

Some key issues on the PP arising
from “Late Lessons from Early
Warnings”, vol 2
European Environment Agency.

to be launched at the European
Parliament ,

Jan 23rd 2013.

Complexity and Multicausality: some implications for Causality, Prevention, Communications

- There are increased limitations on *what can be known* about causality..
- And increased scope for both genuine and “manufactured” *doubt and uncertainty...*
- ...especially where the **Knowledge/Ignorance ratio** is high eg Nanofibres cf asbestos

- **Preventing late harm from early effects** needs *earlier, precautionary action* to reduce exposures
- **Transparent and Consistent criteria and procedures** for selecting & evaluating evidence; for dealing with **uncertainties**; and for understanding **divergent evaluations** of the “same” evidence, are needed
- **Consistent and clear Terminology** is needed for describing Cause/Effect links, and for communicating uncertainties.

“Effects” to “adverse” effects is a continuum

“when you expose an organism to a toxic substance it responds in a continuum.. there is no abrupt change between a response and no response”

Clair Patterson, Muskie hearings on lead ,1996. Quoted in “Lead makes the Mind give way: the story of leaded petrol” , Gee & Needleman, Late Lessons from Early Warnings” EEA 2013

A Science/Policy Conflict at the interface?

Scientists generally prefer to avoid **False Positives**.....(which bring damaged reputations; “unsound” science..) by using high strengths of evidence..

Policymakers and the public generally prefer to avoid **False Negatives**...(which bring damaged people; reduced public trust in politicians & scientists..)

What Strength of Evidence do we need to justify Action?

- Beyond all reasonable doubt?
- Reasonable certainty?
- Balance of probabilities/evidence?
- Strong possibility?
- Scientific suspicion of risk?

Choosing an “appropriate “ strength of evidence for action is an Ethical issue

Who benefits and who gains from being wrong in acting, or not acting, early enough to prevent harm?

Short term, specific, economic interests?

Or long term health/ecosystem/general societal interests?

Criteria For Action

- Intrinsic **toxicity**/ecotoxicity data
- **Novelty** (ie where there is a low *“knowledge/ignorance ratio”*)
- Ecological or biological **persistence**
- Potential for **bio-accumulation**.
- **Spatial range** in the environment.
- **Seriousness** of potential hazards
- **Reversibility**.

- **Analogous** evidence from known hazards.
- **Distribution** of hazardous impacts on particular regions, people, and generations.
- Availability of **feasible alternatives**
- **Potential for stimulating innovation**
- Potential and time scales for **future learning**

Iverson, T, Perrings C, "The precautionary Principle and Global Environmental Change", Working paper . No 15, Ecosystem Services Economics, Division of Environmental Policy Implementation, UNEP, Oct 2011 which **deals with the issue of learning and decisions on climate change actions.**