

Opening Pandora's Black Box – Subjecting hazard assessment and assessors to scrutiny

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Black Box

A device, system or object in respect of which we know the inputs and outputs but we do not know (or do not need to know) the internal process or workings (Latour 1987)

Societal risks (primary)



Institutional risks (secondary)

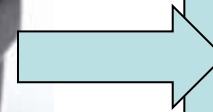


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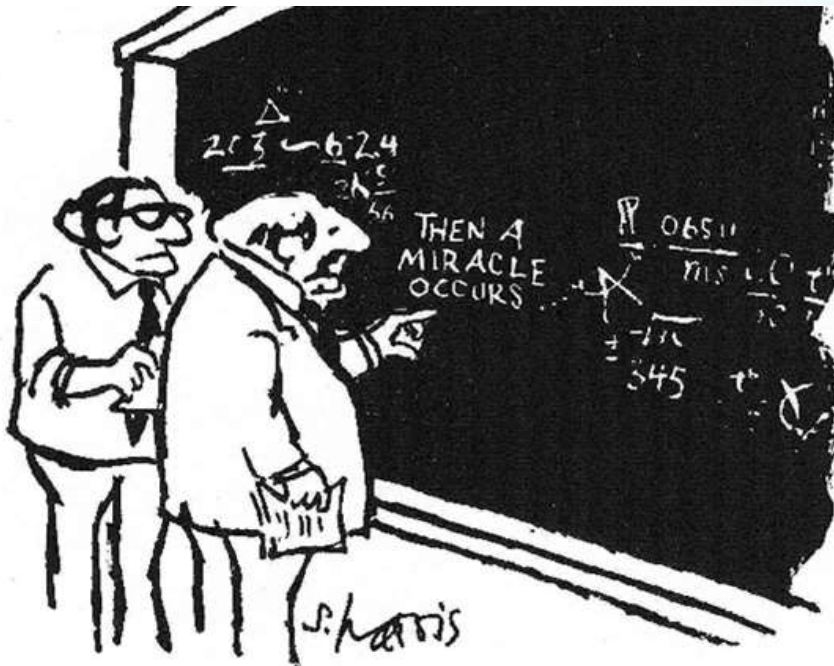


Hazard Assessment

Monitoring & other
INPUTS



Hazard
assessment
OUTPUTS



I think we should be more explicit here in step two where it says "THEN A MIRACLE OCCURS")

If we opened the Black Box TODAY, what historic roles and practices would it contain? Hazard Assessment Extreme Case

Hazards	Objective Absolute Truths (with no or little subjective content) capable of characterisation
Hazards - Uncertainties	Epistemic, Aleatory, Limited acknowledgement of Limitations

Experts - Role	"Detached observer"
Experts – Output (Impact)	"Good Hazard Characterisation" for use by separate Risk managers
Experts – Output values	Independent, Purely Scientific, Appropriate, Precise, Adequate, Socially & Politically Neutral, Unbiased, Objective, Accurate, Truthful, Correct, Trusted, Respected
Experts - Appearance	Superior, Powerful, Controlling, Arrogant, Contemptuous, Distant, Secretive, Uncaring, Optimistic about their Values

Experts - Process	Top-Down, Distant & Separate from Sequential Risk Assessment Unaccountable - Not Recorded, Transparent, Open, Accessible, Democratic, Auditable
Experts – External scrutiny	Direct by peer review, Occasional by public & media None by legal & regulatory authorities (exception L'Aquila trial)
Experts - Governance	No self-regulation? No agreed professional standards?
Experts – Behaviour	Societal risks MORE important than Institutional risks - Little evidence yet of Blame-related behaviours

Risk managers - Role Appoint good experts & accept their expert Output

Public - Appearance	Inferior, Unscientific, Inappropriate, Unsophisticated, Cynical, Wrong
Communication	Powerful Truth telling/educating weak/ignorant Risk managers & Public Social Science end-of-pipe bolt-on to assist "education"

Possible drivers for change

Greater Opportunity for Scrutiny	Freedom of Information National Governance laws International Human Rights (Before & After event)
Greater Desire for Scrutiny	For Transparency, Openness, Participation Accountability from Public, Media, Regulators
High expectations of governance	Better science leads to better risk decisions Better risk decisions lead to better safety ? You can do more & better; we can do less!
Less respect for hierarchical authority	All governance actors should be accountable Less respect for professionals & decision makers (including scientists!)
More regulation of regulators	Institutional risks > Societal risks

*If we opened the Black Box in the **FUTURE**, what historic roles and practices would it contain? **Hazard Assessment Extreme Case***

Hazards	Objective Absolute Truths (with no/little subjective content) capable of characterisation
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Hazards	More Collaborative/Co-Produced Characterisation with more stakeholders framing the problem & shaping the Output
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Hazards – Uncertainties

Epistemic, Aleatory - limited acknowledgement of Limitations

Hazards - Uncertainties

Better communication of uncertainties, limitations, subjective influences, value of further time & effort

Experts - Role	"Detached observer"
Experts - Role	"Participant-Observers or Activists"

Experts – Output values	Independent, Purely Scientific, Appropriate, Precise, Adequate, Socially & Politically Neutral, Unbiased, Objective, Accurate, Truthful, Correct, Trusted, Respected
Experts – Output values	Pressures to be more directly involved in risk management whilst preserving the above values – DIFFICULT TO DO Being Trusted and worthy of Trust may be helpful future benchmarks

Experts - Appearance	Superior, Powerful, Controlling, Arrogant, Contemptuous, Distant, Secretive, Uncaring, Optimistic about their Values
Experts - Appearance	An independent, candid & realistic expert within a wider team of multi-disciplinary experts & public representatives

Experts - Process	Top-Down, Distant & Separate from Sequential Risk Assessment Unaccountable - Not Recorded, Transparent, Open, Accessible, Democratic, Auditable
Experts - Process	More integrated Hazard/Risk process which is Recorded, Transparent, Open, Accessible, Democratic, Auditable, Scrutinised and Improving
Experts - Governance	No self-regulation? No agreed professional standards?
Experts - Governance	Self-regulation by standards of best practice/checklists

Experts – Behaviour

Societal risks MORE important than Institutional risks - Little evidence yet of Blame-related behaviours

Experts – Behaviour

Societal risks LESS important than Institutional risks - Blame-related behaviours by all stakeholders will increase rapidly

Risk managers - Role

Appoint good experts & accept their expert Output

Risk managers - Role

More involvement in the nature & content of Hazard Output
A more bottom up – outcome focussed process

Communication	Powerful Truth telling/educating weak/ignorant Managers & Public Social Science end-of-pipe bolt-on to assist "education"
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Communication	Framing, production & dissemination of knowledge by equals at all stages of governance process
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The future roles and responsibilities of Hazard Assessors (& Risk Assessors) need to be discussed openly in each jurisdiction

Hazard Assessment processes should be outcome (impact)-focused and driven and the resulting role of Hazard Assessors defined clearly

Published dynamic standards/checklists may lift standards and assist consistency, transparency & accountability

The biggest challenge will be to achieve **greater collaboration & better knowledge production and exchange** within hazard & risk assessments whilst maintaining **trusted and trust worthy scientific excellence & independence**





*When we open
Pandora's Black Box
it must contain more
than just...*

HOPE!