

“Incentivising positive corporate responses to Early Warnings: Insights from 1896-2013”

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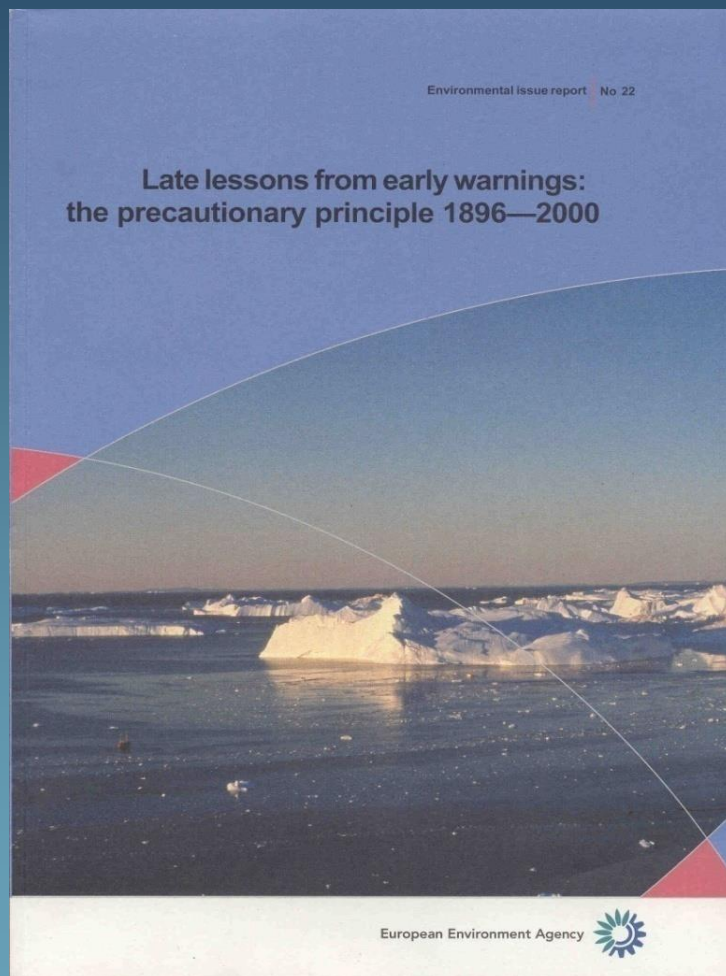
Summary

- What's in “Late Lessons from Early Warnings” EEA, 2001/13
- Why do risk creating corporations ignore early and late warnings?
- How could we incentivise positive corporate responses to plausible warnings of serious, irreversible harm?

Homo Sapiens (tragicus?) as slow learners

Two volumes

2001



2013



History and Insight complement Foresight & Precaution.

..we study history in order to see more clearly into the situation in which we are called upon to act”.

Collingwood R.G. Autobiography, 1939, cited in Preface,
McGlade J, “Late Lessons from Early Warnings”, EEA, 2013

34 case studies

'Environmental chemicals'

- Beryllium
- PCBs
- CFCs
- TBT antifoulants
- Mercury
- Environmental Tobacco
- Perchloroethylene
- Booster biocides
- DBCP
- DDT
- Vinyl chloride
- Bisphenol A

Ecosystems

- Ecosystems resilience
- Great Lakes pollution
- Fish stock collapse
- Acid rain
- Bee decline, France
- Invasive alien species
- Floods
- Climate change

Transport fuel additives

- Benzene
- MBTE
- Lead

'Micro technologies'

- Nano
- GMOs

Animal feed additives

- BSE, 'mad cow disease'
- Beef hormones
- Antibiotics

- Asbestos

Pharmaceuticals

- Contraceptive pill
- DES

Radiations

- X-rays
- Mobile phones
- Nuclear accidents

Plus 8 “horizontal “ chapters....

- the “**12 late lessons**” from **vol 1**...
- ..and in **vol 2**:
- **precautionary science;**
- **costs of inaction;**
- **the precautionary principle;**
- **false positives**
- **protecting early warners & late victims;**
- **why businesses ignore early warnings;**
- **Conclusions.**

When was first plausible early warning?

1896 X rays; **climate change**;

1897 benzene;

1898 **asbestos**;

1925 leaded petrol;

1965 antibiotics in animal feed;

1992/3 Goucho pesticide and bee decline in France;

1999 mobile phones & head cancer

First Epidemiological evidence on Asbestos: France, 1906

French Factory Inspectorate reported 50 deaths from lung disease in female asbestos textile workers, and proposed H&S recommendations...(Auribault,1906)

French & EU bans on asbestos 1997/1999 led to Canadian case at WTO (2001) against the French.

Some Costs of inaction: Asbestos

- c 6000 asbestos deaths a year-UK,2012
- 2000-2035: **400b euro** in costs to EU society from **cancers only**
- Asbestos Removal..? **Billions...**
- **Near collapse of Lloyds Insurance** via US asbestos compensation cases
- **Bankrupt Asbestos companies.**

WTO supports France & the EU, 2001.

- All forms of asbestos (blue ,white, brown) cause asbestosis & cancer
- The efficiency of “controlled use” was not demonstrated & residual risk would be significant
- No known threshold of safety

- a member is not obliged..to follow..a majority scientific opinion...
- ...nor to provide *quantitative* risk assessment data (WTO ,2001)

Research eventually shows that harmful **Exposures** expand over time.....

- **producers, users, bystanders** Asbestos, DBCP, Be
- **Domestic:** asbestos, lead, tobacco, Be
- **Environmental:** asbestos; lead, DBCP in water; tobacco; PCBs; benzene
- **Consumers:** BPA; nano;
- **Next generations:** Asbestos, radiations, Mercury, DES, Tobacco, climate changes
- **Target to non target species:** Goucho & Bees; oysters from TBT; fish from the Pill

& the **Nature of Known Harm** expands over time....

- **Asbestos**: 1929 **asbestosis**; 1954 **lung cancer**; 1959 **mesothelioma**, 2012 **throat & other cancers**
- **Tobacco**: 1951 **lung cancer**; 2012 **many cancers, foetal harm; heart disease**
- **PCBs**: 1960s **bird reproduction**; 2012s **neurological harm in children**;
- **Lead**: 1979 **brain damage in children**; 2012 **heart disease in adults**
- **Minamata**: 1950 **brain damage & neurophysical**; 1960s **birth defects** 1990s **childrens IQ & behaviour**
- **DES daughters**: 1970 **vaginal cancer**; 1980s **reproductive problems**; 2012 **breast cancer**; **sons** **repro harm**.
- **Climate change: from temperature increase to extreme events & ecosystems disruption**

And harm is caused at lower & lower levels of “safe” exposures...

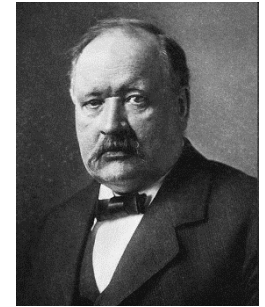
- Asbestos
- Lead
- PCBs
- Mercury
- TBT
- Radiations
- BPA....etc

....often with, eventually, no known threshold...

eg Lead (EFSA, 2012), radiations.

Climate Change: early & late warnings

- Arrhenius (**1896**) estimated that a doubling of the quantity of CO₂ in the atmosphere would raise the average global temperature by about 5°C.
- The US National Academy of Sciences (**1979**) report on global warming concluded with 1.5°C and 4.5°C.
- Largely confirmed by IPCC **1990-2014**: likely range 2.0 to 4.5°C.



Climate Change: Ex UK Treasury Chief Economist, Nick Stern, Davos, 2013

*"Looking back (to his 2006 report **I underestimated the risks..***

*..the planet and the atmosphere **seem to be absorbing less carbon than we expected..***

*..some of the **effects are coming through more quickly than we thought then"***

"Climate change is the biggest market failure ever".

See Late Lessons, 2013, chapter on Climate Change)

Climate Change “not a priority” for most CEOs, 2015

- **Climate change did not make the first 19 top priorities for concern.....**
- Top priority was “over regulation”

PricewaterhouseCoopers 18th annual CEO survey, 2015.

Why do risk creating corporations ignore early and late warnings?

See Late Lessons 2013, chapter 25, Marc Le Menstrel & Julian Rode

- Regulatory denial & inaction
- Costs of harm are externalised onto victims & societies
- Predominant business model is to maximise economic value to shareholders
- Fear of litigation
- coping with low probability high impact events
- personal/professional/societal values conflicts
- Insufficient public/consumer pressure
- Scientific uncertainty

Regulatory Denial

The Newfoundland Cod fishery **is being overfished (Keates, 1986) ...**

...dismissed by Canadian Dept of Fisheries & Oceans **as “biased pseudoscience written to support a political agenda”.**



MacGarvin, “Fisheries: Taking Stock”, in Late Lessons from Early Warnings (EEA, 2001)

1992

Regulatory Inaction

“Looking back in the light of present knowledge, it is impossible not to feel that opportunities for discovery and prevention of asbestos disease were badly missed”

Thomas Legge, ex UK Chief Medical Inspector of Factories, 1934

8 Proposals to incentivise earlier and more positive corporate action on plausible early warnings of serious harm

Earlier regulatory action based on a case specific sufficiency of evidence of harm.... in return for

longer time for corporations to flexibly implement such action?

greater stakeholder dialogue on helping to resolve conflicts of values and interests between corporate special interests and societal interests ?

more anticipatory research into
the potential hazards of novel
agents and technologies?

Research: how much on developing products v on anticipating hazards?

EU Public Research 1994-2013	“Products”	“Protection”
Nanotechnology (2002-2013)	5 billion	112 million (2%)
Biotechnology(1994-2013)	7.5billion	273 million (4%)
Information Communications Technology/EMF(2007-2013)	19 billion	18 million (0.09%)

Internalise health & environmental costs into market prices.

- Via taxes and tradable permits on harmful agents
- As on CFCs, pesticides, solvents, NOx, Carbon dioxide, **TURA toxic chemicals**, tobacco
- Introduced at the outset of plausible & serious harm..
- **With taxes /unit pollution rising in line with expanding knowledge of harm...**
- **with revenues used to fund innovations in better alternatives...(TURA toxics; US CFCs)**

Improve liability measures

- the wider use of **environmental assurance bonds*** that are returned to corporations if harms do not materialise?
- liability regimes that shift evidentiary burdens in favour of victims and damaged ecosystems?

**See application to Deep Water Horizon in “Protecting early warners and late victims”, Cranor C, EEA 2013*

“It is imperative that commercial operators have sufficient resources and insurance to cover full liability in the event of a pollution incident”

UK Parliamentary Environmental Audit Committee, 2015,
calling for Moratorium on Fracking

Extend corporate legal responsibilities towards current and future stakeholders?

Promote Business models that are based on circular economies which emphasise the provision of services rather than the sale of products?

Support well funded consumer and share activist campaigns that promote transparency about sustainability and human rights in corporate supply chains?

“Socially activist investors, including citizen-investors, are amongst the powerful influences keeping companies honest.”

Catherine Howarth, chief executive of ShareAction

43 global CEOs urge climate action-2015

“the science debate is over: climate change is real and addressable”.

*“We believe that effective climate policies have to include explicit or implicit **prices on carbon which will trigger low-carbon investment***

*We ..call for **new financial instruments to stimulate alternative energy and efficiency projects as well as green bonds.***

Thank you

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All Late Lessons chapters from both vols available
from EEA website as PDFs

And Kindle for vol 2