NEA framing nuclear megaproject 'pathologies': vices of the modern Western society?

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NEA. 2015. Nuclear New Build: Insights into Financing and Project Management, p. 231

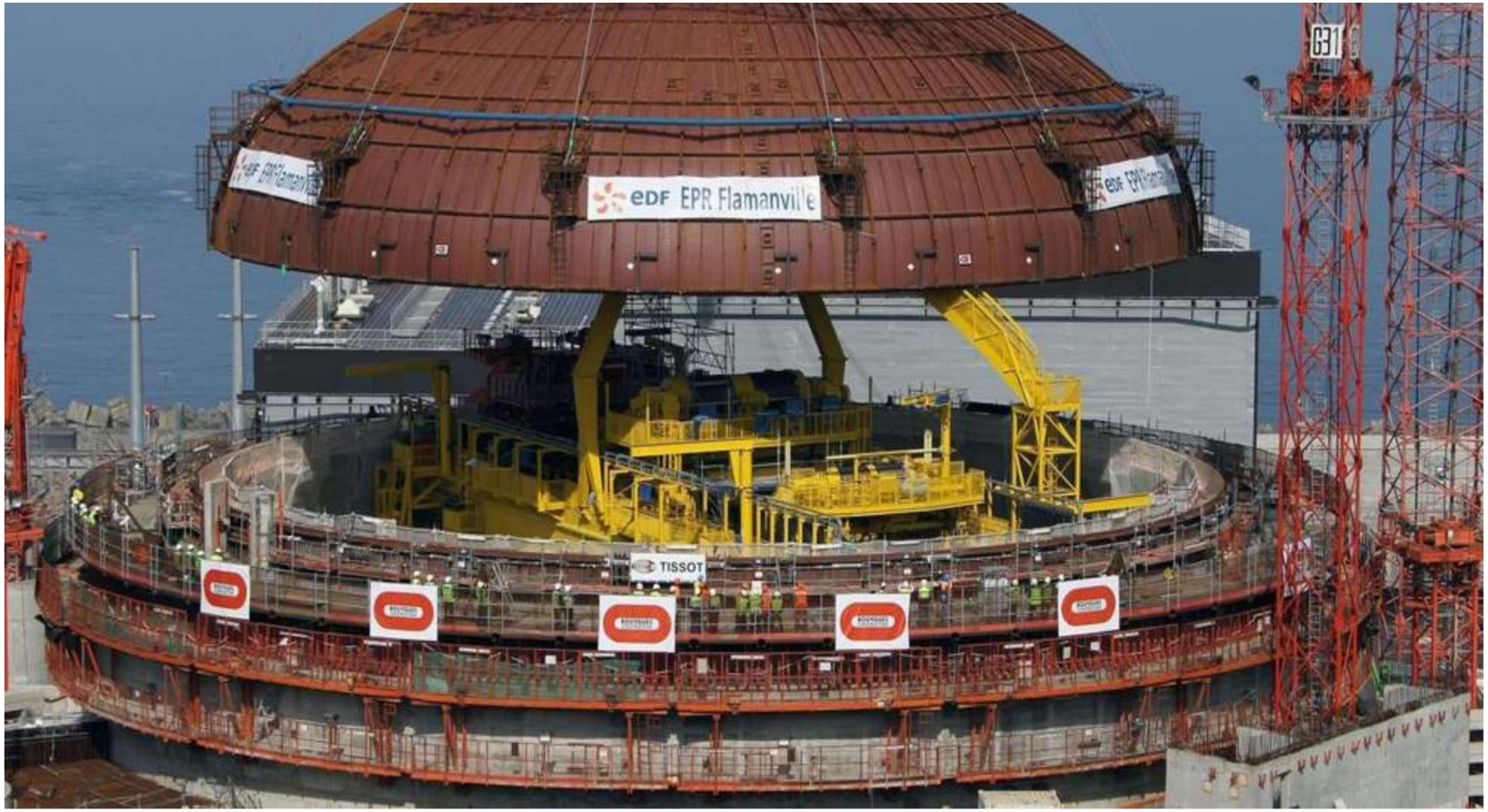
"the global nuclear industry will rise or fall based on its overall ability to deliver reactors ready for grid connection on budget and on time"

EPR – The European Pressurised Reactor

Olkiluoto, Finland

Flamanville, France

Hinkley Point C, the UK



Objectives

- How do NEA experts frame nuclear megaproject “pathologies” in general, and those affecting the EPR in particular?
- Focus on the problem diagnosis: how do NEA experts explain the problems faced by current nuclear-sector megaprojects?
- NEA expert framings/explanations against the background of the existing megaproject literature:
  - ”nuclearity”: similarities and differences between nuclear-sector and other megaprojects?
  - conventional or alternative megaproject scholarship?

Data and methods

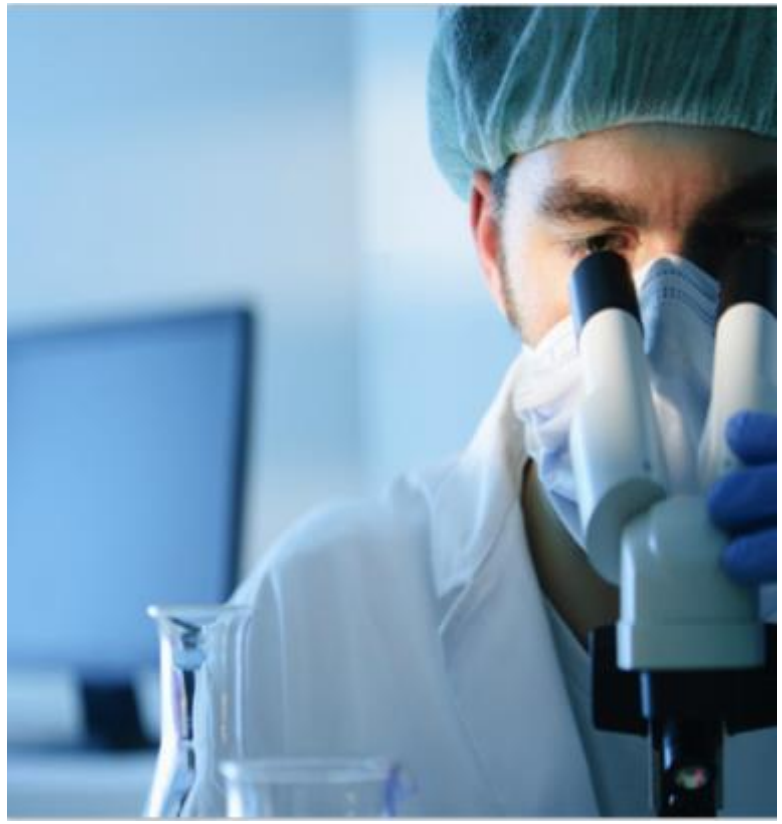
Semi-structured interviews with 19 NEA officials, July-September 2019

General megaproject literature as a basis

Work in progress…

- Further analysis of media debate on the EPR, and NEA NDC documents (?)

Two perspectives on megaproject pathologies

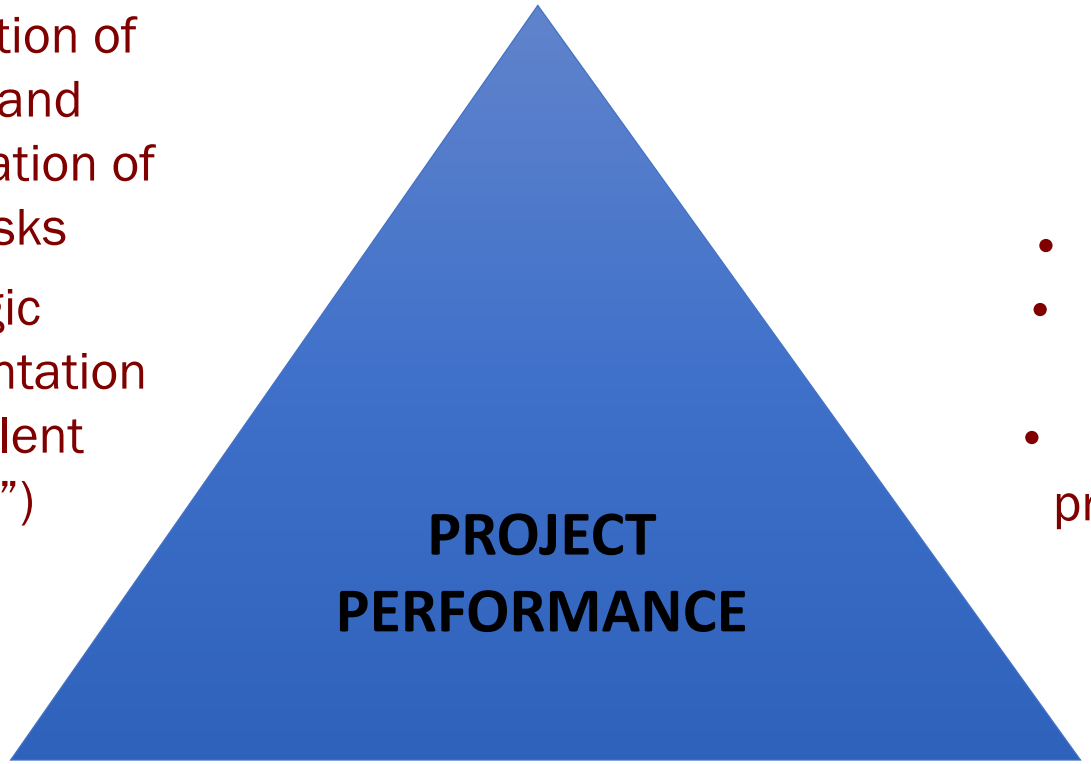


Megaproject pathologies: the mainstream view

Reasons

- Optimism bias: overestimation of benefits and underestimation of costs, risks
- Strategic misrepresentation ("malevolent design")

Budget (overruns)



Outcome

"Survival of the unfittest"

Solutions

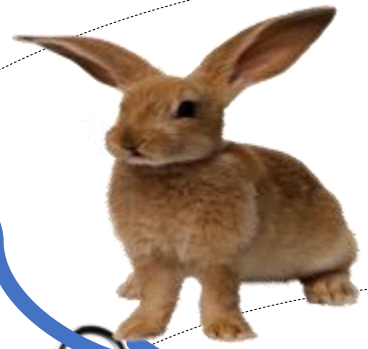
- Transparency
- Accountability
- Control
- Involvement of private risk capital

Timetable (delays)

Predefined project specifications (failure to meet)

Alternative view on megaproject ‘pathologies’

Turbulence



Complexity

Dynamic & evolving projects

Deep uncertainty
Unknown unknowns

Ministry Y

Firm X

NGO Z

Turbulence

Clashes of cultures

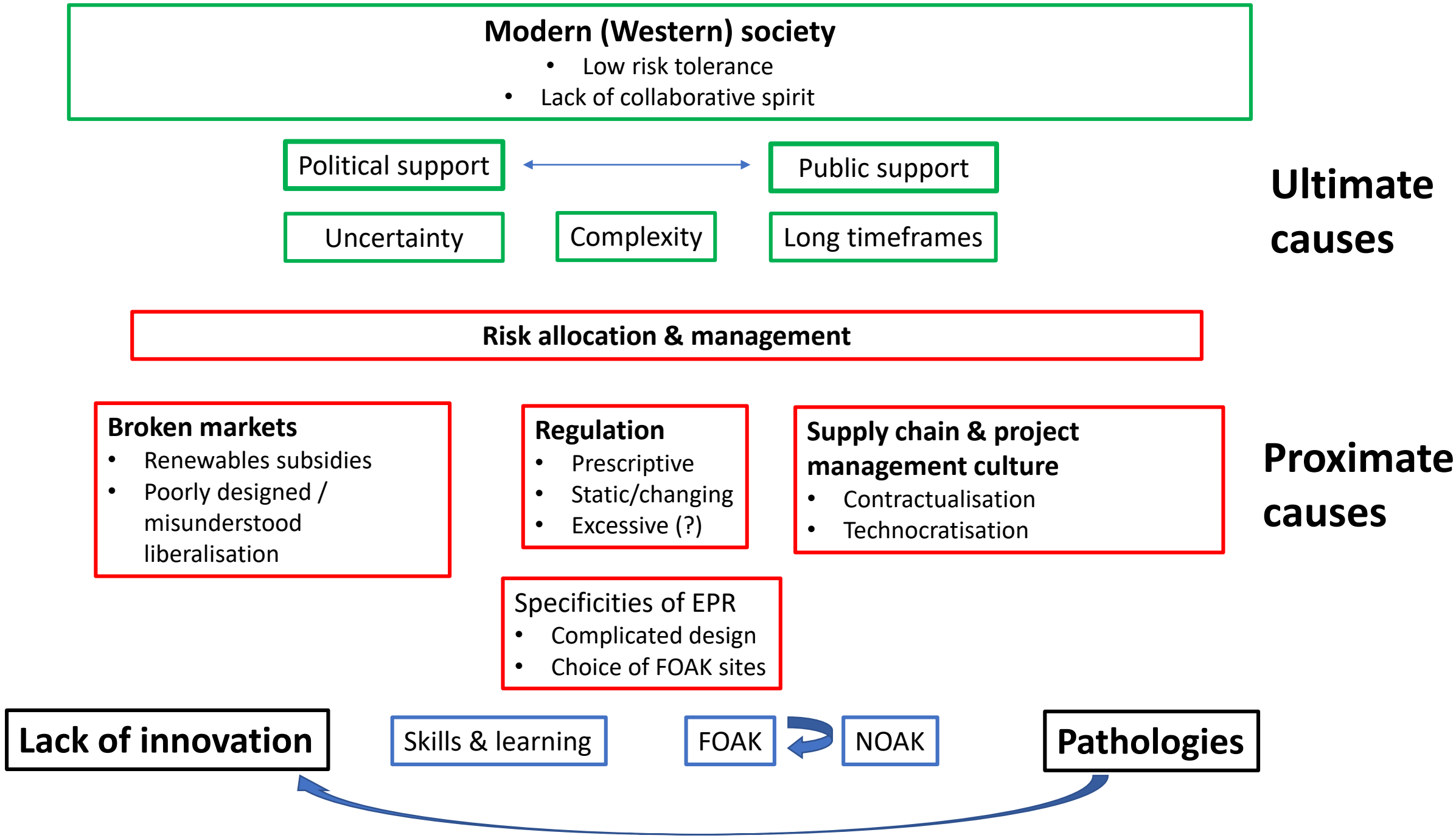
Poorly defined/definable project boundaries

Projects as networks?

Multiple rationalities

The "Hiding Hand"

Ignorance and overoptimism can be vital for for creativity and innovation


Modern (Western) society
• Low risk tolerance
• Lack of collaborative spirit
Political support
Public support
Uncertainty
Complexity
Long timeframes
Ultimate causes
Risk allocation & management
Broken markets
• Renewables subsidies
• Poorly designed / misunderstood liberalisation
Regulation
• Prescriptive
• Static/changing
• Excessive (?)
Supply chain & project management culture
• Contractualisation
• Technocratisation
Proximate causes
Specificities of EPR
• Complicated design
• Choice of FOAK sites
Lack of innovation
Skills & learning
FOAK
NOAK
Pathologies

Conclusions

- “alternative” megaproject literature rather than the “iron triangle”: the Hiding Hand?
- Solving pathologies is essential for the nuclear sector – to do so, adapt to the context or seek to change it?
- Nuclearity
  - All megaprojects suffer from pathologies – but particular complexity of nuclear
  - “we should know how to do these things, we’ve done it 400+ times before” (this is not rocket science!)
- Aligning stakeholders – “we” must work together, but who are we?
- Needed: “reasonable” regulation, fixing the market, bringing in the state
- Nuclear is in the public interest
  - the modern society suffers from pathologies that prevent it from pursuing its own interest

Relevance for the practitioner community

- Lessons from megaproject literature – is nuclear different?
- Helping the nuclear community(?) to clarify its own underlying assumptions and causal beliefs
- Facilitating debate across various expert and stakeholder communities by helping to explicate the reasons for consensus, disagreement and controversy

Proximate reasons

- Supply chain
- Project management (culture)
- Broken markets
- Regulation
- EPR specificities

Ultimate reasons

- Complexity and long timeframes
- Political support and leadership
- Public support and opinion
- The modern (Western) society

The public interest?