SVEND JUUL SYMPOSIUM ÅRHUS 2 APRIL 2009

From history we can learn that we can learn nothing from history

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- If true then false
- If false then it may be true
- At least we can learn to be cautious
- We never swim twice in the same river
- The future is never like the past

- And this situation reminds me of absolutely nothing

- Most of what I will say will be wrong
- - is wrong
- Epidemiologists never get it right –
  we only hope to get the direction right
- As Irven Bross showed in 1954 (Biometrics, misclassification in 2X2 tables)
- obsD = TrueD (1-(FN + FP)

- Epidemiology in Århus started with Svend Juul
- I had my first job interviewing people in one of Svend's studies
- Will you see a doctor if .....

- We mainly wanted to **do** good
- Later, much later, we realized we also had to **be** good
- Now we have to remind ourselves that we do have to do good. Public health has the potential of doing good for thousands and to do harm for millions

- Plowing in virgin soil was easy
- Health hazards were frequent – occupational, life styles
- Even the most primitive designs would pick them up

- The combination of politics, now called community outreach, and some data eliminated many occupational hazards. Even some life styles improved – but much later.

- Svend was more interested in being good and together with Ipsen that had to do with computers and statistics
- All of this became later the start of evidence based medicine or evidence based public health

- At that time evidence based medicine would not have a chance in Hell. Medicine was politics, or politics nothing but medicine on a large scale.
- Now the terminology would be 'conflicts of interest', 'one cannot disregard personal experience, feelings, beliefs' –
- Same thing

- It took time before we realized that we are in charge of some of the most important data sources in the world and they are greatly underutilized
- And they will only become more important with time. We, or you, can do life course epidemiology

- Take good care of your data
- - but remember they are not your data
- You are responsible for ideas but you need data to put these ideas to a critical test
- And data need to be documented to be useful
- Svend got that right and much work is still needed

- I have seen the future, Baby
- It is murder

- Have we reached our limits (Taube)
- Will we be reduced to data collectors and custodes of cohorts
- Will there only be funds for studying microcosmos – not the big picture
- Research ethics will become so complicated that new discoveries cannot be done, at least not done in time

- A medical faculty will only take an interest in treatment and biological mechanisms
- Even epidemiologists stopped understanding diseases as social outcomes
- Only clinical epidemiology will have a future and only as 'evidence based medicine'
- All doctors will be out of public health

- We may become prisoners of the proximate
- We may forget that drivers of poor health are upstream causes, globally and locally
- Microbiology eradicated infectious disease epidemiology for a while
- Genetics may in like manner slow down epidemiology for a while

- Epidemiologists may stop trying to understand what determines the distribution of diseases over populations and over time
- We may be too divided –
  'we like Germany so much we prefer to have two'

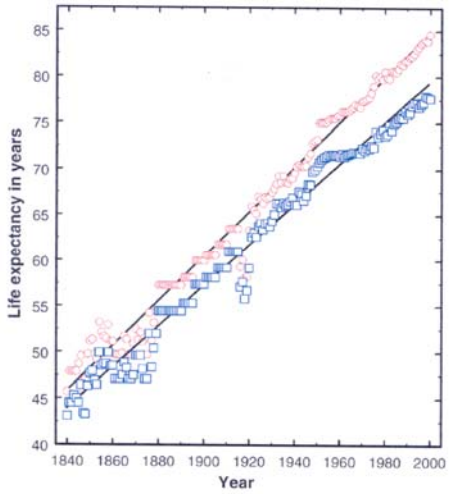
- We used to think that causes of ill health is poverty, lack of respect or not considered useful
- New causes have all been mathematized (Judea Pearl) and with that he can build a robot
- Misery is the river of life

- But
- There is a crack in everything
- That is how the light gets in

- Oh, happy days

Long-term achievements

FIGURE 2. MALE (BLUE SQUARES) AND FEMALE (RED CIRCLES) LIFE EXPECTANCY IN THE RECORD-HOLDING COUNTRY, BASED ON THE ANNUAL DATA SHOWN IN SUPPLEMENTARY TABLE 1. FOR MALES THE FITTED LINE HAS A SLOPE OF 0.222 AND $R^2 = 0.980$

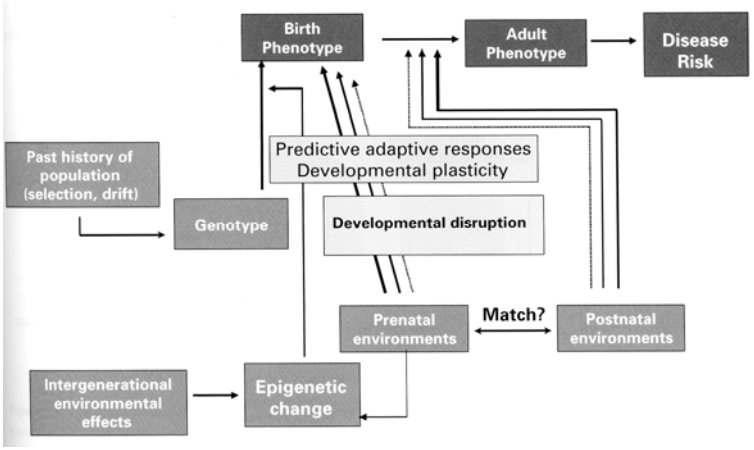


- Even 'from idea to invoice thinking' or old communist university laws can stop good ideas
- Free and open competition for jobs, funding, publications are still scientific virtues
- And good people cannot be stopped, at least not in the long run

- And options are plenty
- Large scale studies are badly needed and we can do them
- High throughput labs can now handle epidemiologic large scale studies
- New methodology provides much better options for improving designs and analyses

- Holding biobanks is key to funding as it is at present
- Plenty of space for avoidable causes of diseases – DNA is just a jazz score
- New ways of collecting data
- New diseases to explore

ENVIRONMENTAL FACTORS INTERACT DURING DEVELOPMENT TO AFFECT DEVELOPMENTAL PLASTICITY AND ALTER DISEASE RISK IN ADULTHOOD. IF THE PRENATAL AND POSTNATAL ENVIRONMENTS MATCH, THEN THE RISK OF DISEASE IS REDUCED BECAUSE PARS WILL HAVE LEFT THE DEVELOPING ORGANISM WELL PREPARED FOR ITS POSTNATAL ENVIRONMENT. CONVERSELY, A MISMATCH BETWEEN THE PRENATAL AND POSTNATAL ENVIRONMENTS MAY BE PATHOGENIC. MODIFIED FROM GLUCKMAN AND HANSON (2004A)



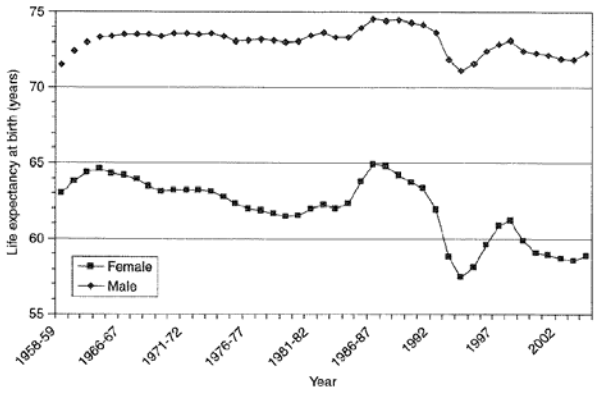


Figure 2 Life Expectancy at Birth: Russian Federation, 1958/59–2004. *Source*: The Demographic Yearbook of Russia: 2005 Statistical Handbook, State Committee of the Russian Federation on Statistics (Goskomstat of Russia), Moscow, 2005, Table 2.6; The Demographic Yearbook of Russia: 2002 Statistical Handbook, State Committee of the Russian Federation on Statistics (Goskomstat of Russia), Moscow, 2002, Table 2.6 The Demographic Yearbook of Russia: 1993 Statistical Handbook, State Committee of the Russian Federation on Statistics (Goskomstat of Russia), Moscow, 1993, Table 2.5.

Eberstadt N. Int J Epidemiol 2006;35:1394-1397.

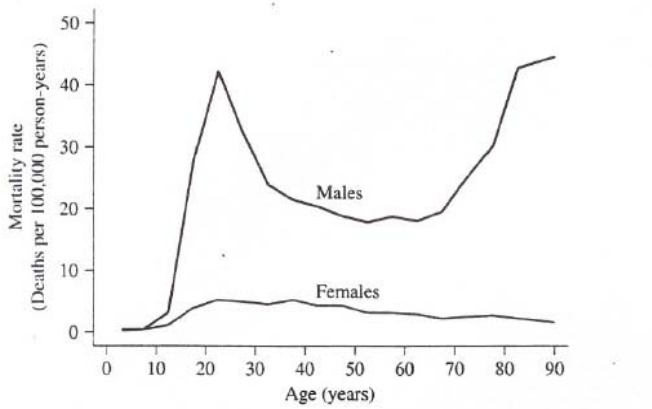


Figure 7–6. Mortality Rates from Firearm Injury by Age and Gender: U.S., 1998 (National Center for Health Statistics, 2000).

Koepsell TD, Weiss NS. *Epidemiologic Methods: Studying the Occurrence of Illness*. New York: Oxford University Press, Inc., 2003, p.153.

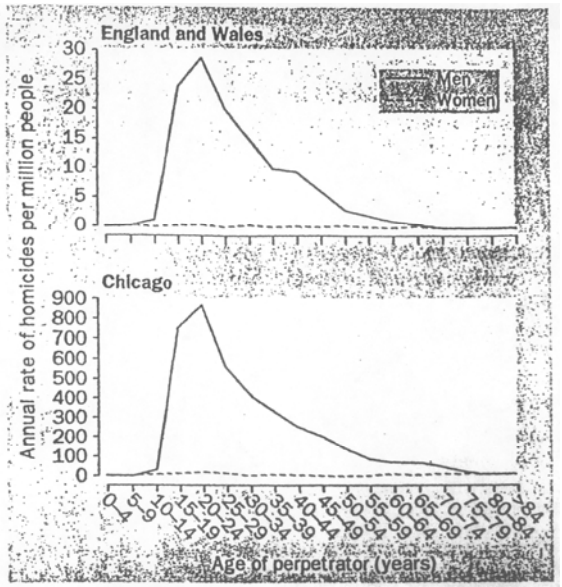
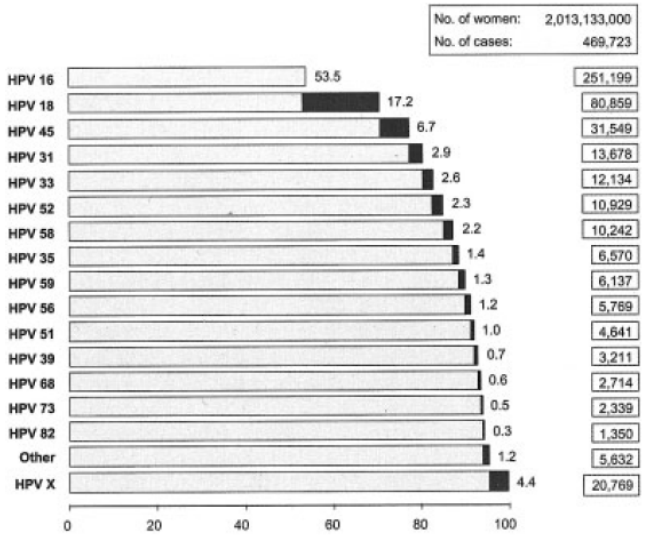


Figure 1: **Rates of homicide in Chicago and England and Wales by age and sex of perpetrator**



Muñoz N et al. Int J Cancer 2004;111:278-285

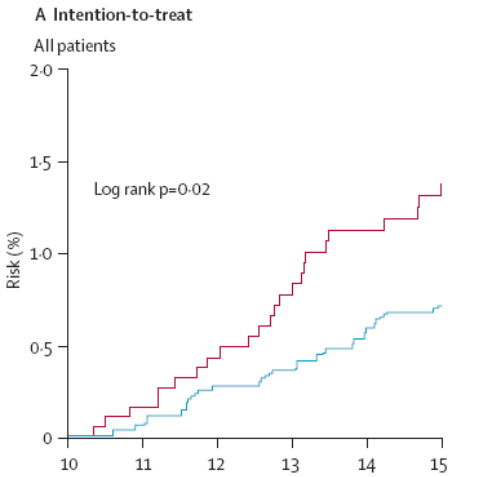


Figure 2: Risk of colorectal cancer 10–14 years after randomisation in patients allocated aspirin (blue line) versus no aspirin (red line) in a pooled analysis of data from the British Doctors Aspirin Trial and the UK-TIA Aspirin Trial

Flossman E et al. Lancet 2007;369:1603-13.

Table 1 **Dietary factors and lifespan of male mice**

Group	*Pregnancy diet (% protein)*	*Lactation diet (% protein)*	*Weaning diet*	*Average age at death (days)*
Normal chow	20	20	Chow	765 ± 22
Normal cafeteria	20	20	Cafeteria	715 ± 21
Catch-up chow	8	20	Chow	568 ± 36
Catch-up cafeteria	8	20	Cafeteria	517 ± 35
Postnatal low-protein chow	20	8	Chow	814 ± 25
Postnatal low-protein cafeteria	20	8	Cafeteria	807 ± 28

The different dietary regimes are summarized in the first three columns ($n = 24$ mice per group). Lifespans are expressed as mean ± standard error and were analysed by two-way analysis of variance followed by Duncan's post-hoc testing where appropriate. Effect of early diet: $P < 0.001$; effect of obesity, $P < 0.01$.

Ozanne SE, et al. Nature 2004;427:411-12.

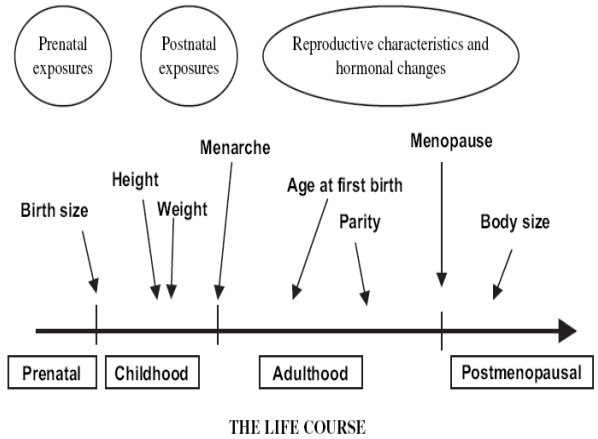


FIGURE 1. A simplistic time-line representation of conceptual (ovals) and observable risk factors for breast cancer.

De Stavola BL et al. Am J Epidemiol 2005;163(1):84-96.

- Soon we will be back on Boogie street