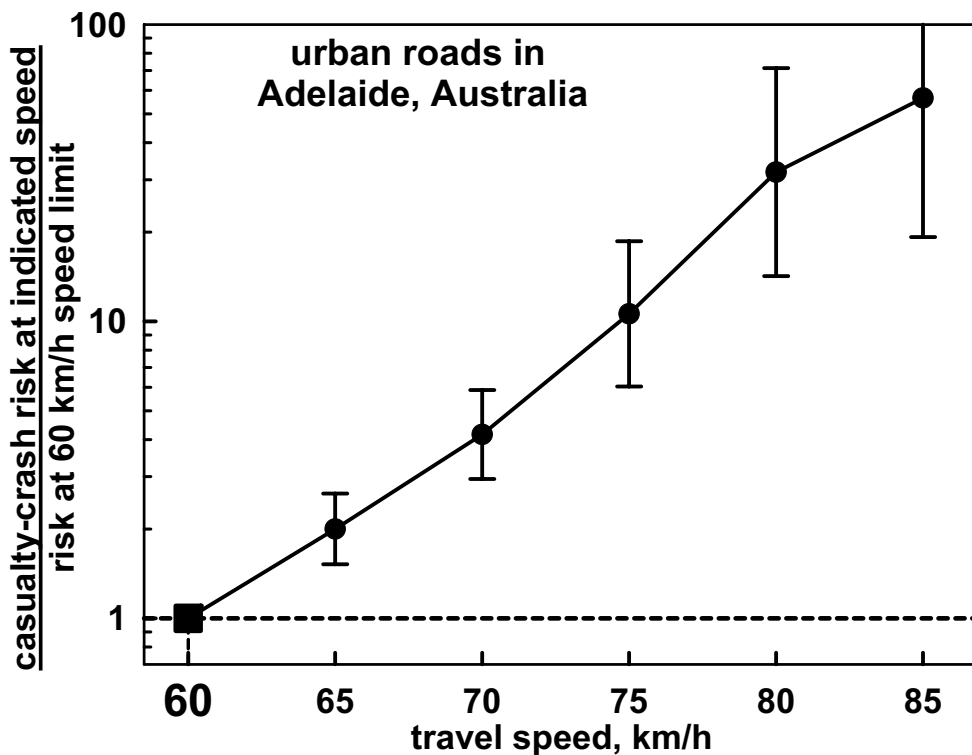


Figure 2. The effect of travel speed on the risk of an injury-producing crash on urban streets relative to the risk when traveling at the 60 km/h speed limit. Approximately, each additional 5 km/h that the 60 km/h speed limit is exceeded doubles the risk of involvement in a crash that sends some road user to hospital. Data from Ref. 13, figure based on more detailed figure on page 210 of Ref. 4.

Eliminating speeding would prevent far more harm than eliminating drunk driving. Speeding should be discussed in ethical terms even more than drunk driving because speeders are presumed to be in full conscious control of their behavior, whereas most drunk drivers involved in fatal crashes are alcoholics who may suffer from a disease that diminishes such control.

THE LESSON FROM MADD

Annually 43,000 Americans are killed in traffic crashes. This total already reflects a reduction of about 15,000 per year due to reductions in drunk driving.^{4(p 258)} The major source of the drunk driving reduction was the widespread discussion of this issue in moral terms, largely because of the activities of MADD. It was the discussions in moral terms that contributed to major changes in public attitudes, which in turn generated changes in law and the entertainment industry.

Traffic safety is about much more than drunk driving. If alcohol were to disappear, more than 26,000 Americans would still be killed on our roads annually.^{4(p 251)} Some of the highest fatality rates are in the Moslem countries that are most strict in prohibit alcohol.

The lesson from MADD is that discussing one source of harm from traffic in moral terms led to major reductions in deaths from that source.

CONCLUION

Increased professional and public discussion of the ethical issues surrounding all causes of harm in traffic can make a major contribution to reducing this harm, which annually kills 1.2 million people on the world's roads.

REFERENCES

- 1 Peden, M., Scurfield, R., Sleet, D., Mohan, D., Hyder, A.A., Jarawan, E. and Mathers, C. "World report on road traffic injury prevention," World Health Organization, Geneva, Switzerland. 2004 (ISBN 9241562609).
- 2 Husak, D. "Vehicles and crashes: Why is this moral issue overlooked?" *Social Theory and Practice* 2004; **30**:351-70.
- 3 Gibson, J.J. and Crooks, L.E. "A theoretical field-analysis of automobile driving," *American Journal of Psychology* 1938; **51**: 453-71. (Complete text is viewable from <http://www.scienceservingsociety.com/GC.htm>).
- 4 Evans, L. *Traffic Safety*. Bloomfield Hills, Michigan: Science Serving Society, 2004. (ISBN 0975487108) Details at <http://www.scienceservingsociety.com/traffic-safety.htm>

- 5 Treat, J.R. "A study of precrash factors involved in traffic accidents," *The HSRI Research Review*. Ann Arbor, Michigan; May-August 1980.
- 6 Sabey, B.E. and Staughton, G.C. "Interacting roles of road environment, vehicle and road user in accidents," presented to the Fifth International Conference of the International Association for Accident and Traffic Medicine, London, UK; 1975.
- 7 Evans, L. "The dominant role of driver behavior in traffic safety," *American Journal Public Health* 1996; **86**:784-5.
- 8 National Highway Traffic Safety Administration. Fatality Analysis Reporting System (FARS) Web-Based Encyclopedia. Data files and procedures to analyze them at <http://www-fars.nhtsa.dot.gov/Main/index.aspx>
- 9 US Department of Transportation, Bureau of Statistics. Table 2-1. Transportation fatalities by mode. http://www.bts.gov/publications/national_transportation_statistics/2003/html/table_02_01.html
- 10 McDonald, K.M. *Shifting out of park: Moving auto safety from recalls to reason*. Tucson, Arizona: Lawyers & Judges Publishing Company, 2006. (ISBN 1933264160)
- 11 Kahane, C.J. "An Evaluation of the 1998-1999 redesign of frontal air bags," Report DOT HS 810 685. Washington, DC: US Department of Transportation, National Highway Traffic Safety Administration; August 2006.
- 12 Dalmotas, D.J., Hurley, J., German, A. and Digges, K. "Air bag deployment crashes in Canada," Paper 96-S10-05. *15th Enhanced Safety of Vehicles Conference*, Melbourne, Australia; 13-17 May 1996.
- 13 Evans, L. "Causal influence of car mass and size on driver fatality risk," *American Journal of Public Health* 2001; **91**:1076-81.
- 14 Kloeden, C.N., McLean, A.J., Moore, V.M. and Ponte, G. "Travelling speed and the risk of crash involvement," Volume 1– Findings. CR 172. Canberra, Australia: Federal Office of Road Safety; November 1997.
- 15 Weiss, H.B., Songer, T.J. and Fabio, A. "Fetal deaths related to maternal injury," *Journal of the American Medical Association* 2001; **286**:1863-1868.