

Gender, age and motor vehicles - which combination is highest risk?

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Abstract

The paper will take a global perspective on high-risk road users to begin with, considering not only motor vehicle drivers but also non-motorised users and then working back to consider young men who are probably seen as the highest risk group in Australia. But are they really? The paper will look at gender as a risk factor and age related issues drawing on statistical data from the NSW RTA and QLD Transport as well as social and cultural research from focus group studies with young drivers. Taking into consideration gender, age and the motor vehicle, the primary question of the paper will be: is gender more of a factor than age and how much of the risk factor is due to the motor vehicle itself? In combination these factors are all important and their contributions need to be more deeply examined separately and together.

Keywords

Young drivers, social framing, gender

Introduction

The paper examines data from a number of sources to highlight the impact of the car and the gender of the driver on road trauma. The concept of social framing is introduced to help explain the higher crash rates of males that are not explained by risk taking or kilometres traveled, for example. A study of gender differences in Jordan (Al-Balbissi 2003) found that even when kilometers traveled (17,000 for men and 12,000 for women) was taken into account males had a higher rate of crashes (2.42 times on average) (68). Mayhew, Ferguson, Desmond and Simpson (2003) in a study of fatal accident data between 1975 and 1998 in the United States found that many more women were licenced to drive and drove more kilometers but the fatal collision rate for male drivers was still 2.5 times greater than for females. The rate had dropped from 4 times greater in 1975.

In a study of age and gender behaviour in Queensland, Turner and McClure (2003) concluded that being male or aged 17-29 years is associated with increased crash risk and that this age and gender differential can in part be explained by risk-taking. How the driver is constructed in the broader social and cultural context is a significant area of concern. While values are considered as contributing to behaviour in frameworks such as the planned behaviour and reasoned action frameworks investigated extensively in relation to road safety by a team of researchers in Britain (Parker, Manstead and Stradling 1995), values are not intensively investigated in their specific contribution to behaviour on the roads (Redshaw 2008).

Significant breakdowns in road statistics in Australia tend to be focused on age. In the eight year age range 17-24 there is clearly a higher incidence of fatalities – between 25% and 27% of the total (Table 3). This is related to lack of experience and the time required to gain the relevant experience as well as times and places driven (Ferguson 2003), presence of passengers (Simons-Morton, Lerner and Singer 2005, Senserrick and Haworth 2005, Stevenson 2005) and a tendency to engage in risky driving (Sakar and Andreas 2004, Clarke,

Ward and Truman 2005). Young drivers themselves have been targeted for special measures related to their specific behaviours such as night driving and passenger restrictions. However, young drivers are influenced in their behaviour by drivers in other age groups as well as social and cultural influences such as the media where car advertising emphasises power, performance and speed of cars (Redshaw 2007).

Global Perspective

To get a broader perspective on road deaths and injuries I want to begin by looking at a global perspective on the impact of motor vehicles. Even where it is not the dominant mode of mobility, the motor vehicle has a dominating effect. The most vulnerable road users, pedestrians and two wheel motorised and nonmotorised vehicle operators, represent between 41% and 75% of all fatalities in lower and middle income countries. As is reported in *The Lancet* (Ameratunga, Hajar and Norton 2006) despite reporting difficulties ‘most of the estimated 1–2 million people killed on roads in 2002 were not car occupants’ (1535).

To demonstrate the impact of four wheeled vehicles we can interrogate statistics from Singapore, which has one of the lowest rates of fatality per 100,000 of population in the world (WHO 2004, Table A.4, 195). There are some gains to be made by having a close look at statistics from Singapore since there have been significant campaigns targeting all levels of road users (Lazar 2003). Analysis of available data shows some of the responsibility lies with motorised, particularly four-wheeled motorised vehicles for the ongoing road casualties. Singapore has a high number of deaths amongst motorcyclists, pillion riders, pedestrians, and pedal cyclists compared to motor car drivers and passengers, and other motor vehicles such as trucks and buses (Table 1) This indicates that motor vehicle safety is reasonably good from the perspective of occupants of four wheel vehicles, and highways reasonable for motor vehicles, at least for four-wheeled vehicles. Although there are high numbers of motorcycles in Singapore, vulnerable non-motorised and motorcycle users are possibly not catered for as well as motor vehicles. While motorcycles constituted 17% (142,337) of the total vehicle population (824,388) in 2007 they represented 48% of the fatalities (Statistics courtesy of the Singapore Land Transport Authority www.lta.gov.sg).

	Motorcycle	Pedestrian	Cyclists	Car	Trucks/ Buses	Total
2006	102 54%	42 22%	14 7%	18 9%	14 7%	190
2007	103 48%	58 27%	22 10%	24 11%	12 5%	214

Table 1

The number of speed related deaths in Singapore was reportedly 67 of a total of 190 in 2006 and 70 of a total of 214 in 2007. There is no indication from these statistics as to whether four-wheel motorised vehicles caused or were involved in more of the deaths and this should be considered more closely. At the very least the impact of motorised four-wheel vehicles on other road users and overall quality of life needs to be addressed in the overall vision.

Another country that has a consistently low rate per 100,000 and a vision for reducing the road toll is Sweden. Sweden has had a road fatality rate of 5 per 100,000 for 2004 to 2006 (SIKA 2006, 84). In the case of Sweden most of these deaths are car occupants, 261 of a total of 445 in 2006, whereas there were 55 pedestrian and 26 cyclist deaths, while 55 motorcyclists were also killed (23). The Swedish report also

gives numbers on the involvement of motor vehicles in fatalities – 104 deaths (23% of total fatalities) involved a single car, and 153 (34% of total fatalities) involved a car and another motor vehicle, 40 pedestrian (71% of pedestrian deaths) and 12 cyclist (46% of cyclist deaths) deaths involved a car, 9 pedestrian and 6 cyclist deaths involved a truck and 1 cyclist death involved a motorcycle (72–74). Since they can cause so much damage the impact of the motor vehicle, particularly cars, on all types of mobility is a major issue. Even with the separation of vehicles and pedestrians that is characteristic of highly developed countries like Sweden, they are still a significant cause of death and injury. A further issue noted in the Swedish report is that 75% of the road deaths are men and that this is only partly explained by distance traveled, with ‘a big part still unexplained’ (7).

Local Perspective – Australia

Australia unsurprisingly, has a higher proportion of drivers killed than any other road user and this has stayed in the range of 40%–48% of all deaths between 1990 and 2004 as can be seen in Table 2. Pedestrians and cyclists, the most vulnerable road users have a range of between 14%–20% and 1.6%–2.7% respectively from 1990–2004. The pattern of proportions of road users killed has remained relatively unchanged in this period even though overall numbers in each category have dropped. If anything, the proportion of drivers killed has risen.

Road deaths by road user group, 1990 to 2004 (ATSB 2004)

Year	Drivers	Passengers	Pedestrians	Motor cyclists(a)	Bicyclists (b)	All road users (c)
1990	935 40%	634	420 18%	262	80 3.4%	2331
1991	910 43%	554	343 16%	248	58 2.7%	2113
1992	815 41%	570	350 18%	197	41 2.1%	1974
1993	859 44%	513	331 17%	203	45 2.3%	1953
1994	809 42%	501	367 19%	190	59 5.4%	1928
1995	874 43%	491	398 20%	204	48 2.4%	2017
1996	869 44%	499	351 18%	193	57 2.9%	1970
1997	776 44%	431	328 19%	177	52 2.9%	1767
1998	741 42%	468	318 18%	181	44 2.5%	1755
1999	820 46%	428	299 17%	176	40 2.3%	1764
2000	852 47%	450 25%	287 16%	191 11%	31 1.7%	1817
2001	776 45%	407 23%	290 17%	216 12%	46 2.6%	1737
2002	785 46%	422 24%	249 15%	224 13%	34 1.9%	1715
2003	747 46%	420 26%	232 14%	188 12%	26 1.6%	1621
2004	770 48%	361 23%	223 14%	196 12%	43 2.6%	1596

(a) Includes pillion passengers. (b) From 1989, includes pedal cycle passengers. (c) Includes road users not separately classified.

Table 2

Australia could certainly be said to be car centred with pedestrians often separated from cars and inconvenienced to the advantage of motorised forms of mobility. Similarly with cycling – cyclists have been expected to stay out of the way of cars and not to inconvenience them. Recent debates about cycle ways and cycle access to roads in Sydney has shown the extent to which motorists often object to the presence of bicycles on the road. The laws have been changed in New South Wales relating to cyclists on the road in 2008 in response to increases in numbers of cyclists over recent years.

Even with the increased safety technology available in cars today Australian drivers continue to be killed in similar proportions. We are unable to discern from this data how many of the deaths of vulnerable road users involved cars specifically but if Sweden with its similar dominance of motorised road transport and proportion of car occupant deaths is any indication

(74% for Sweden (SIKA 2004) and 69% for Australia in 2004) taking into account Sweden's lower rate of 5 per 100,000 compared to Australia's 8, it is likely to be >70%.

The car has a significant impact on lifestyle in Australia both in terms of the use of the private car as the primary form of mobility and in the impact on other forms of mobility. The car itself as the dominant form of motorised transport is responsible for a high proportion of road death and injury. Motorised vehicles along with the speed they are driven at, represent a significant danger in themselves not due only to the way that they are driven or who is driving them. Increasing emphasis on excluding cars from particular areas and lowering speed limits is beginning to change the dominance of the car on public streets but it will be a long time before the privileged place of the automobile is given a more realistic place.

Social Framing

Mobility is subject to social framing with our expectations shaped by what is available to us and what appears most convenient and attractive to us. Social framing, in which the media plays a significant part, generates, reinforces and determines expectations and beliefs which limit the options available to those that dominant groups such as manufacturers, governments and large groups in the population prefer. 'Frame' refers both to 'the devices through which media texts structure or "frame" our perception of the realities they represent' and 'the framework of expectations and plans which are associated with, or "frame", an action' (Couldry 2000, 16).

There are two primary areas of social framing relevant to driving that I will focus on here. Firstly the car itself is built and framed in particular ways that are aggressive, dominating and dangerous. Not only have cars been built in certain ways rather than others, for example, early electric cars were not regarded as 'masculine' enough (Scharff 1991, 55) cars and car networks have been the preferred option of manufacturers and governments. Public transport in Western societies particularly, has suffered from serious neglect in preference to the private car. This is not due simply to the demands of individuals, though those who were most well off and could afford cars were a strong voice in demanding priority for their motor vehicles. Cars have been promoted as prestige items that say something about the owner/driver and manufacturers are well aware of this message in promoting cars in China. Where having a BMW or a more powerful Falcon or Commodore is the element of prestige in Australia, in China having a car, especially a new car, is evidently prestigious in itself (*The Cars That Ate Peking*, documentary shown on ABC TV in July 2008).

Now that everyone in countries like Australia has a car the demand for bigger, faster roads is spiraling and the dominance of the car has been largely accepted, though not unquestioned. It has taken considerable lobbying to have some features of cars that are damaging to pedestrians and other vulnerable modes of transport changed. A recent example is bull bars on city cars that result in a higher proportion of head injuries amongst pedestrians. There are many other historical examples (Jain 2004). When cars are made and promoted as fast, powerful and inciting excitement they are likely to be driven accordingly. There are certainly expectations created that they can and should be driven accordingly and yet this has little to do with concern with the safety of others, particularly vulnerable road users, and tends to focus on the car at the expense of anything else in the environment. Some cars are seen as having 'that "need for speed" feel' (M2) about them and even some young women found a television advertisement for a fast powerful car appealing:

F1: Didn't they ban this one? Because it was racy? It was encouraging fast driving?
F2: I thought it was appealing. Attractive. I'd go fast if I had a Monaro. (Transforming Drivers Media Study FG1 Bathurst)

The women were reflecting on why young men feel they have to drive a car in a certain way and recognised the connection between the way the car was promoted and the likelihood that it would be driven accordingly. As a young woman in another focus group put it:

Especially if they're guys, you know? You're going to have the big car, the more power the better. (Transforming Drivers Gender Study F1 Blacktown)

Many features of cars that are built into them and heavily promoted despite their inappropriateness on the roads include speedos up to 260km/h and more, take off speeds of 0-100 in ... seconds and safer cornering which often equals faster cornering. The fact that cars have to slow down to go around corners is a source of irritation to some and something that must be overcome but the faster cars are able to go around corners the less safe it becomes for any vulnerable road users. Roads are regarded as the domain of motor vehicles when they are actually avenues or vectors of mobility, sometimes with no footpath or consideration of other road users.

The way that roads are 'framed' is also a contributing factor since roads are built primarily for motor vehicles and not for mobility that includes other forms of non-motorised transport. New roads are generally more likely to include planning for other forms of transport but many highways have no footpaths and footpaths will not be considered until the whole road is upgraded for motor vehicles.

The second area I wish to focus on is the driver. Drivers are framed in ways that are shaped by and within cars and car networks (Redshaw 2006). Aspects of drivers that are important here are age, gender and socio-economic circumstances for example. Men are expected to take to cars, to drive and to express themselves through cars in quite different ways to women and are stereotypically seen as car mad when clearly all men are not so car focused. We do have a significant focus on age as a characteristic of drivers that is of relevance and concern in the road traffic statistics but age on its own is an insufficient focus when gender is so much more significant.

Gender

When we look at data from New South Wales from 2000 – 2006 (Table 3) and Queensland from 2000 – 2003 (Table 4) and take percentages of male deaths we see that males represent a consistently high percentage of fatalities – between 67% and 76% of all drivers killed in New South Wales and between 73% and 78% in the three years 2000 – 2003 (2002 missing) in Queensland. Car driver deaths were chosen because they exclude trucks and other large vehicles as well as motorcycles where the majority of licence holders are men. Car licences are more evenly distributed amongst men and women (for example RTA 2007) and while I have not allowed for distances traveled here it is no longer as large a difference between the kilometers driven by men compared to those driven by women. It would certainly be worthwhile looking at the proportion of male and female driver deaths over a greater number of years. Even allowing for kilometers traveled, the pattern in the proportion of men killed is not explained by that factor alone.

New South Wales – Car Drivers Killed

Year	M	F	Total	% Male
2000	169	51	220	76
2001	135	44	179	75
2002	157	62	219	72
2003	136	59	195	70
2004	121	59	180	67
2005	142	49	191	74
2006	159	51	210	76

Table 3 New South Wales Roads and Traffic Authority – Data extracted from RTA 2001, 2002, 2003, 2004, 2005, 2006, 2007

Queensland – Car Drivers Killed

Year	M	F	Total	% Male
2000	119	38	157	76
2001	110	40	150	73
2002			135	
2003	110	31	141	78
2004			146	

Table 4 Queensland Transport 2000, 2001, 2003 (data missing)

The pattern of gender differentiation in road fatalities amongst car drivers is maintained even if we look at national data as in Table 5.

ATSB (2004) – Drivers Killed Australia Wide

	Males	Females	Total	% Male
Jan 2004 - Dec 2004	592	177	770	77
Jan 2003 - Dec 2003	569	178	774	74

Table 5 ATSB 2004

Interestingly, when we look at car drivers injured by gender in both states we see that there are almost equal numbers. The fact that more men are killed could be explained by the argument that men have more dangerous accidents than women.

New South Wales – Car Drivers Injured

Year	M	F	Total	% Male
2000	6766	6849	13645	50
2001	7196	7329	14554	49
2002	6729	7175	13927	48
2003	6553	7077	13665	48
2004	6187	6987	13210	46
2005	5795	6562	12380	46
2006	5722	6819	12568	46

Table 6 New South Wales Roads and Traffic Authority – Data extracted from RTA 2001, 2002, 2003, 2004, 2005, 2006, 2007

Queensland – Car Drivers Injured

Year	M	F	Total	% Male
2000	4118	3879	7997	51
2001	4941	4743	9684	49
2002				
2003	5027	4939	9974	48
2004				
2005				
2006				

Table 7 Queensland Transport 2000, 2001, 2003

Furthermore, when gender is considered across age groups male fatalities remain significantly higher. As can be seen in Table 8, there are fluctuations from year to year but male fatalities are typically well over 50%.

Female

age	2000	% of age group	2001	% of age group	2002	% of age group	2003	% of age group	2004	% of age group	2005	% of age group	2006	% of age group
17-20	10	25%	2	7%	8	22%	8	30%	7	26%	6	26%	7	21%
21-25	5	19%	4	27%	4	18%	5	19%	7	37%	3	11%	11	28%
26-29	5	26%	3	27%	3	20%	5	36%	2	13%	6	32%	3	19%
30-39	7	22%	6	19%	13	35%	7	24%	10	43%	10	29%	5	17%
40-49	8	29%	9	39%	12	36%	11	37%	9	43%	6	24%	9	28%
50-59	8	30%	10	40%	7	39%	10	45%	12	46%	16	52%	7	58%
Total	43	25%	34	25%	47	29%	46	31%	47	36%	47	29%	42	26%

Male

17-20	30	75%	28	93%	28	78%	19	70%	20	74%	17	74%	27	79%
21-25	22	81%	11	73%	18	82%	22	81%	12	63%	24	89%	28	72%
26-29	14	74%	8	73%	12	80%	9	64%	14	88%	13	68%	13	81%
30-39	25	78%	26	81%	24	65%	22	76%	13	57%	25	71%	25	83%
40-49	20	71%	14	61%	21	64%	19	63%	12	57%	19	76%	23	72%
50-59	19	70%	15	60%	11	61%	12	55%	14	54%	15	48%	5	42%
Total	130	75%	102	75%	114	71%	103	69%	85	64%	113	71%	121	74%

Table 8 NSW Drivers – Data extracted from RTA 2001, 2002, 2003, 2004, 2005, 2006, 2007

The way men drive could be seen as a significant factor contributing to their over representation in all categories of road casualties. Young men are inclined to claim that men have a ‘natural’ connection to cars and that they are better drivers than women while young women consider themselves good drivers (Redshaw 2008, 83–90). The standards of what is considered a good driver differ for men and women. Where men are more likely to consider good driving as evident in car handling skill, women are more likely to consider good driving as cautious and considerate driving (Redshaw 2008, 95–100). Clarke, Ward and Truman (2005) investigated skills deficits and risk taking behaviour as the cause of crashes amongst young drivers and reported that:

a large percentage of their accidents are purely the result of two or three failures resulting from voluntary risk taking behaviour, rather than skill deficits per se. It is shown that specific groups of young drivers can even be considered as above average

in driving skills, but simultaneously have a higher accident involvement due to their voluntary decisions to take risks (523).

Drivers of performance cars were found to have above average skills but were more likely to be male, to speed excessively and to drive recklessly, which tended to counteract their level of skill. Other studies have shown that males and females have different types of crashes (Laapotti and Keskinen 2003).

Two males in a focus group study expressed frustration at the apparent contradictions in the power of cars and the rules of the road after seeing a Monaro television advertisement:

M2: They're making more powerful cars, they're making the speed limits lower. And the fines bigger and everything's worse. And you go, "Right, I've got a performance car. Right! Going to buy the car! Put an exhaust on this car." F..., you've got a shop there, an exhaust shop, why the f... if he can put it on my car and he takes my money and this and that, it's a spin-out! Like, they're performance cars, you know what I mean? I don't know.

M1: I tell them, "Look, it's illegal, you're going to get busted." "Oh, I don't care." You think they care? Like, when I was seventeen, who gives a s...! I just wanted the car! Like, an ad like that, showing you go fast, this, that, but you buy that car, you get on the road, you're sitting there doing fifty! (Transforming Drivers Media Study FG Fairfield)

The young men feel a sense of powerlessness in having the car and not being legally able to drive it as it is 'meant to be driven'. Their feeling is that the roads should keep up with the abilities of the cars. The expectations connected with cars are clearly at odds with the reality of the roads and yet advertising is able to hide behind the distinction between fantasy and reality that they claim every driver is able to make. The distinction is not so clear however since a large part of the meaningfulness of the car far exceeds the need for mobility. Attributed meanings conveyed through car advertising rarely confronts the reality of roads and traffic. The social framing of cars through advertising often involves the battle between man and machine to 'tame the beast' on an open challenging road where there are no other cars or people to consider.

Men often regard themselves as superior drivers and some have great difficulty with considering women in the same terms. As one young man stated:

I see a car, a girl driving a Mirage, like you said, I pull over brrrrm! (laughter) You know what I mean? But I hate seeing girls driving around in done-up sports cars, because I think done-up cars should only be for boys! I know that's not fair, but - I go, "Oh, look at how she drives!" (Transforming Drivers Gender Study M3 Bankstown)

The women in the group responded saying that he need not worry it was most likely her boyfriend's car. One young man conceded that a woman who drives a manual car might be a better driver but he is was prepared to say this because not many women drive manuals and he can safely see it as a male skill:

Also, to me, if a girl is driving a manual, she's a better driver, because not many girls know how to drive a manual. That's how I see it. (M1)

The implication then is that most women do not drive very well because they only drive automatics. Some of the women in the group were unconcerned with the issue of who was a better driver. As one woman said:

I had a few lessons on a manual, but – this is easier to drive. Why bother? If you can just drive and not have to worry about changing gears? (F3)

The priorities of the young men and women are clearly different in this discourse. The women were not as concerned with defining themselves as drivers in the way that the men were but they were also not inclined to upset the view of themselves as lesser drivers because that would involve buying into the male view that a woman in a powerful car is a ‘tomboy’. A young man in another group emphasised the superiority of men as drivers explicitly stating:

Yeah, but I’m just saying that women don’t know how to drive! Like, if I’m in a car and I’m speeding it’s stupid if I’m speeding, but say something happens, I can maybe control it, you get me? (M5 Warrawong)

This young man had the view that he could speed and (most likely) control the car whereas a woman could not. The young men showed a need to consider themselves better drivers than the women through their driving performance which was as important as the performance capacity of the car. Some males are more car identified than others though it is apparent that male driving has a character that is more likely to lead to crashes and more serious crashes no matter how car identified they might be but they regard themselves as better drivers precisely because of the skills that get them into difficulties. Men are in this sense at the mercy of social definitions of men in relation to cars.

Conclusion

An analysis of data from the WHO (2004) World report on road traffic injury prevention (Table A.4, 188–195) shows that between 66% and 90% of fatal road deaths are men. Men certainly do more of the driving but they are also more likely to place themselves at risk and to hold values that place higher value on speed over caution and safety or concern for others, for example. On available data I have not been able to estimate how many deaths can be attributed to male operators of motor vehicles but at least some of the female deaths on the road are a result of male behaviours. The car is built and promoted to endorse and express those values and when combined with a driver who sees themselves in relation to the vehicle and its power and performance and his ability to demonstrate that, becomes a lethal weapon that supposedly caters to men’s desires. Men pride themselves on being skillful in handling cars but are responsible for more of the deaths on the road even if this is because they are the ones who drive more. Level of exposure is not an explanation unless death by motor vehicle continues to be considered inevitable. It is inevitable under current structures, expectations and demands.

The gender differences are not explained purely by the ‘risk taking’ of a few individuals as it has been defined and investigated which is in part due to the individual focus of many studies. There needs to be a combined analysis of perceived social attitudes and what is considered risk-taking behaviour in the broader social context. The concept of social framing is able to explain some of the gender differential by considering the implicit social and cultural meanings that are applied to cars and drivers and how these contribute to the aggressive dominance of cars.

Another limitation of current analyses is the focus on crash rates when there is a considerable impact on quality of life from the speed and style of driving as well as the dominant presence of motor vehicles. Often crashes are avoided because other road users move out of the way of the more powerful vehicle or avoid using the road unless they are in a motor vehicle. Recent

efforts by councils have included getting children back on their bikes to ride to school rather than being driven and children walking in groups. Lower speed limits around schools and in urban zones have helped to increase the potential for children to be safer on the roads but drivers are still often unaware of their speed or the impact their speed is having on the environment they are driving through. While quality of life is not taken into consideration the car continues to be regarded as the standard of mobility and faster roads that can accommodate higher performance cars the priority. Faster cars entrench the expectation that roads will be built to cater to faster speeds when the costs of accommodating speeds above current limits are enormous.

Clearly the car as well as the gender of the driver plays a significant part in road casualties, and the style of driving that men adopt needs to be examined and addressed more directly. Gender should be seen as playing a much more significant part than age in road casualties. The NSW 'Pinky' campaign has begun to address gender very successfully but there are many more aspects to question such as the priority of high level skill in good driving over awareness of the environment and planning. Young men have been shown to be more likely to exempt themselves from campaign messages because they consider their own driving good enough and therefore the message does not apply to them (Harre, Forest and O'Neill 2005). The association between race and rally driving and road driving needs to be questioned as it promotes the idea of car handling skill as the dominant skill domain in driving to the exclusion of other skills such as observation in a complex road environment where other elements need to be considered besides the car and one's driving prowess. This is an issue of social and cultural factors and not merely individual willfulness. Some responsibility has to be borne by the broader social context including manufacturers.

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