Muriel: Atropellaments vianants-bicicletes

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Drummond [15] va arribar a la conclusió en el seu informe que el problema de les baixes a causa de les col·lisions entre ciclistes i vianants a les voreres era de molt petites proporcions tals que no necessita ser considerada, en la formulació a nivell polític. D'altra banda, un informe sobre Seguretat de l'Assemblea Legislativa de Queensland (1993) sobre vianants i ciclistes, va arribar a la conclusió que les col·lisions amb vehicles de motor van causar la gran majoria de les morts de vianants i lesions [16].

Ja sé que hi ha ciclistes que van a tota bufa per Barcelona, amb el perill que això comporta per als vianants..però els ciclistes són molt àgils i.. si volen t'esquiven fàcilment..

Ja sabeu el que penso de la llei de Chapman Kolmogorov .

Bé, clar i català, per el que es dedueix de l'estudi més avall traduit, la probabilitat de que l'atropell de Na Muriel fos casual, és baixísima.

Us recopio la trad. d'un informe sobre el tema (cal corregir)

Drummond [15] va arribar a la conclusió en el seu informe que el problema de les baixes a causa de les col·lisions entre ciclistes i vianants a les voreres era de molt petites proporcions tals que no necessita ser considerada, en la formulació a nivell polític. D'altra banda, un informe sobre Seguretat de l'Assemblea Legislativa de Queensland (1993) sobre vianants i ciclistes, va arribar a la conclusió que les col·lisions amb vehicles de motor van causar la gran majoria de les morts de vianants i lesions [16].

Trevelyan i Morgan [12] van trobar els vianants eren més propensos a patir lesions en col·lisions entre bicicletes i vianants amb la gravetat depenent de l'edat. Han afegit que la integració dels ciclistes i vianants en les vies d'usuari compartides en gran mesura protegiria ciclistes de lesions per impacte vehicle sense augmentar injustificadament el risc

per als vianants. Van proposar que no hi havia raons principals per a justificar l'exclusió dels ciclistes de zones de vianants. Es va trobar que els vianants no alteren el seu comportament en presència dels ciclistes, però els ciclistes no s'ajusten adequadament a la densitat dels vianants. L'informe conclou que les col·lisions entre ciclistes i vianants poques vegades es produeixen i que una gran varietat de mesures de regulació i de disseny podria ser pres per garantir la integració segura i eficient dels ciclistes i vianants.

La revisió de l'informe de seguretat dels usuaris vulnerables de L'OCDE [10], va arribar a la conclusió que els conflictes es generen principalment per vies estretes, pistes-bici estretes, velocitats relativament altes dels ciclistes, mala visibilitat, o una considerable diferència d'edat entre els ciclistes i vianants. No obstant això, ha indicat que alguns conflictes eren perillosos, però el perill augmenta quan diversos dels factors esmentats es combinen.

Lyhne [17], director de Política i Estratègia de l'Oficina de Seguretat Viària a WA, va trobar que "aquesta és una àrea en la qual hi ha molt poca recerca i a sobre no hi ha estadístiques, pel que es basa en gran mesura en la informació anecdòtica i la narració de la comunitat sobre els problemes. "No obstant això, es va informar que un ciclista havia estat mort en un via compartida a Austràlia Occidental el 1997 i es va informar d'una sèrie de lesions. Lyhne va suggerir que això era probablement una subestimació de les lesions sofertes per vies compartits.

Franklin [18] va informar de Milton Keynes al Regne Unit que més morts i lesions per bicis es van produir en els vies compartides "Redway" que a les carreteres. A part, es va trobar que els vianants, els gossos i el mal disseny de les vies pot ser una causa important
de col·lisions.

Bicycle_Safety_Almanac

Disclaimer / Grain of Salt

Bike injury stats are under-reported, because the police often don't even bother to write up a report if the cyclist or bicycle isn't seriously injured. As Preston Tyree told us in Dec. 2000, "Most of the statistics for bike injuries are severly undercounted. In Texas for instance, the DPS gets reports only of crashes that involve motor vehicles and in which the motor vehicle sustains enough damage that it has to be towed. (Fatalities do get reported even if the motor vehicle isn't damaged.) While I've spent time in the hospital from crashes on at least three occasions, none of those show on the DPS statistics. However, they do show on the lesser reported TDH statistics only because they were in Travis County where the hospitals report emergency room visits."

Leah Shahum of the San Francisco Bicycle Coalition says its group's 2001 study concluded that police neglect to report bicycle incidents. Out of about 40 injury cases called in to the coalition's hotline, officers didn't file reports one-third of the time. (source)

Cars Kill

Auto crashes are the leading cause of death for people age 6-27, males age 6-23 & 26, and females age 4-6 & 8-28. (4)

Deaths from Cars. Car collisions kill 34,000 people each year in the U.S. (NHTSA, DoT, 2009), and car emissions kill 30,000.

Motorists usually at fault. The NYC group Right of Way says: "After NYC cycling fatalities increased twofold in 1999, police rushed to cover their, er, reputation by claiming (without analysis or supporting data) that cyclists are to blame in 75% of cycling deaths. Right of Way took a closer look. Surprise! The truth is just the reverse, as listed in our report, The Only Good Cyclist (PDF)." According to Right of Way, over 90% of pedestrian deaths in NYC are the fault of drivers. And research from Toronto shows the same thing for car-bike crashes.

Most at-fault motorists who kill cyclists and pedestrians get off the hook. A study by the Silicon Valley Bicycle Coalition shows that three out of four at fault drivers were never even cited for hitting and killing pedestrians. 22% of fatal pedestrian crashes involved hit and run drivers, yet, none of the runaway motorists were found or charged. In New York, 70-92% of drivers were at-fault in killing pedestrians and cyclists, but 74% didn't even get a ticket. (RightOfWay.org, 1999) The story in Austin is similar.

First Car Crash killed a cyclist. The first automobile crash in the United States occurred in New York City in 1896, when a motor vehicle collided with a bicyclist. (Traffic Safety Facts 1996: Pedalcyclists, US DoT; further attributed to Famous First Facts by Joseph Kane)

Veterans almost twice as likely to die. Veterans of the Iraq and Afghanistan wars have a 75 percent higher rate of fatal motor vehicle accidents than do civilians. (Washington Post, 2013)

SUVs. An average SUV or a pickup is more than twice as likely as a car to kill the driver of the other vehicle in a collision, and an SUV is four times as likely to roll over in an accident. (3)

SUV's are deadlier to child pedestrians than passenger cars by about 18%. (NTSA, 2003)

Big pickups kill even more than SUV's. When the average large pickup truck collides with a second vehicle, people in the second vehicle die at a rate of 293 for every 100,000 crashes, according to federal crash statistics. By comparison, large sport utility vehicles kill people in the second vehicle at a rate of 205 per 100,000 crashes; minivans kill at a rate of 104 deaths; and large cars at a rate of 85 deaths. (NYT, July 31, 2003)

Red Lights. This July 2000 article in USA Today has a lot of statistics about cars running red lights (which kill about 800 people a year nationwide).
Cost of Auto Collisions. The economic impact ofmotor vehicle crashes on U.S. roadways has reached $230.6 billion a year—nearly 2.3 percent of the nation's gross domestic product or an average of $820 for every person living in the country—the National Highway Traffic Safety Administration (NHTSA) reports. Using data from the year 2000 (in which 41,821 people were killed, 5.3 million were injured and 27.6 million vehicles were damaged), the agency found that the average readway fatality has economic costs of $977,000, while the costs associated with a critically injured crash survivor surpasses $1 million. The yearly economic costs also include $61 billion in lost workplace productivity; $20.2 billion in lost household productivity; $59 billion in property damage; $32.6 billion in medical costs; and $25.6 billion in travel delay costs. (source)

Austin crashes. The Austin Police Department says that for the first 11 months of 2006, there have been over 30,000 motor vehicle crashes. Of these, something like 14,000 were severe enough that one or more vehicles had to be towed away or someone had to be hospitalized. [Relayed on 14 Dec. 2006 by UTC member Patrick Goetz]

Cycling risk and deaths

Risk of death from cycling compared to driving.

This is difficult to calculate accurately because we don't know the number of bicycle miles traveled in the U.S. annually, because the sources disagree so strongly:

150 billion

Consumer Product Safety Commission "Bicycle Study (PDF)" (doc. #344), 1991. States 67M cyclists riding 15B hours. Frankly, this figure is not very believable.

6 to 21 billion

U.S. Dept. of Trans. / Fed. Hwy Admin. "The Environmental Benefits of Bicycling and Walking", 1993

6.2 billion

Bureau of Transportation Statistics, National Household Travel Survey, 2001

So we'll compare risk at both the 6.2 billion and 21 billion miles traveled levels.
784 cyclists died in 2005 (p. 86). That would make the death rate 0.37 to 1.26 deaths per 10 million miles.

33,041 motorists/passengers died (p. 86) from 3 trillion miles traveled (p. 15), making their death rate 0.11 per 10 million miles traveled.

So cyclists are either 3.4x or 11.5x as likely to die as motorists, per passenger mile. Neither conclusion is very happy.

However, all these figures include people who ride dangerously, such as against traffic, at night without lights, on sidewalks, or through red lights/stop signs without adequately checking cross-traffic. A study in Washington Statefound that 11% cycling fatalities involved wrong-way riding. Subtracting out 11% of the nationwide deaths, we find that cyclists who don't ride against traffic are 3x to 10.2x more likely to get killed than motorists, which is better, but still bad.

More than 80% of fatalities for child bicyclists 14 and under were caused by unsafe riding (riding the wrong way, running signs, etc.) However, I can't subtract out those fatalities, because then I'd be counting some wrong-way fatalities twice, since I already subtracted out wrong-way riding for all cyclists above.

I would like to subtract out fatalities where the cyclist was riding at night without lights, or riding on the sidewalk, or ran a traffic signal, but I can't find the data. If you can find the percent of fatalities (not crashes) caused by these things, please share!

I just found a YouTube video which has interesting conclusions about the relative risk of biking vs. driving, but unfortunately it doesn't cite references or show its work.

(All figures from NHTSA Traffic Safety Facts 2005 (PDF) except where otherwise linked. The BTS gives a slightly different figure for car passenger miles, 2.7 trillion.)

The Risks of Cycling. Ken Kifer has a huge page with lots of stats and analysis. His conclusion is that cycling is not dangerous (because he compares the danger per hour of activity, rather than per mile). Ironically, he was later killed while riding his bike.

Deaths per year. 725, 629, 665, 732, and 693 cyclists died per year in 2004, 2003, 2002, 2001, and 2000 respectively, and were about 89% male. (National Highway Traffic Saftey Administration, and Insurance Institute for Highway Saftey)

Injuries dwarf fatalities. 630 cyclists died in the U.S. in 2009, vs. 51,000 who were injured. (Treehugger, 2009)

Health benefits of cycling outweigh the risks? Various studies from Europe, where the roads are much safer than in the U.S., show that the health benefits of cycling add years to life on average, even after accounting for the increased risk of dying on the road. U.S. cycling advocates like to quote these studies without ever bothering to mention (or perhaps even noticing) that the analyses were done on completely different populations. As I write this (in 2013), I know of no study in the U.S. that comes to the same conclusion — and it's doubtful that one could, since cycling in the U.S. is 3-10x more dangerous than driving.

Cyclists are 2% of road deaths & injuries. The 761 cyclists killed in 1996 accounted for 2% of traffic fatalities, and the 59,000 cyclists injured made up 2% of all traffic injuries. (5)

Cyclists accounted for 12% of all nonmotorist traffic fatalities in 1996. Pedestrians accounted for 86 percent, and the remaining 2 percent were skateboard riders, roller skaters, etc. (5)

Cycling deaths higher in 70's & 80's. The number of cyclist fatalities in 1996 was 19% lower than the 941 fatalities reported in 1986. The highest number of cyclist fatalities ever recorded was 1,003 in 1975. (5)

Cyclists killed since 1932. Nearly 44,000 cyclists have died in traffic crashes in the United States since 1932 &emdash; the first year in which estimates of cyclist fatalities were recorded. (5)

Cyclists killed IN 1932. The 350 cyclists killed in 1932 accounted for 1.3% of the 27,979 persons who died in traffic crashes that year. (5)

Note this colection of reports about cyclist injuries & fatalities by the U.S. Dept. of Transportation. Also note their Fatality Analysis Reporting System, which covers all road users.

Where cyclists die or crash

U.S. cyclists are three more likely to be killed than German cyclists and six times more than Dutch cyclists, whether compared per-trip or per-distance traveled. (Reuters, Aug. 28, 2003, by Maggie Fox)

Saftey in numbers. Worldwide, the greater the concentration of cyclists, the lower the fatality rate. That is, the more cyclists, the safer it is to cycle. By converse, the fewer cyclists, the more dangerous it is to cycle. This is a main reason why cyclists oppose helmet laws, because they're shown to reduce the number of cyclists, and that makes cycling more dangerous for those who remain (whether they wear a helmet or not). The Safety in Numbers principle was proved even within this country, as NYC has a similar rate of cycling fatalities per capita compared to the rest of the country, but nearly four times as many people bike or walk to work in NYC compared to the rest of the U.S. (Bicyclist Fatalities and

Serious Injuries in New York City PDF, 1996-2005)

Cyclist fatalities occurred more frequently in urban areas (66%), at nonintersection locations (67%), between the hours of 5 p.m. and 9 p.m. (30%), and during the months of June, July, and August (36%). (NHTSA, 2004)

89% of fatal bike crashes in NYC occurred at or within 25 feet of intersections.("Bicyclist Fatalities and Serious Injuries in New York City", PDF, NYC government, 2005)

33% of cycling fatalies were at intersections. (Treehugger, 2009)

The most common bike-car collision is a driver failing to yield at a stop sign.(Bicycling Life, 1995)

Study shows the most common kinds of bike-car collisions. (Bicycling Life, 1995)

Riding the wrong way (against traffic) is three times as dangerous as riding the right way, and for kids, it's seven times as dangerous. (Bicycling Life, 1985-89)

Riding on the sidewalk is several more times more dangerous than riding in the street. (William Moritz, 1998) Another study says it's twice as dangerous. (Bicycling Life, 1985-89)

Most deaths on major roads. Fifty-seven percent of bicycle deaths in 1999 occurred on major roads, and 37 percent occurred on local roads. (6)

Streets with bike lanes have a significantly lower crash rate then either major or minor streets without any bicycle facilities (38 and 56% respectively). (William Moritz, 1998)

Streets with bike lanes are safer than those without. Article also has information about the safety of bike paths. (BicyclingInfo.org, 2004)

Texas leads cycling deaths. Texas ranks 14th in number of cyclist fatalities per capita. (5)

Four states lead cycling deaths. Four states (California, Florida, New York, and Texas) accounted for 43% of bicycle deaths in 1999. (6)

Austin stats. Statistics specific to Austin are listed below.

When cyclists die

Many deaths occur at night. In 1999, 39% of deaths on bicycles nationwide occurred between 6 p.m. and midnight. (9) (more on when cyclists died)

Age of cycling victims

Child cyclists killed. Cyclists under age 16 accounted for 24% of all cyclists killed in 2002. (Insurance Institute for Highway Saftey) Cyclists under 16 were 33% of all cyclists killed and 45% of those injured in traffic crashes in 1996. In comparison, cyclists under age 16 accounted for 47 percent of all those killed in 1986. (5)

Average age of killed/injured cyclists. In 1996 the average age of cyclists killed in traffic crashes was 31 years, and the average age of those injured was 23.2 years. In 1986, the average age was 23 years. (5)

Non-Fatal Injuries

Injuries dwarf fatalities. 630 cyclists died in the U.S. in 2009, vs. 51,000 who were injured. (Treehugger, 2009)

Risk of injury from cycling compared to driving. 45,000 cyclists vs. 2.4M motorists were injured in 2005, from traveling 6.2 billion milies and 1.6 M-M miles respectively, yielding 7.3 injuries per million miles for cyclists and 1.5 injuries per million miles traveled for motorists, making cyclists 4.9 times more likely to be injured per mile of travel. NHTSA Traffic Safety Facts 2005 (PDF)

Testosterone kills. Male riders are seven times more likely to end up a fatality than a female cyclist, and four times more likely to be injured. (Treehugger, 2009)

Kinds of crashes. Falls account for 59% of all crashes, running into a fixed object 14%, moving motor vehicles were involved in 11%, and another bicycle in 9%. (Moritz, 1998)

One in every 20 bicyclists is injured annually. (Bicycling Magazine 1987)

A bicyclist can expect a minor injury every three years and a more serious one every fifteen. (Bicycle Forum 1978)

Bike Lanes

We have a separate page about the safety of bike lanes.

Helmets

Head injuries going up with increased helmet usage. Between 1991 and 2001 two things happened: helmet use among cyclists soared, and head injuries soared along with it. Head injuries among cyclists went up by 10% on a simple basis, but when we factor in the dramatic decrease in the number of cyclists during that period, head injuries effectively went up by 51%. (New York Times, 2001) Incidentally, from this we can figure that there was a 27% reduction in cycling. (e.g., 1000 injuries + 10% = 1100 injuries; 1100 injuries ÷ 1.51 = 728 injuries; 1000 to 728 is a ~27% reduction.)

Head injuries didn't go up because helmets turned would-be fatalities into simple injuries. One reader complained that the reason that head injuries went up as helmet use went up was that fewer cyclists died as a result of wearing helmets, and those who didn't die were simply injured instead, making the head injury stats go up. It's a nice theory, but it's dead wrong. Cyclist fatalities have shot straight up with increased helmet use, just as cycling injuries have. Cyclist deaths went from 843 to 728 from 1991 to 2001. (Traffic Safety Facts 2001, PDF, p. 17) However, as per the NYT article above, the number of people biking went down 27% during this period, so we would expect the 843 deaths in 1991 to shrink to 615 deaths in 2001 even without increased helmet use. But as helmet use surged, deaths didn't drop to 615, they actually went to 728. That's effectively an 18% increase in the number of cycling deaths as helmet use surged. And for those who complain that we can't look at specific years because of year-to-year variance, let's compare the five-year-average number of deaths from 1987-1991 and 1997-2001. That gives us 879 to 750 deaths, or an effective increase in biking deaths of 17% as helmet use surged.

Helmet use went from 18% in 1991 to 50% in 2008. (Consumer Product Safety Commission, 1999)

Helmet use and opinion survey. (NHTSA, 2008)

The Bicycle Helmet Research Foundation has lots of information about helmet efficacy.

DWI/DUI

24% of cyclists killed had a BAC of 0.08+. (Treehugger, 2009)

DWI & crashes. Alcohol involvement -- either for the driver or the cyclist -- was reported in more than one third of the traffic crashes that resulted in cyclist fatalities in 1996. In 28% percent of the crashes, either the driver or the cyclist was intoxicated, with blood alcohol concentrations (BAC) of 0.10 grams per deciliter (g/dl) or greater. Lower alcohol levels (BAC 0.01 to 0.09 g/dl) were reported in an additional 8.3%. Nearly one fourth (23.9%) of thecyclists killed had a BAC of 0.01 g/dl or greater, and nearly one-fifth (17.9%) were intoxicated. (5)

BAC lowered by .02 per hour. Alcohol is removed from the body at approximately .02 per hour. Useful for estimating blood alcohol level at the time of a collision, if the test is administered hours after the collision. (unattributed)

Cell Phones & Texting

The risk of having a car crash while using a cell phone is the same as that while driving drunk. (read the article)

Cell phone use is just as dangerous as driving drunk, and hands-free phones are no safer than handheld phones. (Bloomberg, July 2006)

46% of 17-year-olds text and drive, as do 52% of those over 18. Texting is a bigger impairment than drunk driving. (CBS, 2011)

DWD (Driving While Drowsy)

Driving while Drowsy. Many fatalities are caused by motorists who fall asleep at the wheel. And when sleeping drivers injure or kill cyclists, and then often don't face any penalties (For example, see the case of Jason Boardman & Cameron Cooper.) More than half of Americans admit to driving while drowsy.

Speeding & Speed

Danger to peds increases dramatically with small increase in speed. A ped hit by a 30mph car has a 20% chance of dying, but bump the speed up to 40mph and the chance of death rockets to 70%. (Consumer Reports 2011)

The Wisconsin State Journal points out that everyone is focused on the danger of drunk driving, while speeding is potentially an even bigger problem.

Yes, "everybody does it" - or at least 71 percent of licensed drivers, according to the American Automobile Association. Nationwide, 13,713 died last year [2003] in accidents caused by speeding. That's about 400 more fatalities than were caused by drunken driving in 2002.

Moreover, while the number of drunken driving fatalities has fallen 37 percent nationwide in the past 20 years, the number of fatal accidents has been rising steadily in the 22 states that have raised their speed limits to 70 mph or more since 1995. Safety experts say the risk of death in a crash doubles for every 10-mph increase in speed.

Some Western European nations have already recognized that speeding can be just as dangerous as drunken driving. In England, for example, the government launched a campaign: "Kill your speed - not a child." It also installed lots of roadside cameras to photograph and tickets speeders. (Alas, photo radar is illegal in Wisconsin.) The result of the British campaign: a 50 percent reduction in speeding-related fatalities. (full article)

Stats specific to Austin

A good collection of statistics regarding car-bike collisions in Austin is available on the bicycle section of the City's Safe Communities page. Here are some excerpts from their report (percentages have been rounded):

An average of 2.4 cyclists dies each year in Austin. (From 1980-96, the fewest in any one year was 0, and the most was 7.)
Of the 41 cyclists killed between 1980-1996, 39 were struck by motor vehicles. (>95%)
80% of the victims were age 39 or under.
From 1990-96, 12 cyclists were killed, but another 1,222 were injured. Of those injured, around 15% suffered incapacitating injuries (i.e., needed help leaving the scene of the crash).
Surprisingly, from 1994-96, nearly 78% of cyclist injuries occurred during daylight hours, which a huge chunk of the total (42%) occurring during just the four-hour period of 4-8pm.
However, although nighttime collisions are more rare, they're also more dangerous. While only 22% of all injuries occurred at dusk or at night, 46% of fatal and incapacitating injuries did.
From 1994-96, 57% of bicycle injuries either occurred at intersections or were intersection-related. Another 16% occurred at commercial or residential driveways. Since driveways are really a kind of intersection, ~73% occurred at some kind of intersection.
Bicyclists were judged to be in violation of the law in 62% of crashes from 1994-96.
Of the 180 cases in which the police noted motorist-related crash factors, citations were issued to motorists only 35% of the time. (1994-96) For example, in the 39 cases in 1998 where drivers caused or contributed to bike collisions by failing to yield the right of way, citations were issued in only 14 cases.
While most collisions occurred on city streets, those occurring on the frontage road of I-35 or on county roads were about twice as likely to be fatal or incapacitating (probably due to the increased speed of automobiles on these roads).

Other Websites with Statistics

Our General Almanac page. The page you're looking at covers safety stats exclusively. We also have a General Almanac page that covers other bicycle & transportation stats.

bikexprt.com has a mountain of academic research into bike safety.

Ken Kifer has a long article about bicycle safety with a moutain of statistics. [Ironically, Ken was killed by a drunk driver while cycling in Sept. 2003.]

Sources not already linked above

(2) From the Eugene/Springfield (OR) Bicycle Map (1998?), which further credits the American Lung Association, Oregon Traffic Commission, Association of Commuter Transportation, American Automobile Association, and City of Eugene.
(3) ChangingTheClimate.com
(4) "Motor Vehicle Crashes as a Leading Cause of Death in 1994", U.S. Dept. of Transportation, 1998
(5) Traffic Safety Facts 1996: Pedalcyclists, U.S. Dept. of Transportation.
(6) Insurance Institute for Highway Safety
(9) USA Today, online edition, 10-22-01, attributed to the Insurance Institute for highway safety. [link to article]

European studies showing that the health benefits of cycling add years to life on average, even after accounting for the higher risk of dying on the road. (Not valid for the U.S. where the roads are more dangerous.)

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Hillman, M., Cycle Helmets, The Case For and Against, 1993, Policy Studies Institute Report 752, ISBN 0-85374-602-8