

Building bicycle friendly roads

Cycling is regarded by many politicians, planners and ordinary people as being an unsafe mode of transport. But as Alan A Parker explains, cycling is now safer than ever, and has the potential to become even safer if cyclists can effectively present the case for more bicycling facilities.

This writer has been studying the world as if it was a giant transport laboratory and has measured the safety performance of 14 road transport systems over 40 years. This was possible because accident data has been collected by the United Nations since the late 1950's and clearly shows the overall road safety trends. As a general rule those countries that have provided the best bicycle infrastructure and have high levels of bicycle use, have the lowest overall death rate per million population for all road users. They are also the most energy efficient.

The good news for both the Australian and international bicycle movement is that since 1970 cycling has become safer in the developed world, despite increasing levels of car use. This is clearly shown on Graphs 1 and 2. The road death rate for all road users and the bicyclist death rate has been dropping rapidly in most of the developed world's population. In Australia the number of cyclists killed has dropped from 102 in 1970 to 59 in 1994, despite the 5 million increase in population and the large increase in bicycle and car ownership shown on Graphs 3 and 4.

In most developed countries the post World War II boom in car use resulted in an epidemic of road deaths and a decline in bicycle use till around 1970, but the road trauma epidemic has since been gradually brought under control. Since 1945, 133,000 Australians have died on our roads, compared to 85,100 killed in both World Wars. Since 1945, 4,600 cyclists have been killed on the roads, of which at least 4,000 were killed in collisions with motor vehicles. In the next 50 years, using advanced planning methods, it should be possible to greatly increase bicycle use with

far fewer casualties.

If we want to create a sustainable and safe transportation system, both motoring and cycling must be made safer, and public transport has to be improved so that more people can use it and use bicycles to access it. There is now an opportunity to greatly increase bicycle use and make all passenger travel



Two-way bicycle lanes in the Netherlands with their own lighting for night-time safety

safer. The bicycle is wrongly regarded by governments as an accident problem, when world best practice in the Netherlands, Denmark and Sweden clearly shows that the bicycle is part of the solution in reducing road trauma and creating a sustainable society. On a per capita basis the Danes and Swedes use only two thirds of the road transport energy of Australians, while the Dutch and Japanese use only half as much (1992 data).

The international record

Graph 1 shows the decline in fatal bicycle accidents in G7 Nations, Australia and the Netherlands from 1970 to 1994. Graph 2 shows the decline in bicyclist road deaths in nine small European countries from 1970 to 1994. With the exception of Greece, there has

been a reduction in bicyclist road deaths in each of these countries. Given the increase in world population, the decline in cyclist death rates are even more marked than is shown on Graphs 1 and 2. This is a tremendous achievement, especially when you consider the increase in bicycle ownership rates shown on Graph 3 and the great increase in car ownership shown on Graph 4.

Despite increases in car use (90% of fatal bicycle accidents involve a collision with a motor vehicle) the death rate per 100,000 population from all road deaths (shown on Graph 5), has dropped dramatically since around 1970 in all 14 countries.

From 1945 to around 1970 the death rate from all road accidents rose in correlation to increasing car ownership, as is shown on Graph 5. During that time cycling groups in many countries complained bitterly that they were virtually being driven off the roads, even in the Netherlands. In the sixties there was a much higher proportion of badly trained and sometimes drunk drivers. Indeed, France had the worst road death rate and it also had the highest death rate from cirrhosis of the liver. Drink driving was a major problem in most other countries with the exception of Japan where the police treat drunk driving most severely but patiently assist drunks to get on trains to go home and still do to this day. The Swedes created special prisons for driving offenders to deal with this problem and have been very successful. There are now proportionally far fewer drivers with that most lethal combination of alcohol and testosterone in their blood in all 14 countries. In those days there were proportionally many more male drivers.

The fatal linear link between the increase in car ownership and car accidents was broken around 1970 and the road trauma epidemic started to be slowly brought under control. Since the 1970's a combination of better roads, safer cars, more stringent driving tests and driver education, vigorous traffic law enforcement and the use of laser speed guns and computer technology, have all contributed to reducing the road deaths. Deaths declined in Australia because similar road safety measures have been adopted as in the other developed countries, but occasionally Australia was innovative, as with the early introduction of seat belts and the use of automatic

speed cameras and compulsory helmet wearing. Unfortunately, Australian provision of facilities to make walking and cycling safe were and still are abysmal, so now is the right time for Australia to learn from other countries' innovations.

In the developed world only a few countries provide a mix of separate paths, lanes on the roads and low speed limits on minor roads that retained high levels of bicycle use. Graph 5 shows that three out of the four countries with the lowest road death rates, Sweden, Netherlands and Japan, have a good bicycle infrastructure and organised integration of bicycles with rail systems. The USA and France have the worst death rates and neither country provides much in the way of bicycle facilities compared to Sweden and the Netherlands. The idea that encouraging cycling will just increase the road toll is a myth because most of the safest road systems also have high levels of bicycle use. In the Netherlands they greatly increased bicycle use and reduced the number of bicycle casualties since the early 1970s by investing in bicycle infrastructure.

The safety myth

The perception that many older people have that cycling is unsafe persists in 10 of the 14 countries studied, particularly among the senior politicians and bureaucrats. This perception is a hangover from the 1950s and 1960s when enough of them learnt by practical experience that cycling was becoming hazardous. Amongst a younger generation of politicians and bureaucrats we have many habituated petrol heads with responsibilities for road safety who choose mostly to ignore the bicycle; or use statistics that are so misleading that they totally distort the truth and continue to spread the lie that cycling is a safety problem best dealt with by discouraging bicycle use.

An argument commonly used to disparage cycling is that per kilometre travelled, cycling is three to five times less safe than travelling by car. This argument is misleading because like is not compared with like. Most cyclists killed are below driving age, though cyclists and motorists are being compared as groups. Since children who now ride bikes do not have an equivalent group who drive cars, trucks and buses, any direct comparison between cyclist and motorist deaths will be misleading.

We only let children ride bikes because it is reasonably safe, and the mistakes they make do not kill other people. Indeed in the Netherlands where there are 13 million bicycles and 5.5 million cars there is no record of a cyclist killing a motorist in a collision. The recent accident data from Australia shows that the bicycle helmet has made it very difficult for cyclists to kill themselves except by being run over by a motor vehicle.

No comparative data to measure the safety

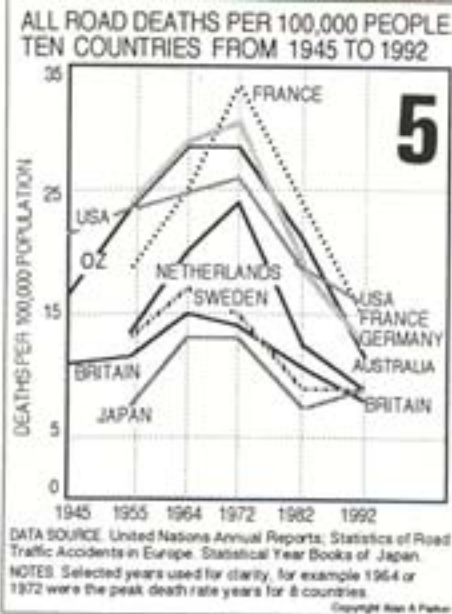
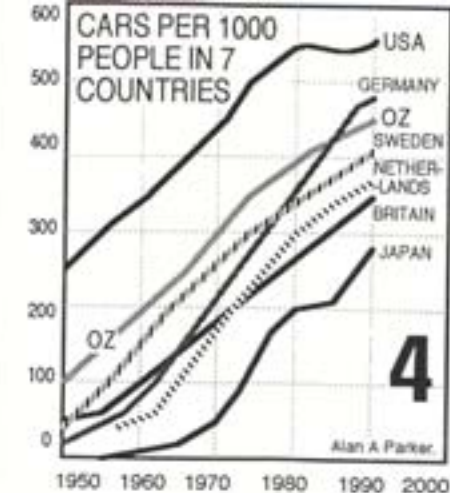
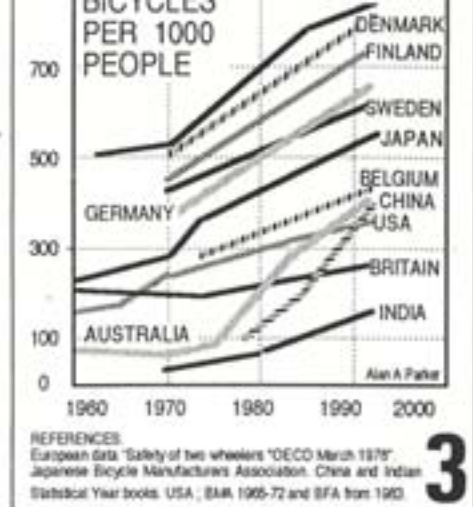


of cycling relative to driving has been developed, and Ton Welleman, Project manager of the Dutch bicycle master plan, explains why that is difficult to do. He states that "The risk for an 18-20 year old car driver is higher than for cyclists of the same age. Furthermore, only short trips made by bicyclists and short trips by car drivers should be compared as only these figures are relevant for comparison." His concern is that a high proportion of car driving is on urban and interstate highways and freeways which are far safer for drivers than on the minor arterial and local roads on which bicyclists do most of their travelling (Welleman 1995). Clearly if bicy-

cle trips substitute mostly for short car trips any comparison of the safety of cycling must be with safety record of cars on the roads used for short trips, and that comparison has never been made.

What we have to do is to ignore fatuous comparisons between cycling and motoring and recognise that cycling is now much safer. Indeed, the data in Graphs 1 and 2 is supported by Ton Welleman who states that in the Netherlands "More frequent and safer bicycle use is apparent from the number of cyclist casualties between 1980 and 1990 during which time bicycle kilometres increased by 30% and car kilometres increased by 25%.





The annual bicyclist death toll fell 30% and the number of seriously injured fell by 25%”

More important is knowing how to make cycling even safer by taking a systematic approach to transport safety. In the Netherlands a completely new approach to cycling safety, traffic and general transport safety is under development. The approach is no longer focused on accidents of particular groups,

ken and this is demonstrated on Graph 6, which shows the bicyclist death rate per 100 million bicycle km for Britain, Australia and the Netherlands, all of which are lower than in 1970. Unfortunately, the Australian data is less accurate, being an extrapolation from only one accurate survey (INTSTAT 1988).

Another problem with Graph 6 is that the low Australian fatality rate gives the false

the body. In the Netherlands, Britain, Denmark and Sweden helmet wearing is not compulsory and far fewer cyclist wear helmets so there will be proportionally more deaths from head injuries. The low Netherlands death rate on Graph 6 is due to better bicycle infrastructure that reduces the risk of collisions and that must reduce the very serious injury rate as well as the death rate. Most important of all, women cyclists perceive these facilities to be much safer and use bicycles as much as men. In Australia most women perceive traffic to be too dangerous to cycle in which is why so few women cycle.

The impact of helmet wearing on the death rate of adult and child cyclists in Australia is shown on Graph 7. The principal difference between the pattern of fatal accidents in the five year periods 1980 to 1984 and 1990 to 1994 was the reduction in the number of deaths in the 0 to 16 year age group. How

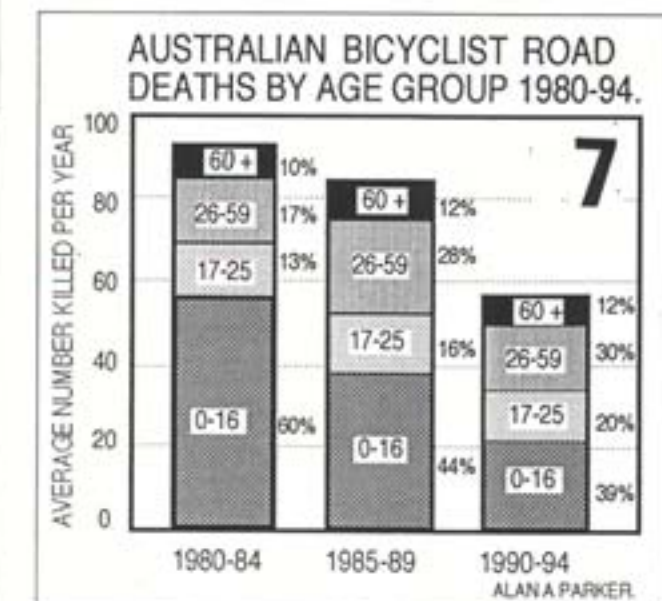
much of this reduction is due to helmet use being made compulsory and how much is due to children and young teenagers stopping cycling because they do not want to wear helmets or cannot afford to buy one is unknown. However, for adult cyclists the number killed has remained much the same over the last 15 years despite a large increase in bicycle ownership and a large increase in recreational cycling and cycling by tertiary students. We can therefore conclude that helmets have been partly responsible for the decrease in

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but on evolving a sustainable and inherently safe transport system. Welleman explains that “a couple of years ago, the first voices could be heard calling for the emphasis to be shifted to the system itself rather than the undesirable end product.”

Despite the huge difference in bicycle travel in Australia and the Netherlands, both countries have similar populations which makes comparisons easy. As with driving the linear link between increasing car use and increasing bicycle road deaths has been bro-

impression that there is a similar reduction in very serious casualties needing hospitalisation. Not so, because the wearing of helmets in Australia has reduced the number of fatal head injuries due to bicycle car collisions but it has not reduced the number of collisions with cars which produce injuries to the rest of



child cyclist death rate and the stable adult cyclist death rate despite an increase in bicycle use.

In Britain, which is similar to the Netherlands in terms of urban density, the decline in bicycle use was not arrested because Britain failed to invest in the necessary bicycle infrastructure. In Britain and Australia far fewer women than men ride bicycles and females are disadvantaged in terms of the transport options available to them because of the poor bicycle facilities in both countries. It is very significant that the recent British Royal Commission on the Environment was aware of these deficiencies and recommended better bicycle facilities to encourage a large increase in cycling in the UK.

Time for lobbying

Bicycling should be viewed as vital to the creation of a safer and more sustainable transport system. We can go the American way and have an even more car dominated transport system that would become a little bit safer for motor vehicle users but it will discourage most potential bicycle riders. Only 0.7% of all passenger trips are made by bicycle in America compared to 28% in the Netherlands, 18% in Denmark, 12% in Finland and Switzerland, 10% in Germany, 7.6% in Sweden.

The other option for Australia, where only 2% of all trips are by bicycle, is to go the Dutch/Scandinavian way with a bicycle friendly transport system that is much safer

for all road users and produces less greenhouse gases; which is important because meteorologists predict 1995 will be the hottest year on record since world wide temperature measurements were first taken in the 1870's. Indeed, our Commonwealth government ratified the Climate Treaty that recommended that bicycle use be encouraged but refuses to provide the states with funds for that to happen. Our green machine has got to be given priority for survival in the greenhouse world of tomorrow.

There is a political solution, because as every cyclist knows it is the squeaky wheel that gets the oil. In every federal electorate there are many Australian Cyclist readers, thousands of cyclists, at least one bikeshop and in many a BUG (bicycle user group) as well. Consider that, the paid up membership of all BFA groups is much greater than the membership of the Greens and Democrats and independents support groups combined in all states. That is a lot of squeaky wheels. Send your MP a Copy of Australian Cyclist or articles out of it to let them know you have a vote and want the next government to make a commitment to fund bicycle infrastructure. If that commitment is there, the Greens and Democrats, with just a little persuasion, would probably hold any future government to any budget commitment because the budget has to get their approval to pass through the Senate.

After the Queensland election both major parties began looking for support from mi-

nority groups. Let us support those who support cycling and tell your state bicycle group their views. MP's who are found to be unrepentant petrol heads and are not prepared to help cyclists should be publicly attacked in the media, especially by Cyclist readers in their local media. In at least one marginal seat State cycling groups should stand a bicycle candidate as symbol of its existence as a legitimate interest group.

Unfortunately the commonwealth and most state governments cannot free themselves quickly enough from the unsustainable, market driven, fantasy world of freeways and car culture. They know that now is a time for change but neither federal Labour or Liberal parties have bicycle friendly transport policies. So now is time to change their policies before the next election. The bicycle movement has to ensure that whichever party wins the next election they must have a bicycle infrastructure policy with an ongoing commonwealth funding commitment.

References

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