

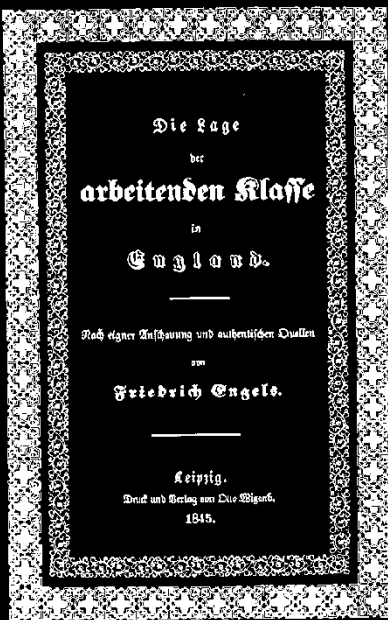
# Roads, Casualties and Public Health: The Open Sewers of the 21<sup>st</sup> Century

Danny Dorling, University of Sheffield

PACTS' 21<sup>st</sup> Westminster Lecture and ETSC's 12<sup>th</sup> European Transport Safety  
Lecture, One Birdcage Walk, London, 23<sup>rd</sup> November 2010

# My argument this evening

Every century comes with a major public health warning about the harm that we inflict on ourselves. In Britain in the nineteenth century it was the diseases we spread by tolerating open sewers. In the twentieth century it was tobacco that we slowly learnt to love then fear. In the twenty-first century it is the way we tolerate how cars are allowed to travel on our roads



# Plan von Manchester und seinen Vorstädten

# Manchester 178 years ago



1. die Börse.
2. die alte Kirche.
3. das Arbeitshaus.
4. der Armenknochenhof
- Zwischen Beiden der Liverpooler & Londoner E.B. Hof.
5. St. Michael's Kirche.
6. Scotland Bridge über d. Irk.
- Die Strasse von 2 nach 5 heisst Long Millgate.
7. Ducie Bridge über d. Irk.
8. Little Ireland.

**Little Ireland**  
From:

“The Condition of the  
Working Class of  
England”, Friedrich  
Engels, 1845

who went on to  
observe....

Marx and Engels Collected  
Works: Volume 04, 1844-45  
<http://www.marxists.org/archive/marx/works/cw/volume04/index.htm>

“Map of Manchester”

Das commercielle Viertel ist zur Unterscheidung von der linken zur rechten Hand abwärts schaltet

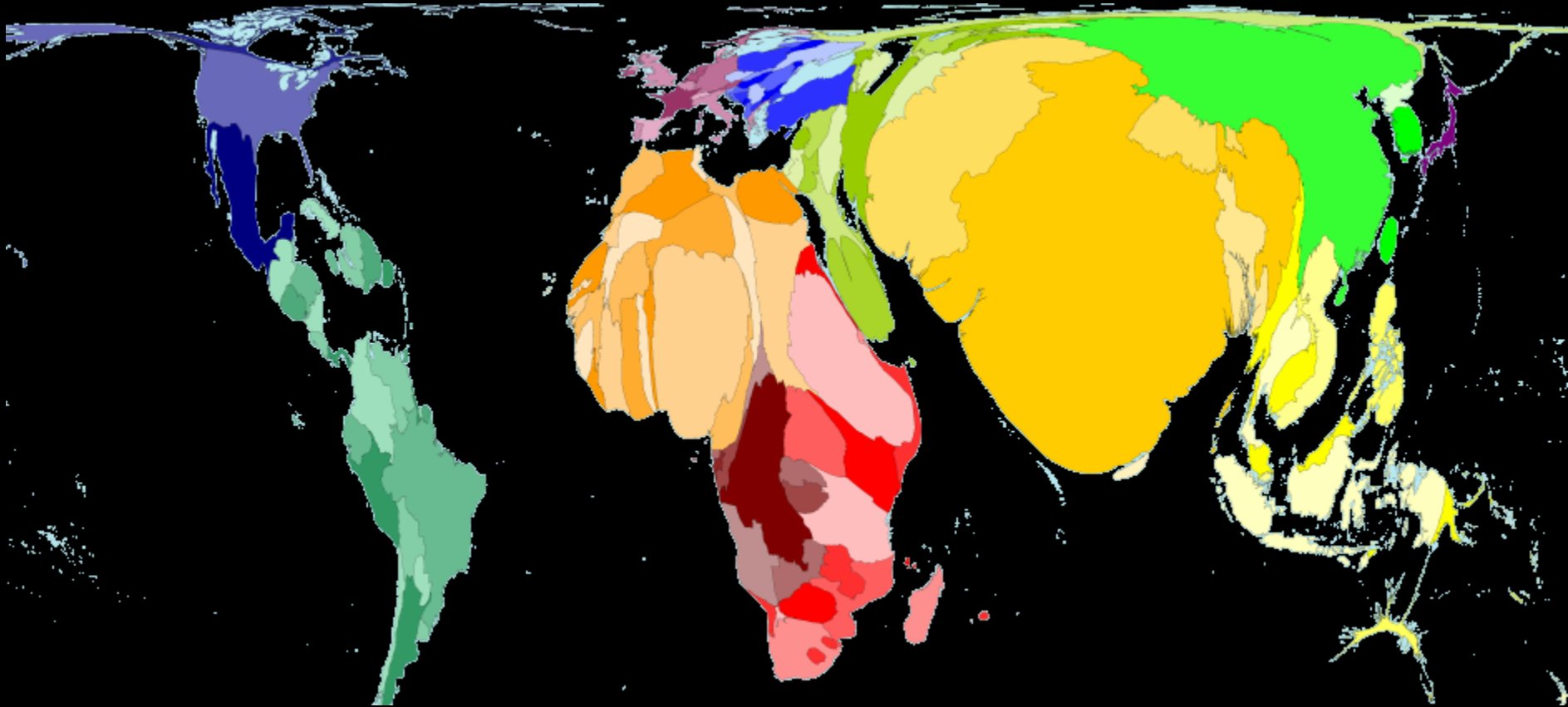
Map of Manchester

Danny Dorling PACTS Annual  
Lecture 23/11/2010

## A German Tourist in 1842, writes...

“As I passed through the dwellings of the mill-hands in Irish Town, Ancoats, and Little Ireland ... found a whole street following the course of a ditch, because in this way deeper cellars could be secured without the cost of digging, cellars not for storing wares or rubbish, but for dwellings for human beings. *Not one house of this street escaped the cholera.*”

# Children suffering diarrhoea (today)



82 million aged 0-5

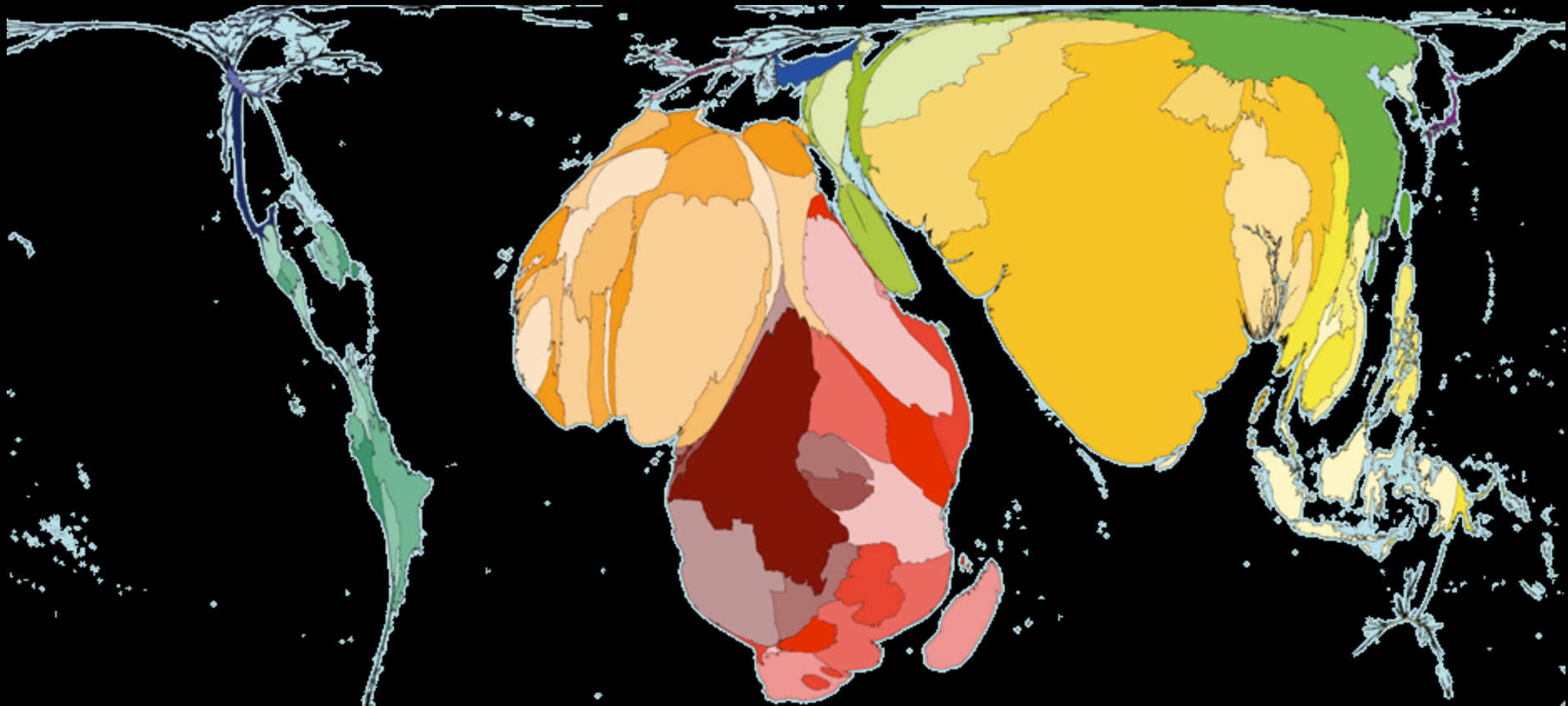
# We know about sewers – we led the way in public health, because we had to:

Manchester's life expectancy from 1801 to 1850 was the lowest ever seen recorded (bar pandemic), calculated at 25.3 years, affecting a population of 235,000 people in 1841 (\*table 3)

- In Liverpool registration district itself, life expectancy in the 1880s was only 29 years of life, some 19 years lower than the 48 years recorded then in the affluent Clifton district of Bristol (ibid, table 2). In Glasgow in earlier years similarly low rates as in Liverpool were recorded, as low as age 27 around 1840 (ibid, table 5).

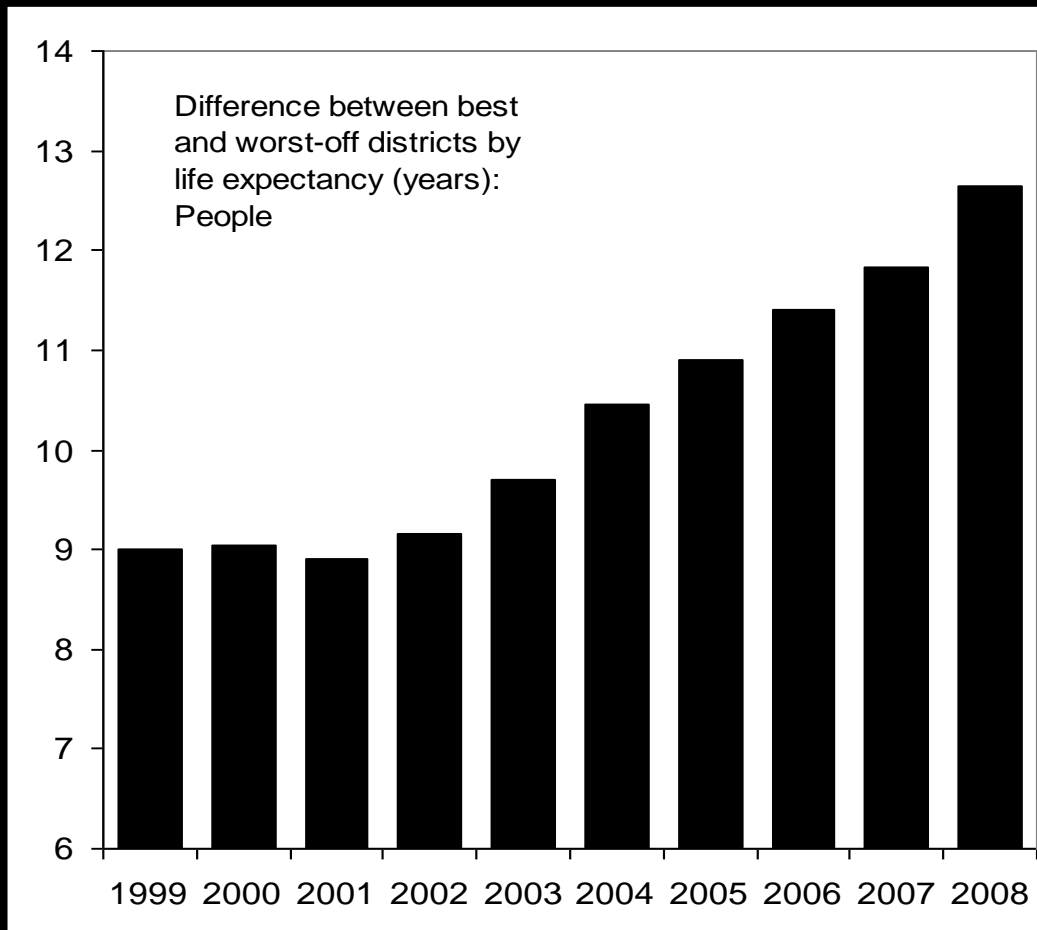
\*Szreter, S. and Mooney, G., 1998, Urbanization, mortality, and the standard of living debate: new estimates of the expectation of life at birth in nineteenth-century British cities, *Economic History Review*, 51, 1, 84-112

# People dying with diarrhoea (now)



1,871,441 people ,all ages each year

# In Britain the inequality gap is now 12.4 years, despite having dealt with sewage by today



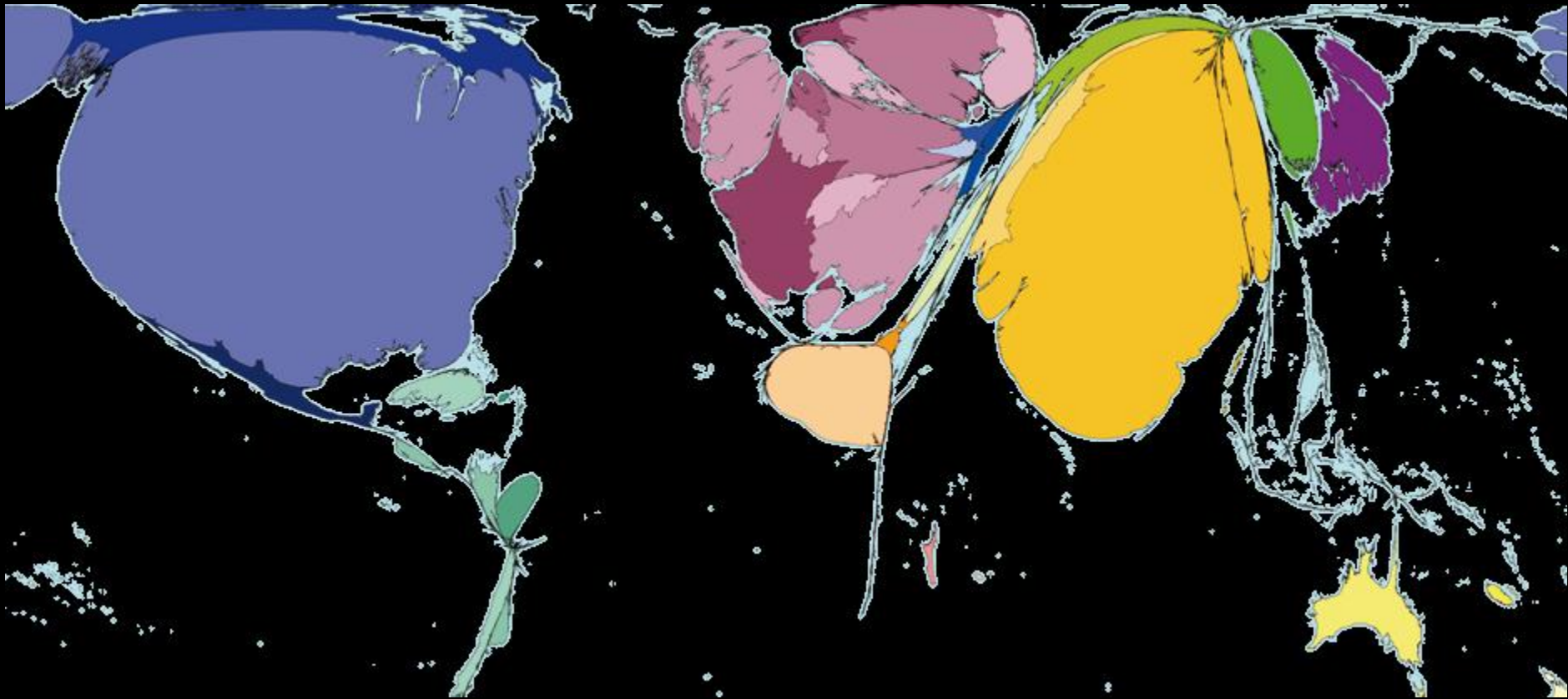
Now = life expectancy between extreme districts by 2009 ... (was 12.45 in 2008 )

See: Thomas, B., Dorling, D. and Davey Smith, G. (2010). Inequalities in premature mortality in Britain: observational study from 1921 to 2007, BMJ, Friday 23rd July.

[http://www.sasi.group.shef.ac.uk/publications/2010/ThomasDorlingDaveySmith2010\\_BMJ.pdf](http://www.sasi.group.shef.ac.uk/publications/2010/ThomasDorlingDaveySmith2010_BMJ.pdf)



It took 100 years to deal with sewage:  
People dying with Polio now



Only **831** people a year and falling rapidly

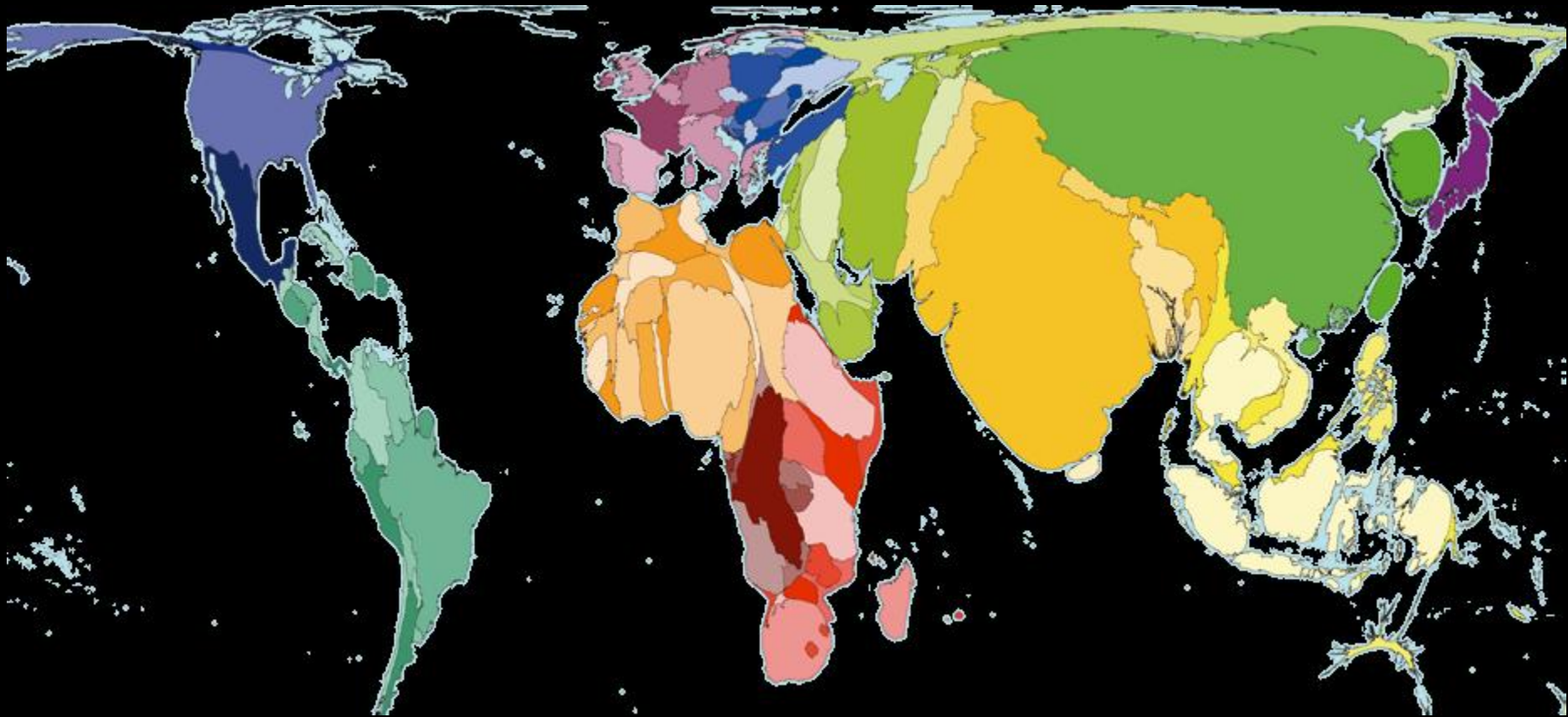
# For life expectancy inequality in Britain

We now have to return to the 1880s to find greater gaps than those found today. The lowest life expectancy recorded in the country then was just thirty-six years in Liverpool. In Bristol it was then ten years higher.

(Szreter and Mooney table 1)

Then the cause was sanitation, unemployment and appalling employment. Now a different pandemic:

# People dying on the roads now



1,195,339 people a year

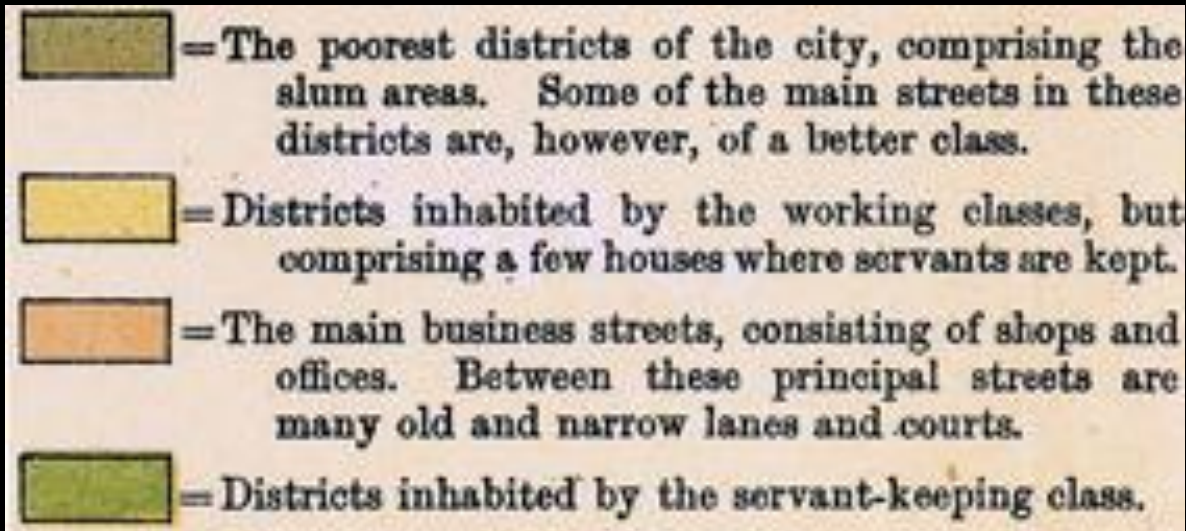
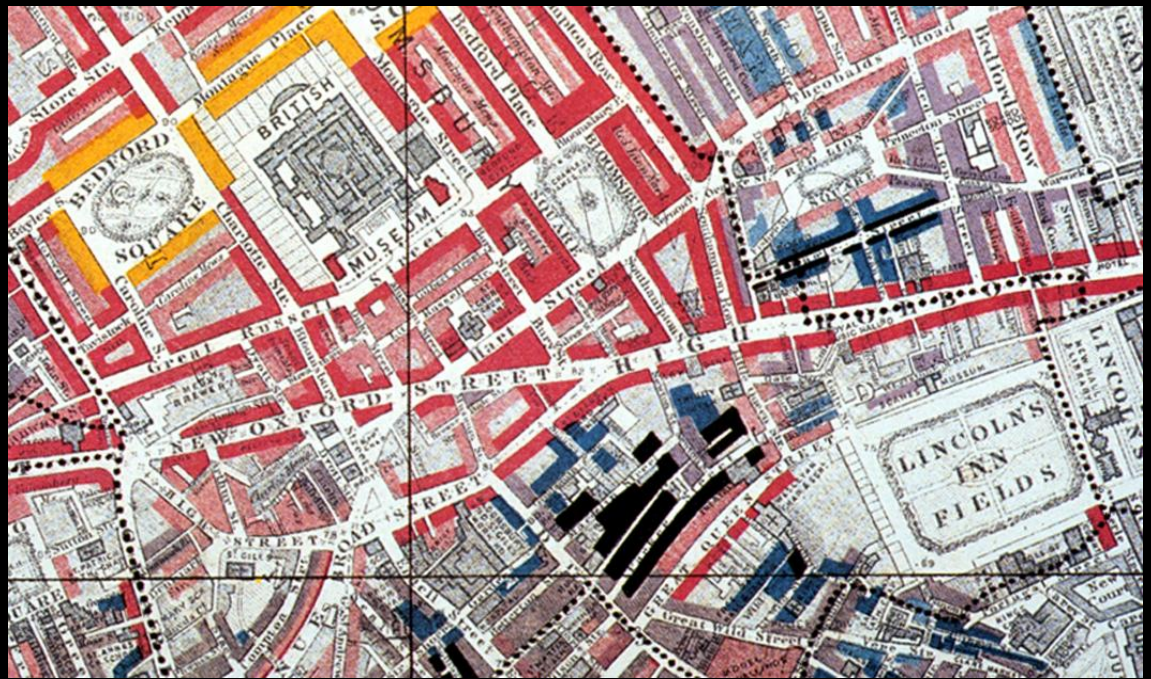
# Poverty, sanitation, health, inequality - pioneers:

- **Friedrich Engels** (communist) 1820-1895
- **Charles Booth** (philanthropist) (1840-1916)
- **Beatrix Potter** (later Webb) (1858-1943)
- **Seebohm Rowntree** (Quaker) (1871-1954)
- **Richard Doll** (epidemiologist) (1912-2005)
- **and Peter Townsend** (sociologist) (1928-2009)

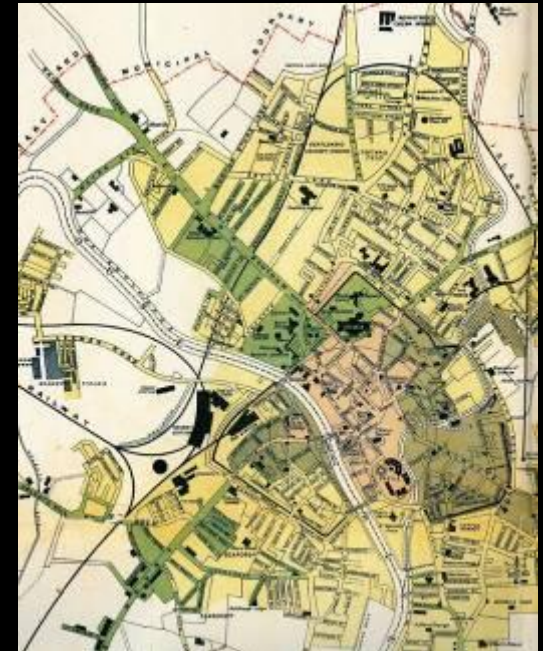


But still we have to explain:

“Why income inequality is of relevance to all Londoners, especially at a time when the capital is not only still recovering from the recession but also facing severe cuts in public sector spending”



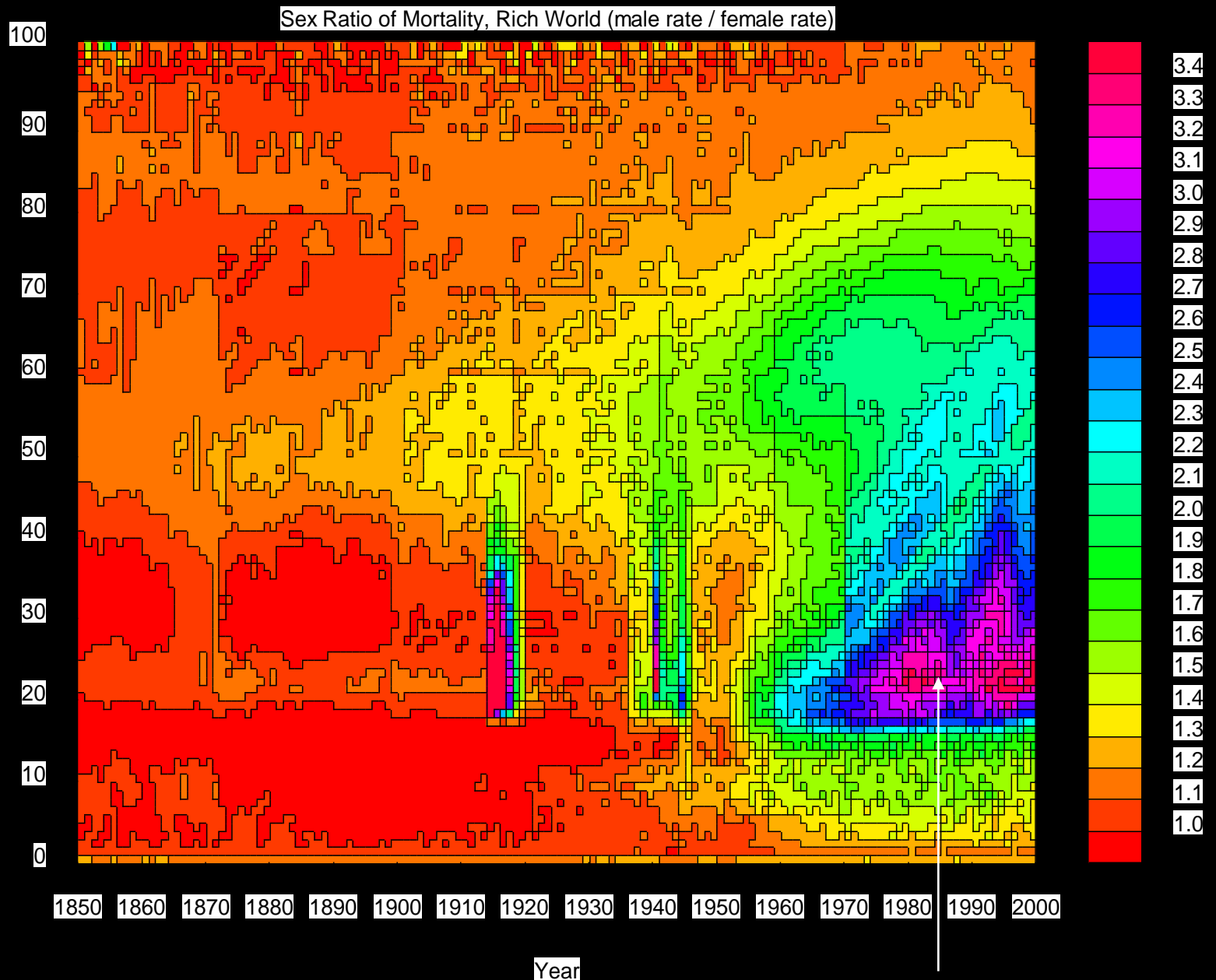
1 in 10 of whose babies died in 1901 because they tolerated poverty  
by 1901 we were finally learning about germs and sewage



And we now have to explain that poverty, inequality and disrespect kills. In almost exactly the same way as we had to explain that smoking kills

The smoking cloud shown here of men dying so much more often in early old age in the 1970s than did women.

(seen in the record of how many men die each year of each age as compared to women in all rich countries)



If we turn to today we find a new crisis

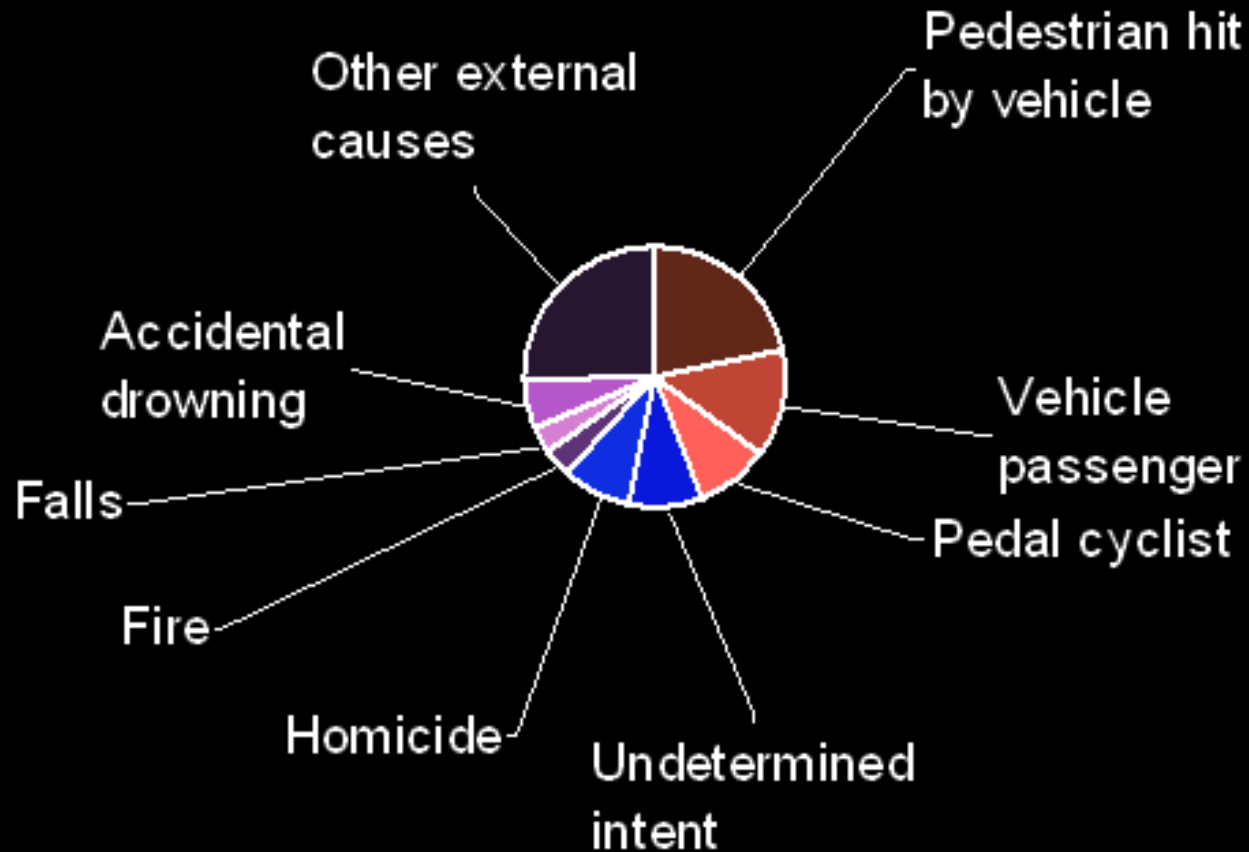
“In June 2010 the Department for Communities and Local Government published what is likely to become one of the most infamous documents of the economic depression/recession. It was titled: 'Local government contribution to efficiencies in 2010/11’”

(Dorling and Thomas, forthcoming, “Bankrupt Britain” Atlas, Bristol :Policy Press – the source for all of the charts which now follow – based in turn on mortality data for 2006-2007 by cause )

**Roads trap affluent children in their homes and are the main site of killing of poorer children. What is key is how large this contribution to death has become:**



# 2006–07 external causes of death of 5 to 10 year olds, Britain:

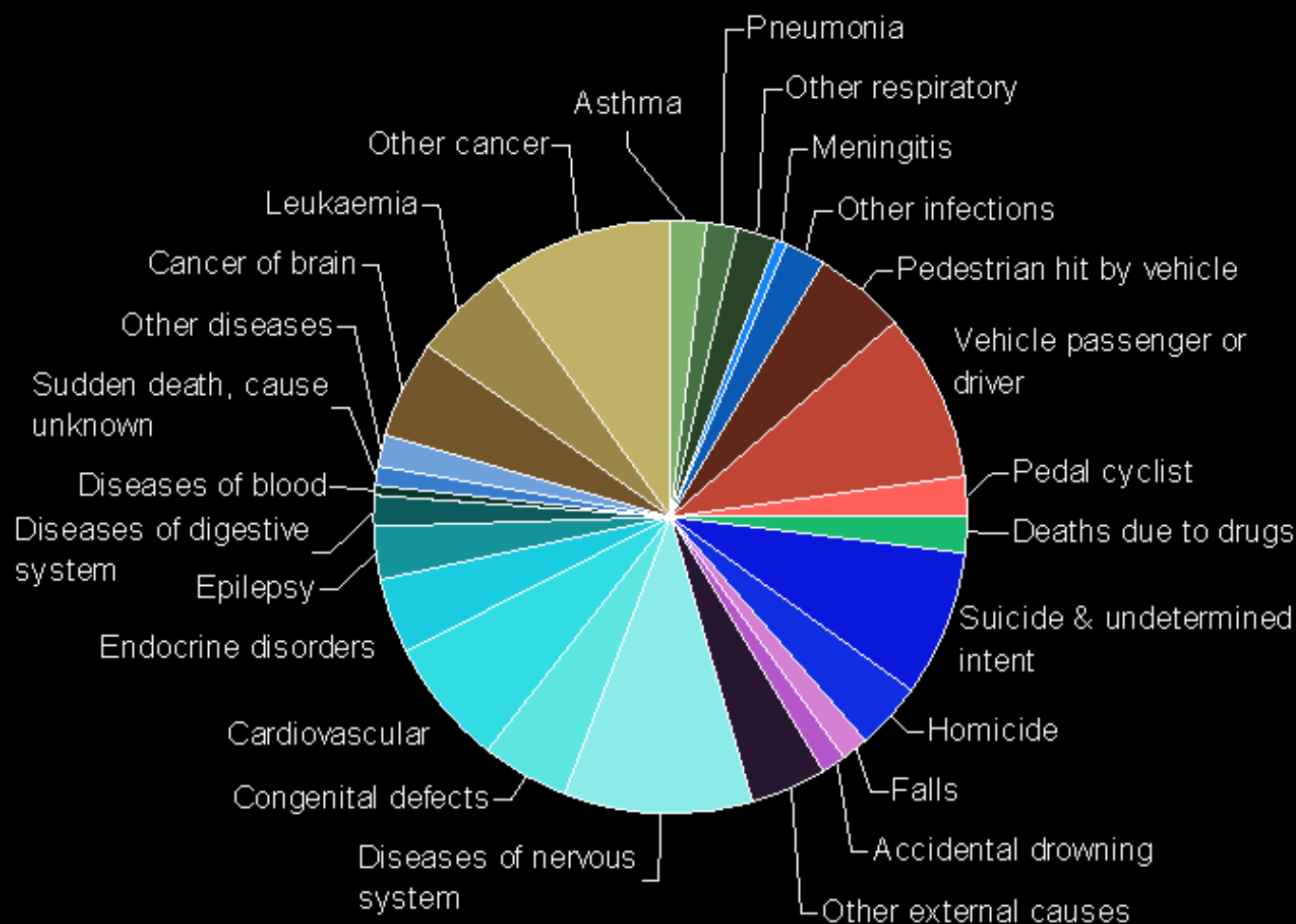




# We reveal our ignorance in our priorities

“...the cuts this document specified will result in more people, and especially young children, being killed. That is because road safety funding is to be cut by £37 million: 'Road safety funding - £37.797m. £20.592m is proposed to be removed from road safety revenue grant (paid out via area based grant) in the last four months of 2010/11 and £17.205m road safety capital grant originally due to be paid in May. This represents a reduction of 27 per cent in the revenue grant and all of the capital grant.’” (Dorling and Thomas, forthcoming, 2011)

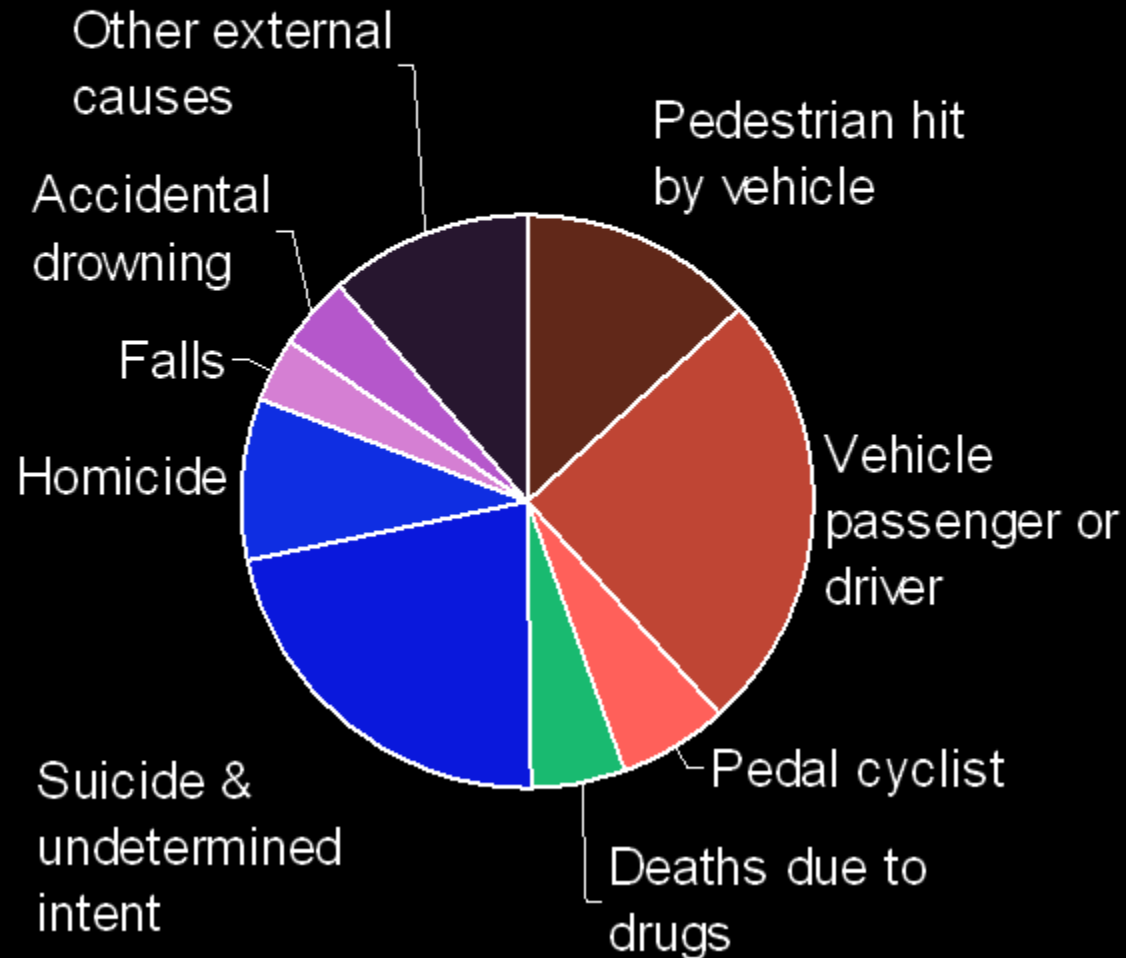
# 2006–07 all causes of death of 11 to 16 year olds, Britain



We need to know what to **fear** most

We are now so protective of very young children – those aged 5 to 9 – that more die due to disease today than as pedestrians. However, dying as a pedestrian has been the greatest threat to children aged 5 to 9 in Britain for most of the last two decades. Still, by age 10, car drivers are the greatest danger to children. This is still found today when all risk categories are compared.

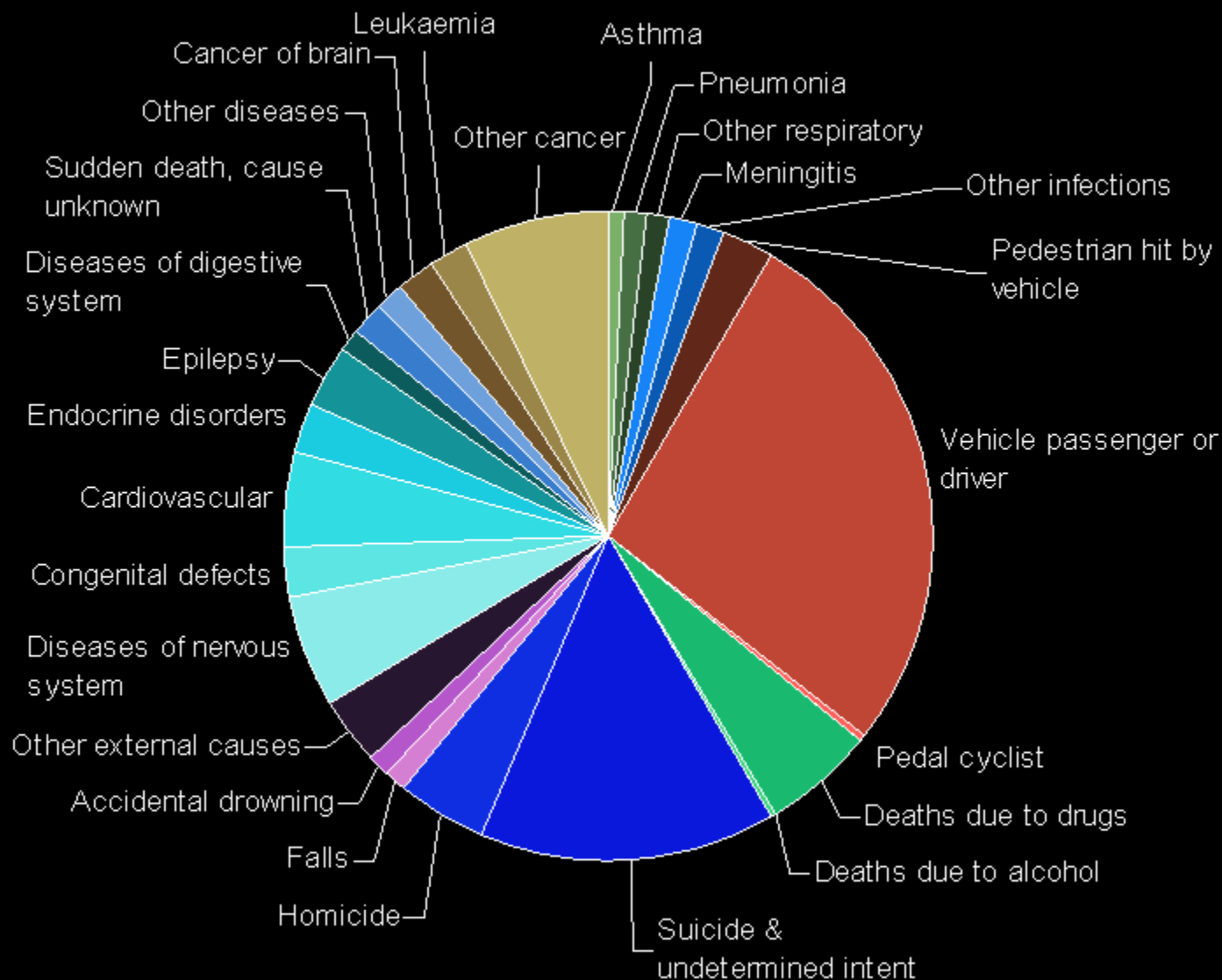
# 2006–07 external causes of death of 11 to 16 year olds, Britain



The threat reduces our **freedom** to move as children, we become more socially isolated

By the onset of adulthood the car and a small number of cases of suicide together account for half of all deaths at these young ages: nine deaths a week of 17, 18 and 19 year olds from these causes alone, almost all due to cars and their drivers. The numbers of deaths per week from such causes continues to rise throughout young adults' twenties, only falling relative to other risks when these young adults reach their late thirties

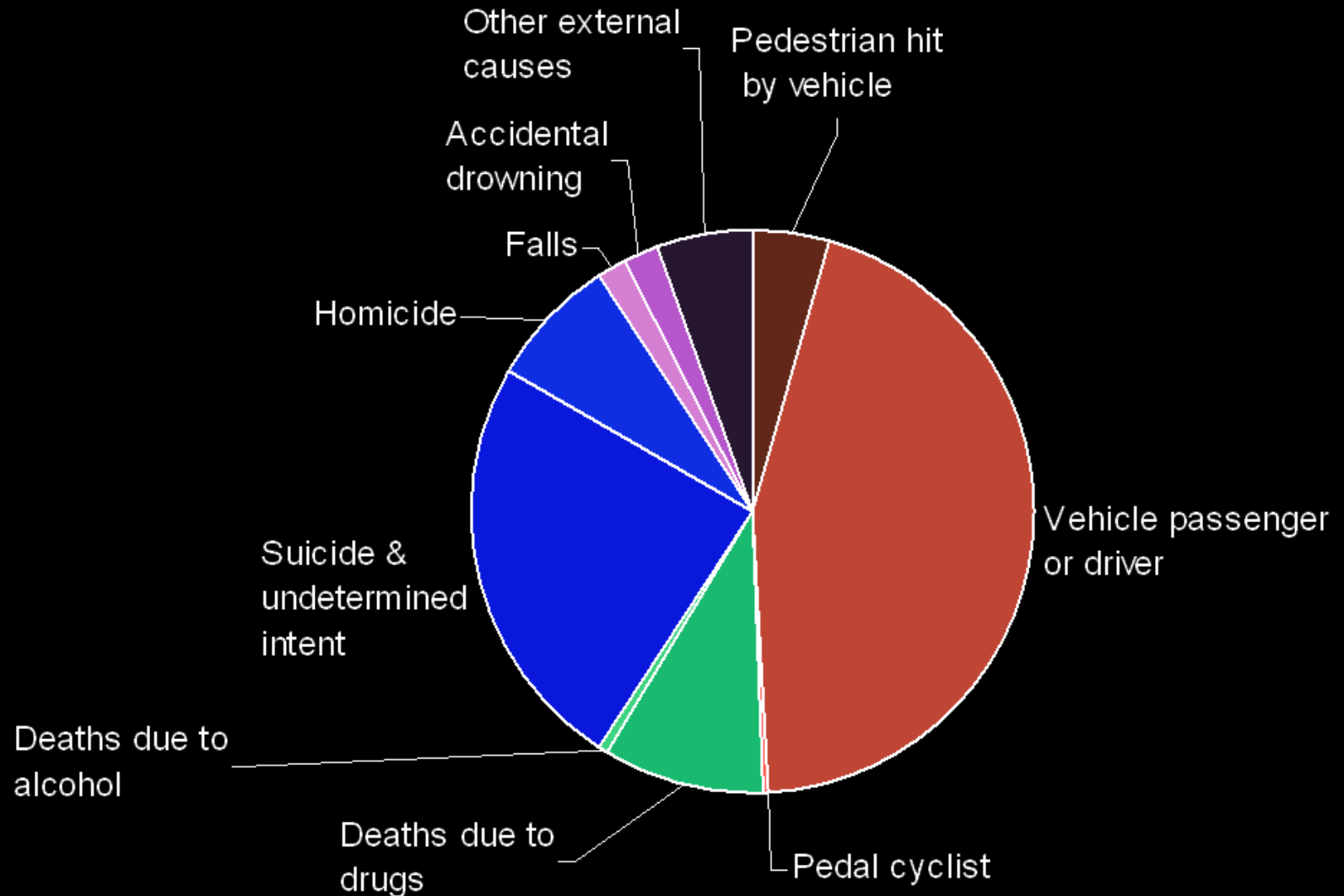
# 2006–07 all causes of death of 17 to 19 year olds, Britain



# The threat is **not diminishing**

Around 30,000 people of all ages are killed or seriously injured on roads in Britain every year. In 2008 some 27,855 thousand cars were registered to be driven on the country's roads. That rose slightly to 27,868 during 2009 (partly with government encouragement for new car buying with a 'scrapage scheme'). Very young adults now cycle less.

# 2006–07 external causes of death of 17 to 19 year olds, Britain



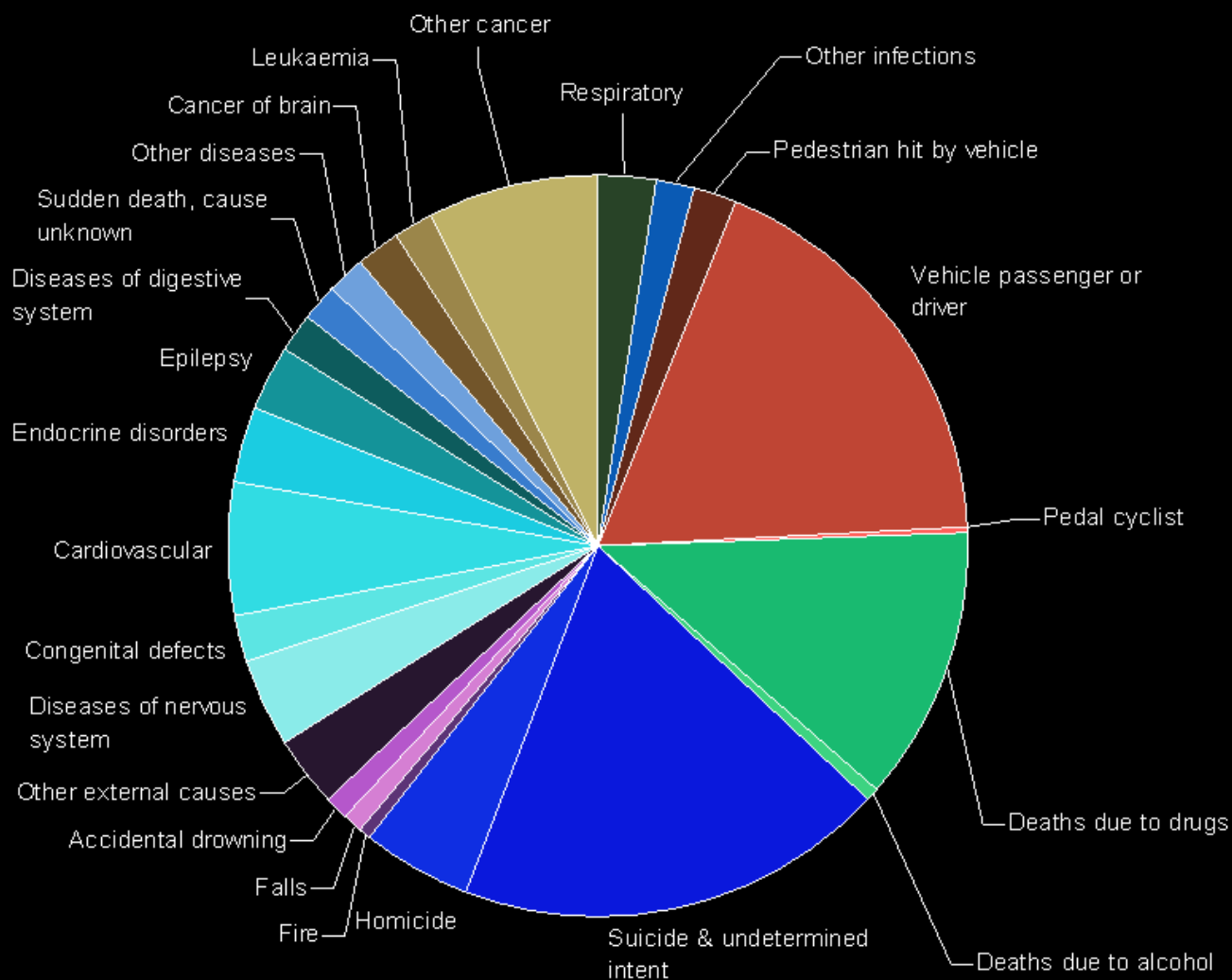


Public health measures have begun to be introduced **very slowly**:

“We want to encourage highway authorities to introduce, over time, 20 mph zones or limits into streets which are primarily residential in nature and into town or city streets where pedestrian and cyclist movements are high, such as around schools, shops, markets, playgrounds and other areas, ...

We want to draw attention to the initial evidence from the trial of wide area signed-only 20mph limits in Portsmouth, and want to make clear that 20 mph limits over a number of roads may be appropriate elsewhere.” (DfT circular December 2009)

# 2006–07 all causes of death of 20 to 24 year olds, Britain



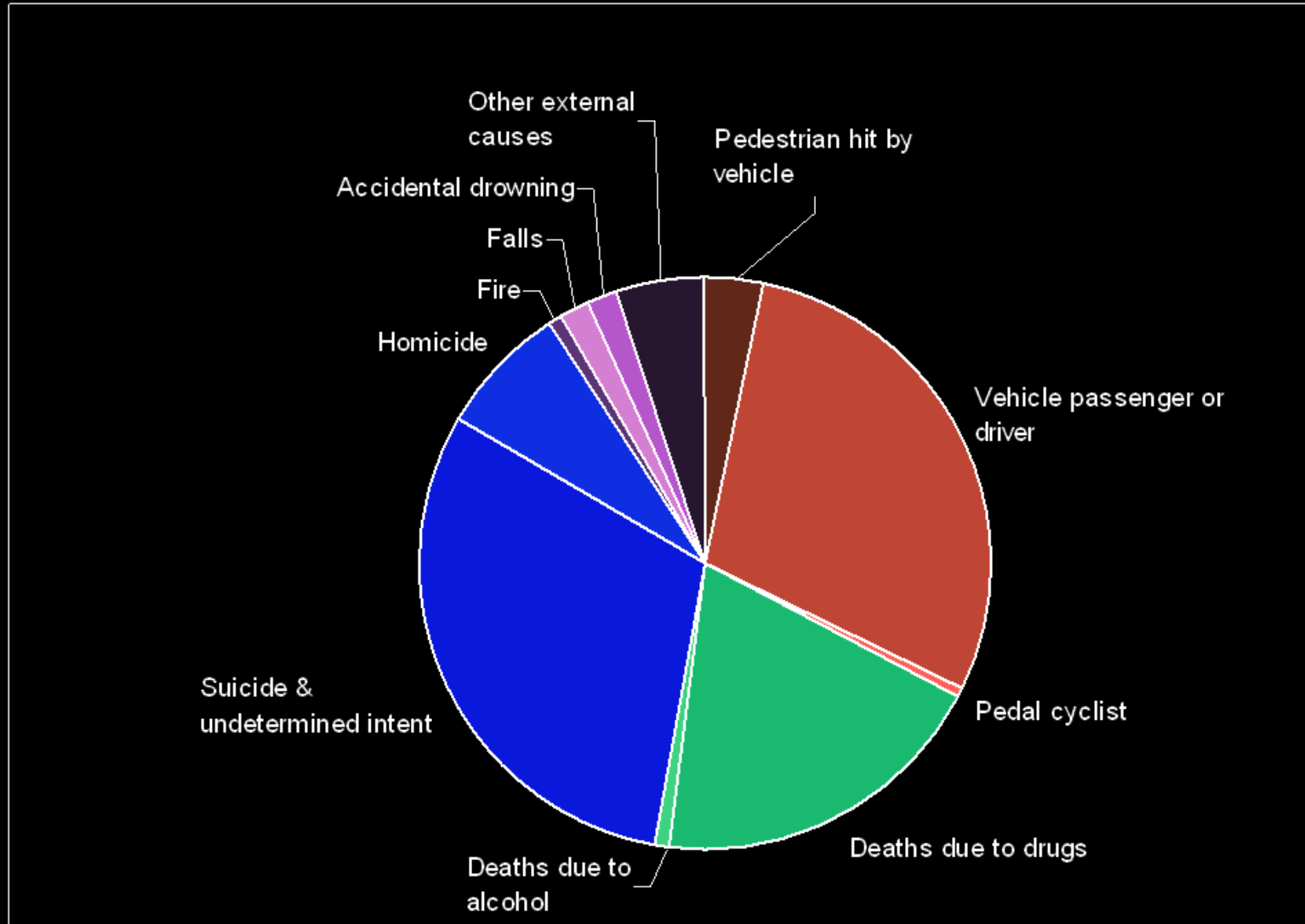
# Despite now having the medical evidence

“The introduction of 20 mph zones was associated with a 41.9% (95% confidence interval 36.0% to 47.8%) reduction in road casualties, after adjustment for underlying time trends. The percentage reduction was greatest in younger children and greater for the category of killed or seriously injured casualties than for minor injuries. There was no evidence of casualty migration to areas adjacent to 20 mph zones, where casualties also fell slightly by an average of 8.0%”

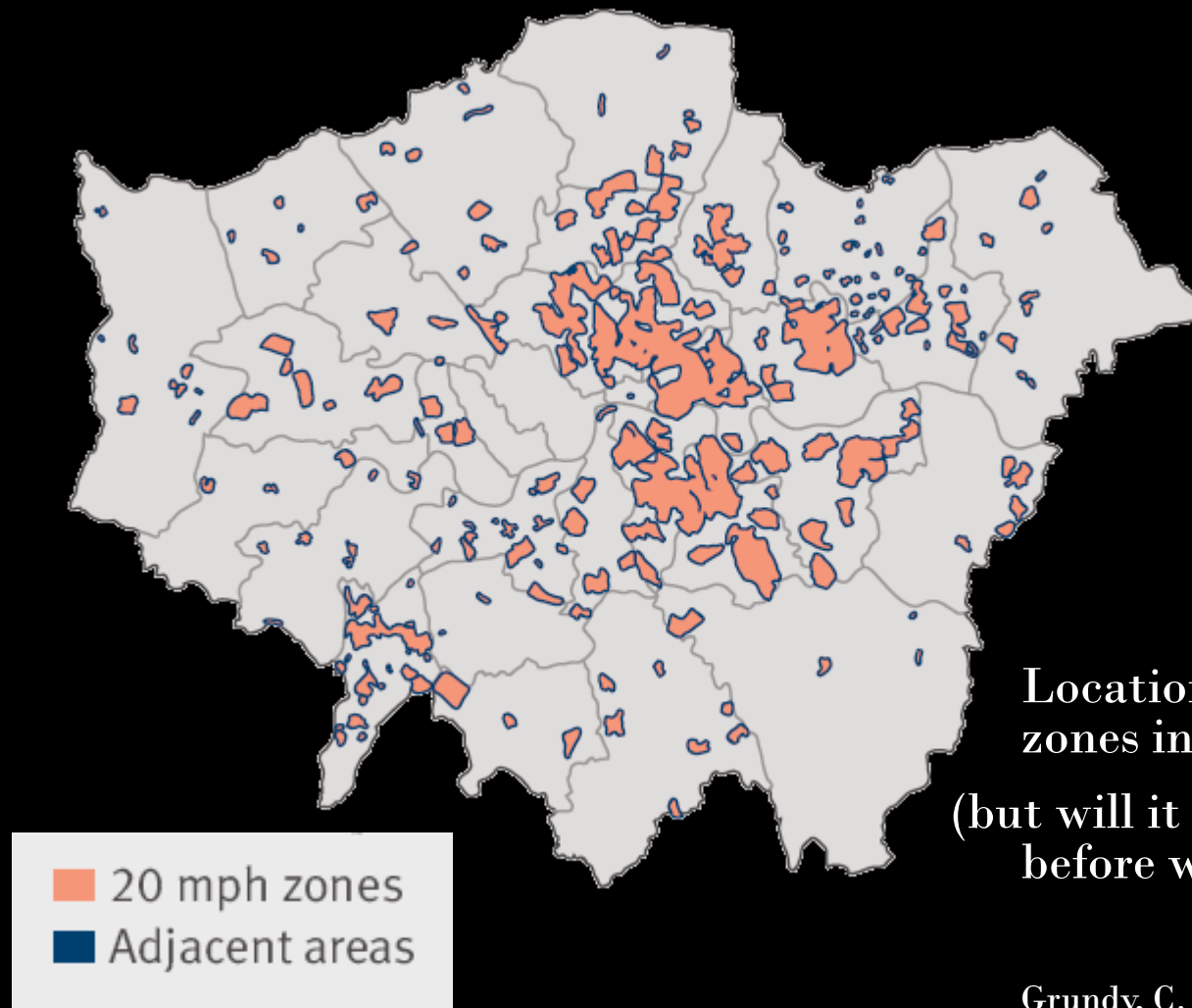
Grundy, C. et al. 2009, Effect of 20 mph traffic speed zones on road injuries in London, 1986-2006: controlled interrupted time series analysis, BMJ, 2009;339:b4469

doi:10.1136/bmj.b4469

# 2006–07 external causes of death of 20 to 24 year olds, Britain



We are  
starting to  
learn, just as  
we did in 1848  
with the first  
Public Health  
Act



Location of 20 mph speed  
zones in London (1991-2007),  
(but will it take 100 years again  
before we see the full effect?)

Grundy, C. et al. 2009, Effect of 20 mph  
traffic speed zones on road injuries in  
London, 1986-2006: controlled interrupted  
time series analysis, BMJ, 2009;339:b4469

[doi:10.1136/bmj.b4469](https://doi.org/10.1136/bmj.b4469)

# “Road danger, middle aged men and affluence the biggest causes”

## **PRESS RELEASE ROAD DANGER, MIDDLE AGED MEN AND AFFLUENCE - BIGGEST CAUSES OF DEATH AND INJURY ON BRITAIN'S ROADS**

- 16 September 2010

Young people called on to protest at next week's World Safety Conference.

- The World Safety Conference (<http://www.safety2010.org.uk/>) which opens
- in London next week is set to point the finger of blame for road traffic
- crashes on the victims of those crashes, rather than tackling the root cause,
- which is dangerous road traffic, says Dr Ian Roberts, Trustee of Road Peace
- (the UK national charity for the victims of road traffic crashes) and professor
- of public health at the London School of Hygiene and Tropical Medicine.



This press release can be downloaded from our website:

[http://www.roadpeace.org/resources/PR\\_20100815\\_Road\\_danger\\_middle\\_aged\\_men\\_and\\_affluence.pdf](http://www.roadpeace.org/resources/PR_20100815_Road_danger_middle_aged_men_and_affluence.pdf)

## We will remember the dates in the future:

- When we re-ordered the priority of vehicles so that blame is presumed on the larger and cars stop when children stand by the road (as in Switzerland)
- When we pedestrianised\* city centres as a matter of course and required reasons for 30mph and above wherever people walk and cycle
- When road safety became a DoH, not DfT issue

\* “pedestrianised is not a word in the US dictionary

Or in Powerpoint in English English!

# Local authority funding by intervention type — **what we may cut**

	Thameside	Total (National)
<b>Play schemes including traffic calming in vicinity and safer access</b>	£280,000	£2,030,000
<b>Pedestrian/cyclist facilities</b>		£1,327,000
<b>Engineering and traffic calming</b>	£100,000	£5,347,000
<b>Education, publicity and training</b>	£91,000	£1,510,500
<b>Home Zones</b>	£200,000	£431,000
<b>Watchman/VMS speed enforcement</b>	£90,000	£341,200
<b>Diversions activities (clubs)</b>	£30,000	£119,000
<b>Car-seat schemes</b>		£85,000
<b>Research</b>		£21,800
<b>Total Budget</b>	£791,000	£11,200,500

Christie, N. et al, “Road Safety  
Web Publication No. 19  
Road Traffic Injury Risk in  
Disadvantaged Communities:  
Evaluation of the Neighbourhood  
Road Safety Initiative (DfT, 2010)  
Table A1.1 from appendix I  
My added words in **yellow**,  
**Thameside just shown as example**



Just as it took us to the 1950s to begin to get sewage off our beaches.... So:

“While most children are injured on the residential roads, these make up about 80% of the road length in the NRSI areas. When this is accounted for, the risk to the children is highest on the main roads. It is especially high per head of population of young people aged 16–24 years. The implication of this is that **as much attention should be paid to pedestrian safety for people of all ages on main roads as on the residential network** “ (Christie, et al. 2010)

# We will look back and wonder what we were thinking

Accidents involving cars are responsible for more deaths among children and young adults in Britain than can be attributed to any other causes. Just as open sewers were once seen as convenient and cheap, if a little loathsome, and tobacco was once widely tolerated, at some point in the future the antisocial and only very personal and short-term benefits of personal residential car transport will be more widely recognised. Cars provide instant gratification. A car standing on the drive outside of ‘your’ house is widely seen as a sign of success. But what is one person immediate convenience is a town’s congestion and a country’s major killer. ...Even before considering **fumes, oil** and car **debt**.

# We become attuned to stupidity

If you had suggested in 1810, at the very start of the industrial revolution, that in a centuries time the open sewers would have been covered over, fresh water would be piped to houses, Individual latrines built for every property; they would have thought you mad.

If you had suggested too strongly in 1910, just before the First World War made cigarette smoking the national pass-time, that in a century most adults would no longer smoke and it might even be illegal to smoke in any public building; they might have certified you.

# Conclusion

If you suggest in 2010 that within a century we will no longer live in towns and villages choked by cars, paving over gardens, even if all cars are electrically powered by batteries recharged from wind-farms; they might accuse you of taking a flight of fantasy.

However, what remains the same over time is our intolerance of suffering, of ourselves and those around us. Slowly, one by one, the causes of the greatest damage to health are progressively removed. This lecture brought together maps, statistics and arguments to suggest that we should now view our road transport system in this way – as the greatest current avoidable toll on public health