# Under what conditions can the interactions of scientific and political considerations in policy-making be both scientifically and democratically legitimate?

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My topic is the interactions between **science** and **politics** in relation to policy decision-making on regulating industrial technologies.

Examples include: climate change, mobile communications, pharmaceuticals, pesticides, social media, weapons of mass-destruction, nuclear power, and risk to public and environmental health from chemicals.

Scientific and democratic legitimacy are radically different.

Some have even suggested that they are incompatible.

Can they co-exist and be reconciled?

Can science-based policy-making be both scientifically and democratically legitimate? If so, how?

Scientific advisors to policy-makers have radically different agendas from scientists working in academic contexts where, as one question is answered, more questions arise. Academic science opens-up far more than it closes-down. But official scientific advisors are expected to settle questions and shut down debate, so that more questions are ***not*** asked.

Government ministers and eg European Commissioners want their scientific advisors to provide specific policy recommendations, not lists of uncertainties and alternative options.

They want monolithic prescriptive advice, not plural and conditional advice.

I will provide an evolutionary account of how the interactions between **science** and **politics** in regulatory settings have been portrayed and understood.

The evolution can be summarised in 4 stages, illustrated by 4 models.

The first 3 models have been influential, officially endorsed, but misleading.

(cf Brian Wynne's 'functional myths')

I contend that the 4th model correctly captures key features of important interactions, but it has rarely been officially endorsed, and **never** effectively implemented.

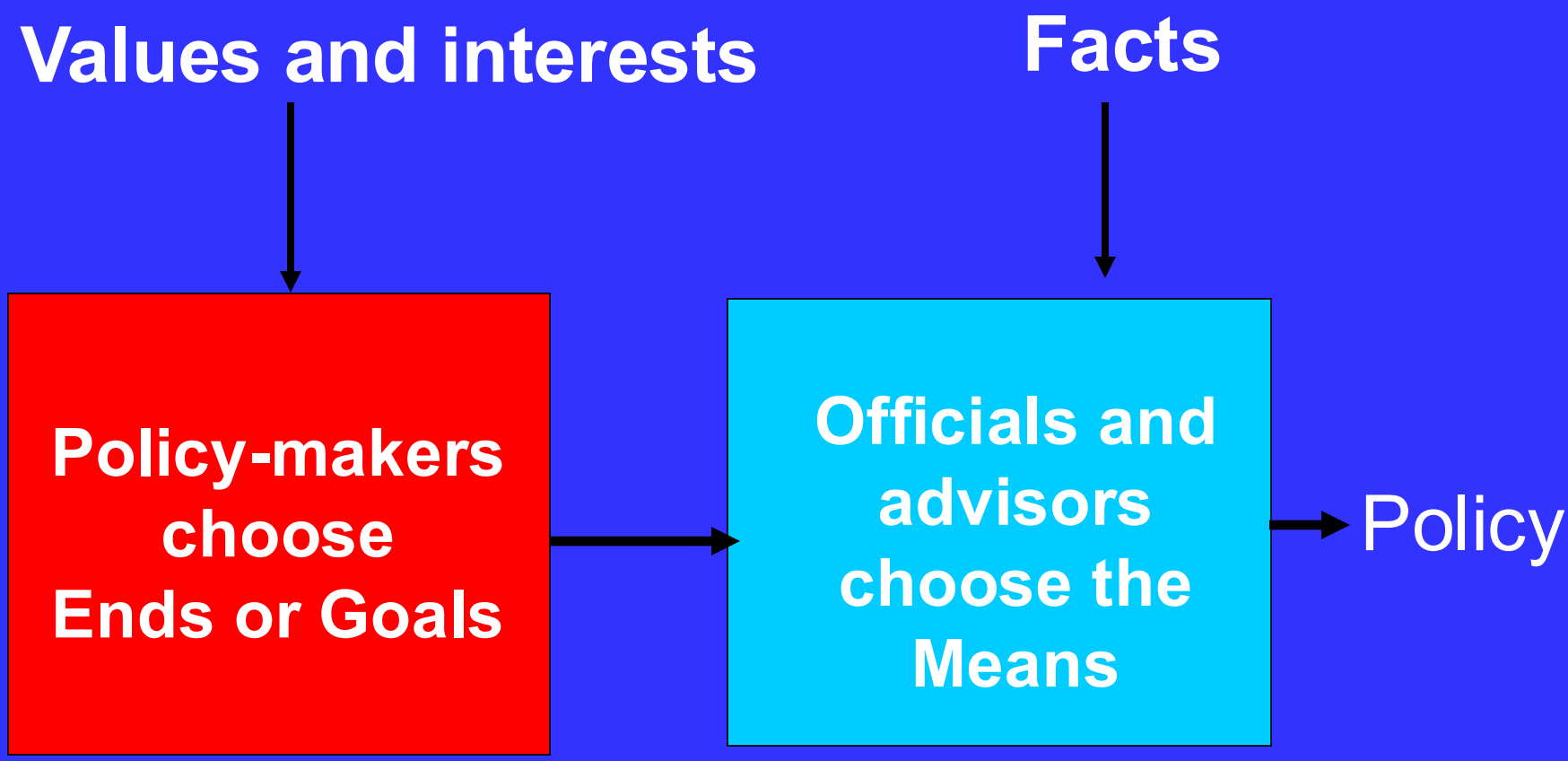
AND, that if it was properly implemented then policy decisions could achieve both scientific and democratic legitimacy.

**The questions:**

1) What are the roles of scientific and political considerations in systems of regulatory governance?

2) Can there be a separation of tasks, and what should be the division of responsibilities?

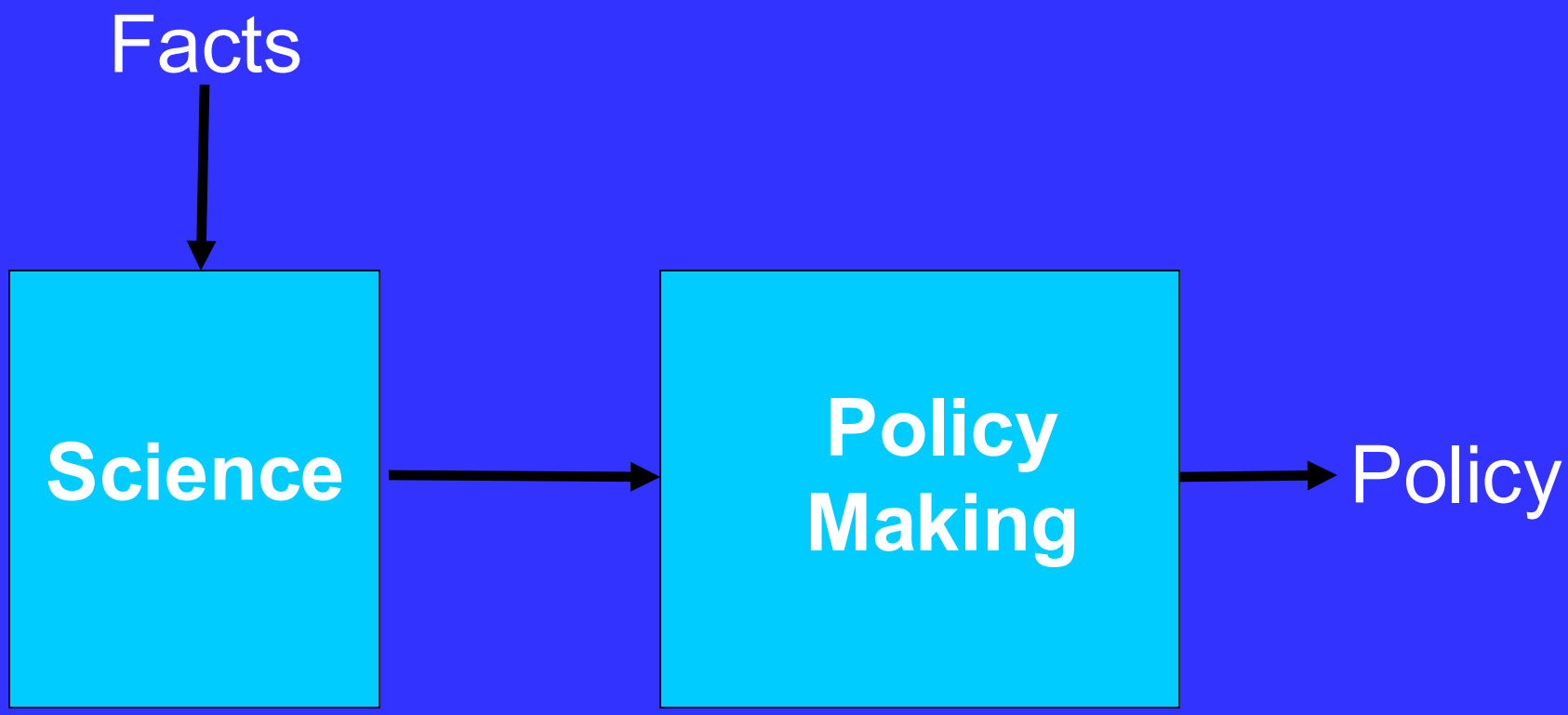
# Model 1: Durkheim & Weber's Decisionist Model



# Positivist/Technocratic critique

Policy-makers often cannot select the goals of policy-making without advice from scientists, because they will be ignorant of the risks that may need to be assessed or managed.

# Model 2: the Technocratic Model
# policy is based only on sound science



Public policy-makers, such as government ministers, often claimed, from the 1950s to the late 1970s in the USA, that policies to regulate technologies were always and only based on ‘sound science’.

Technocratic narratives appeal to both ministers and scientific advisors.

They shield ministers from taking responsibility for contested policy decisions and inflate the intellectual status of the advisors.

In Europe Technocratic models prevailed until the late 1990s but were rendered unsustainable by the Mad Cow Disease crisis.

**The technocratic model was torpedoed by the fact that scientific evidence is often incomplete, equivocal and uncertain.**

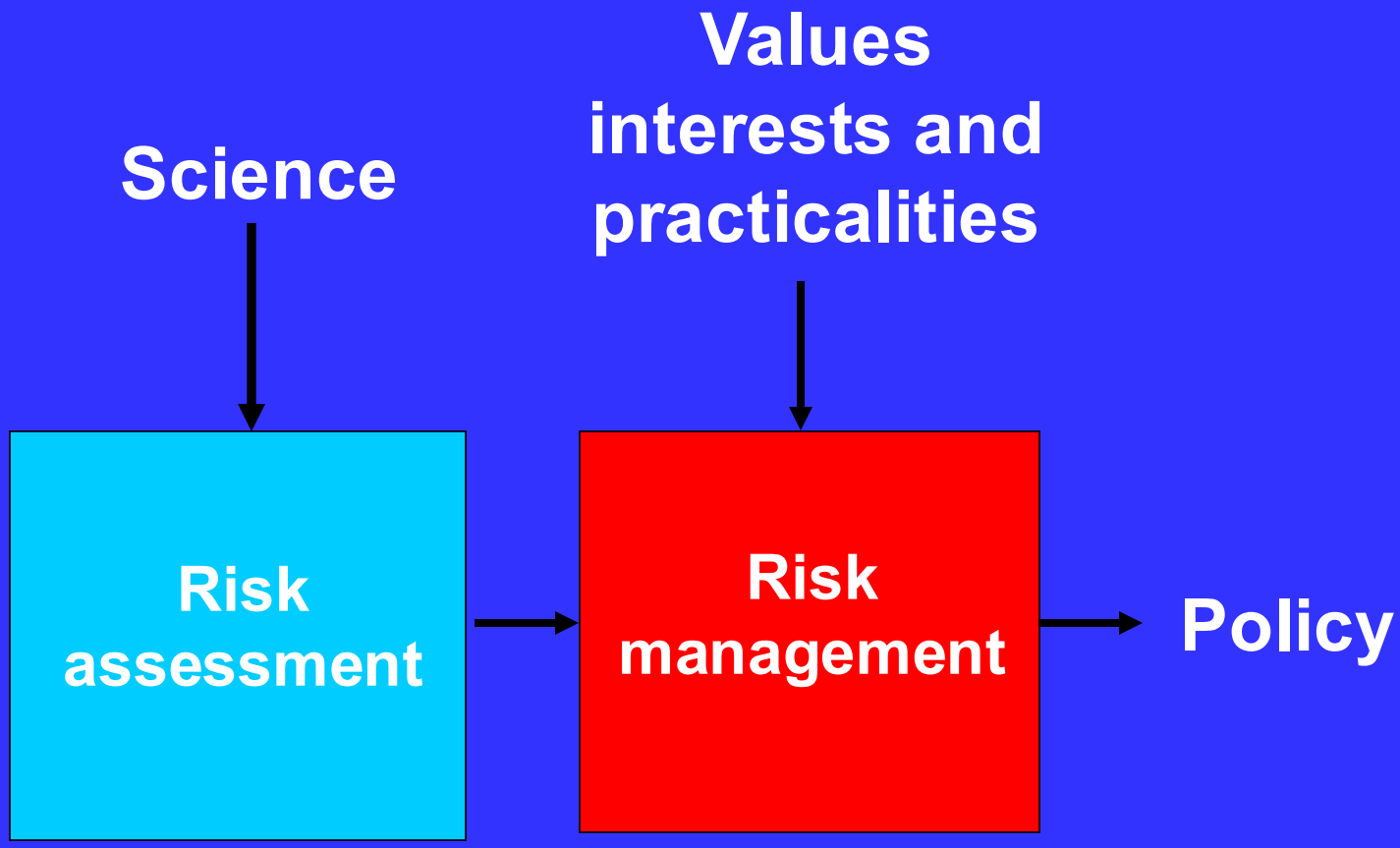
**Eg BSE and vCJD, carcinogenic risks from saccharin (0.22 to 1,144,000, extra cases of cancer in USA from ~70mg/cap/day)**

**Science in policy rarely speaks with certainty or with one voice.**

Even if *per impossibile* all scientific uncertainties were eliminated, scientific facts cannot decide regulatory policy choices.

**You cannot derive an ‘ought’ from an ‘is’.**

# Model 3 – The *Red Book inverted*
# Decisionist Model

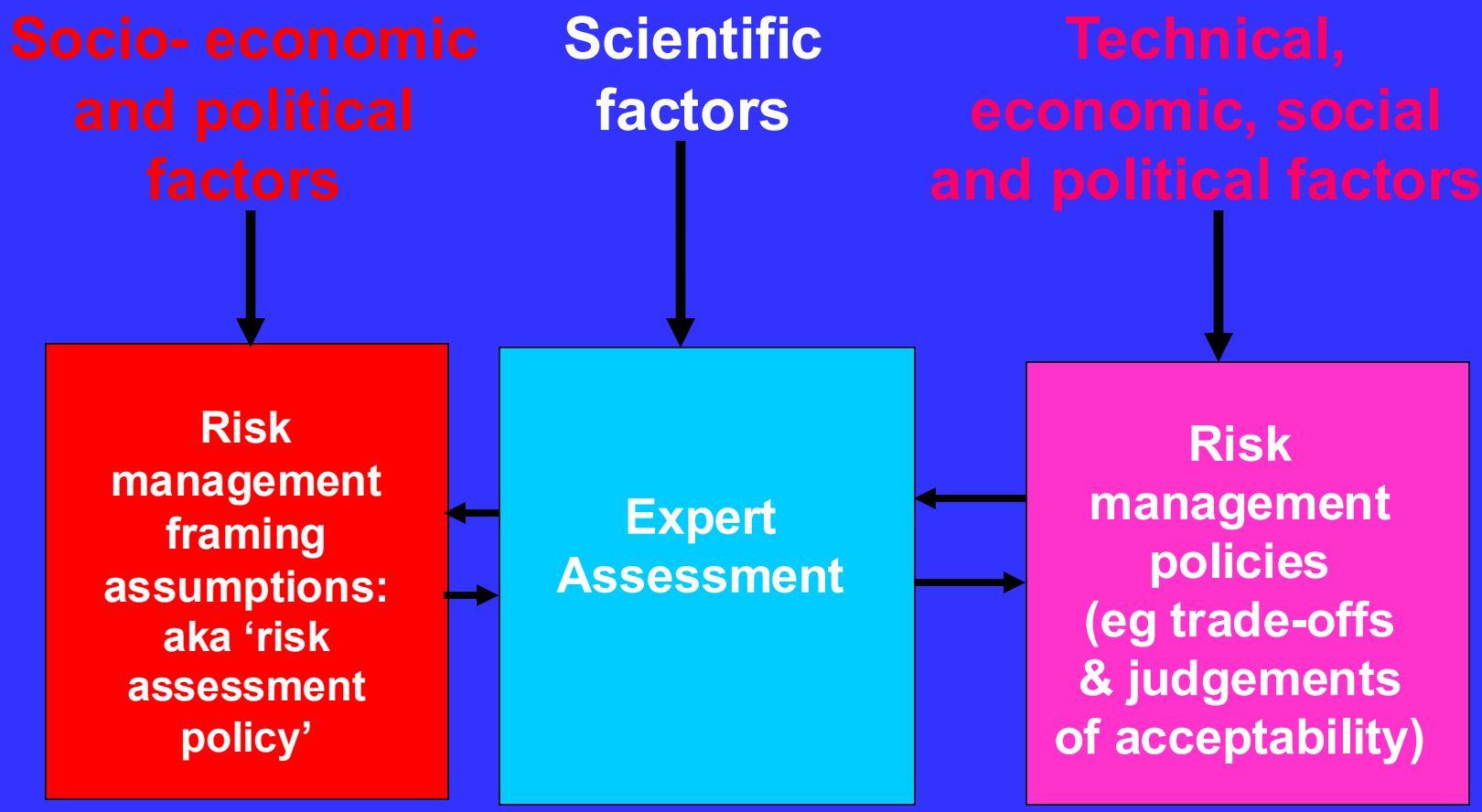


That model was a step forward, in the USA >1976 FoI Act; in the EU>2000, but it is incomplete, because it ignores how *non-scientific considerations frame* scientific representations of risk.

Scientific assessments of risks are always framed by a set of prior value-laden context-dependent assumptions, that we can call ‘risk assessment policy’ assumptions or **RAPs**.

Science can and should make important contributions to policy-making, but it should be seen as sandwiched between two separate, but often related, sets of value judgements.

# Model 4 - the Co-Dynamic Model:
reciprocal links between **science** and **policy**



# History of RAP-making

Under current arrangements, risk assessment policies are routinely set by nominally ‘scientific’ advisors, or by those who selected members of risk assessment bodies.

Under those conditions, key policy considerations and choices are left entirely implicit and misrepresented as if they are purely scientific.

**Industrial corporations have captured many scientific panels and their RAPs.**

Making risk assessment policy explicit means being as rigorous about the choice of questions asked as about the choice of answers given.

RAP issues are always in play, but they are often *unacknowledged* and remain implicit and *unaccountable*.

There are at least 3 main types of RAPS:

substantive

procedural and

interpretative

and they are inter-dependent.

**Substantive RAPs**:

**scoping** judgements about

1) what *counts* and what should be (or can be) *discounted*? Eg mobile phones and emulsifiers, and
2) what can and should count as relevant evidence?

# Procedural RAP guidance,

## eg from the UK Food Standards Agency

### (a hybrid RA/RM body)

“Chairs of...advisory committees …[should ensure]…that the proceedings of the committee...are properly documented…so that there is **a clear audit trail** showing how the committee reached its decisions.... ..decisions should include an explanation of where differences of opinions have arisen during discussions and why conclusions have been reached...They should also explain **any assumptions and uncertainties** that are inherent in their conclusions.”

# Interpretative RAPs

It is often important to examine how evidence has been interpreted.

Evidence never interprets itself, and only rarely is the meaning of the evidence self-evident.

# Interpretative RAPs

- What is the ‘chosen level of protection’?
- How should uncertainties be addressed?
- Which is more important, avoiding potential false positives or potential false negatives, or are they equally important?
- How much evidence, and of which kinds, is necessary and/or sufficient for decisions about acceptance, rejection or restrictions?

The Codex Alimentarius refers to **Risk Assessment Policy** as follows:

"Determination of **risk assessment policy** should be included as **a specific component of risk management**.

**Risk assessment policy should be established by risk managers in advance of risk assessment, in consultation with risk assessors and all other interested parties**…

The mandate given by risk managers to risk assessors should be as clear as possible."

But in practice, most RAP issues are being decided by scientific advisors who are routinely portrayed as ‘independent’, objective and decisive, but often are closely aligned with industrial corporations.

Policy-makers, eg government ministers, European Commissioners etc, want to use those scientific advisors as ‘their shield’, and avoid having to take responsibility for controversial decisions.

# Corporate capture of RAPs

| | Current Orthodoxy | Socially & Environmentally Responsible |
|---|---|---|
| **Substantive** | Narrow, minimal and manageable | Broad, comprehensive and often challenging |
| **Procedural** | Closed, biased and unaccountable | Open and accountable to scientific and democratic scrutiny and oversight. |
| **Interpretative** | Prioritises corporate interests, eg selectively highlights uncertainties and prioritises avoiding false +ves. | Precautionary, acknowledging all policy-relevant uncertainties, prioritising avoiding false –ves. |

If scientific advisors were to remain within the bounds of scientific considerations, they could provide policy-makers with advice indicating what is known and not known about the consequences of following, or failing to follow, a range of possible options.

They could provide plural and conditional advice, but not singular monolithic prescriptive advice of the sort policy-makers expect.

# Conclusion

Operationalising a Co-Dynamic Model, and explicitly implementing eg the CODEX RAP provisions, would help create the conditions under which science-based policy-making could achieve and reconcile both scientific and democratic legitimacy.

# *Coda*

Given that ENSSER is focused on science for *Environmental and Social Responsibility,* it is legitimate, and maybe imperative, for us to acknowledge that our values can and maybe should influence the topics we study and the questions we ask.