

SIGNALLED AND SILENCED ASPECTS OF NUCLEAR SAFETY

Finnish Research Programme on Nuclear Power Plant Safety
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Research tasks



- Identification of international and national nuclear safety regimes after the Fukushima accident.
- Identification of national cultural features that may affect safety & analysis of cultural characteristics of nuclear safety regulation.
- Analysis of the concept of safety based on the IAEA Safety Standards and the stress tests documents.

Data

- Document analysis

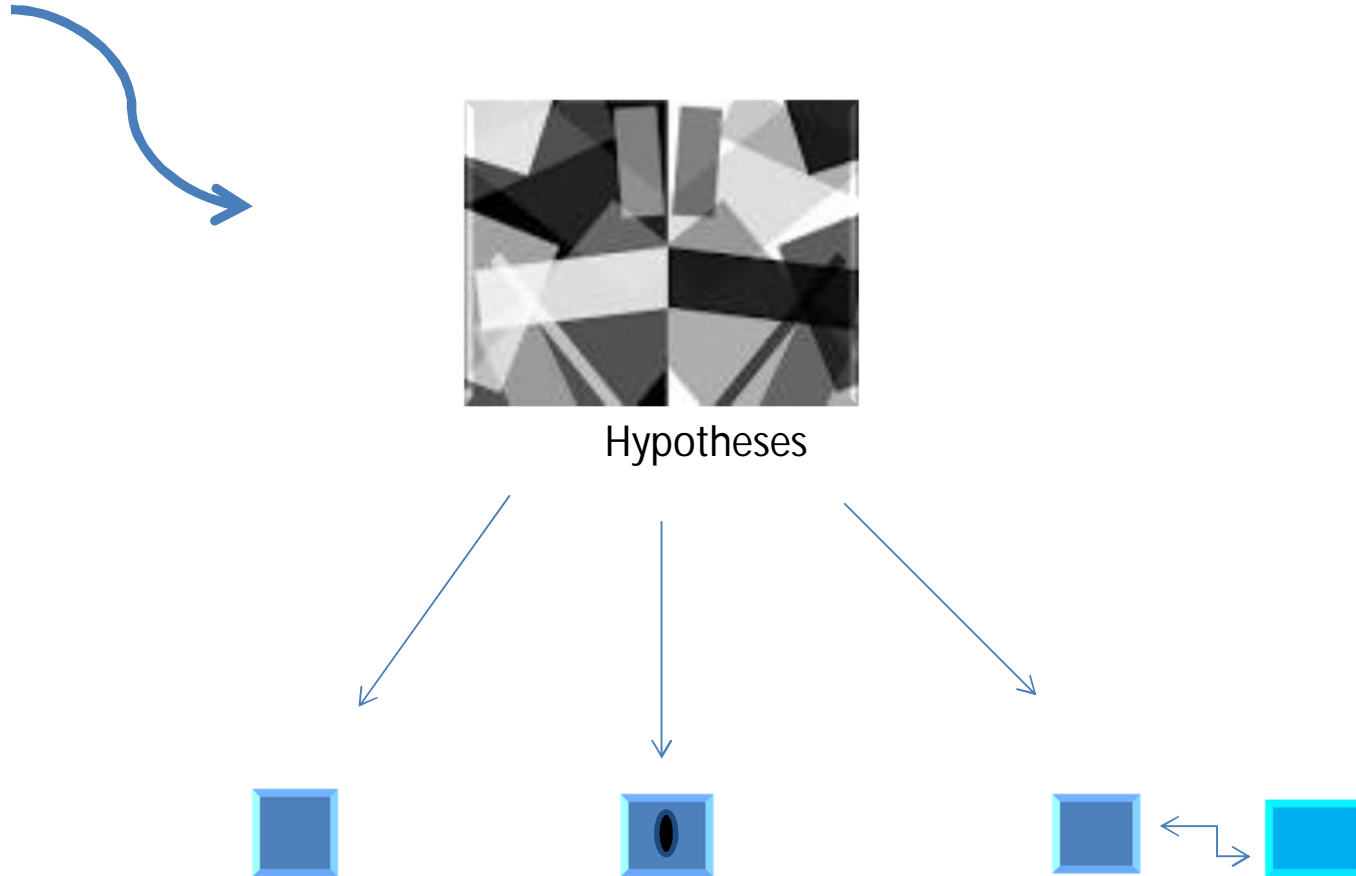


- Interviews with the personnel of the





Institutional Isomorphism

(DiMaggio and Powell 1983)



Findings

- There is a strong, effective understanding of safety among the international nuclear energy organisations 
- At the same there are some tendencies towards blindness 
- Also some contradictory emphases



Two different emphases in achieving safety



Characteristics of Finnish nuclear safety regulation

- professional, trust-, and control-based regulation that includes grass-roots level, relatively detailed, proceduralised, ambitious, technical and risk-informed safety regulations



FINNISH NUCLEAR SAFETY REGULATION BASED ON FUNCTIONAL TRUST

- FUNCTIONAL

FUNCTIONAL TRUST
(based on verification)

FUNCTIONAL DISTRUST
(justified cautions)

RISK

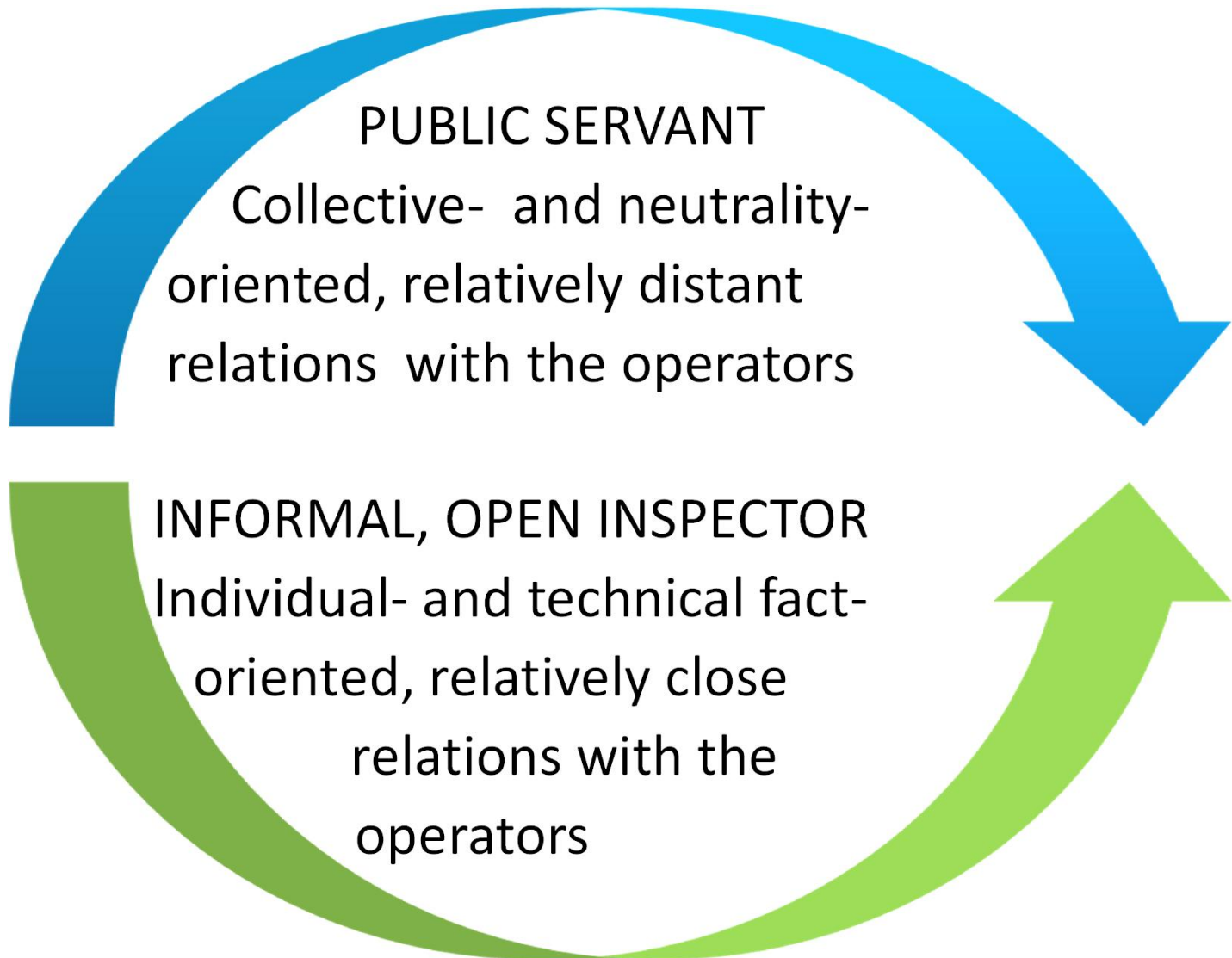


- DYS-
FUNCTIONAL

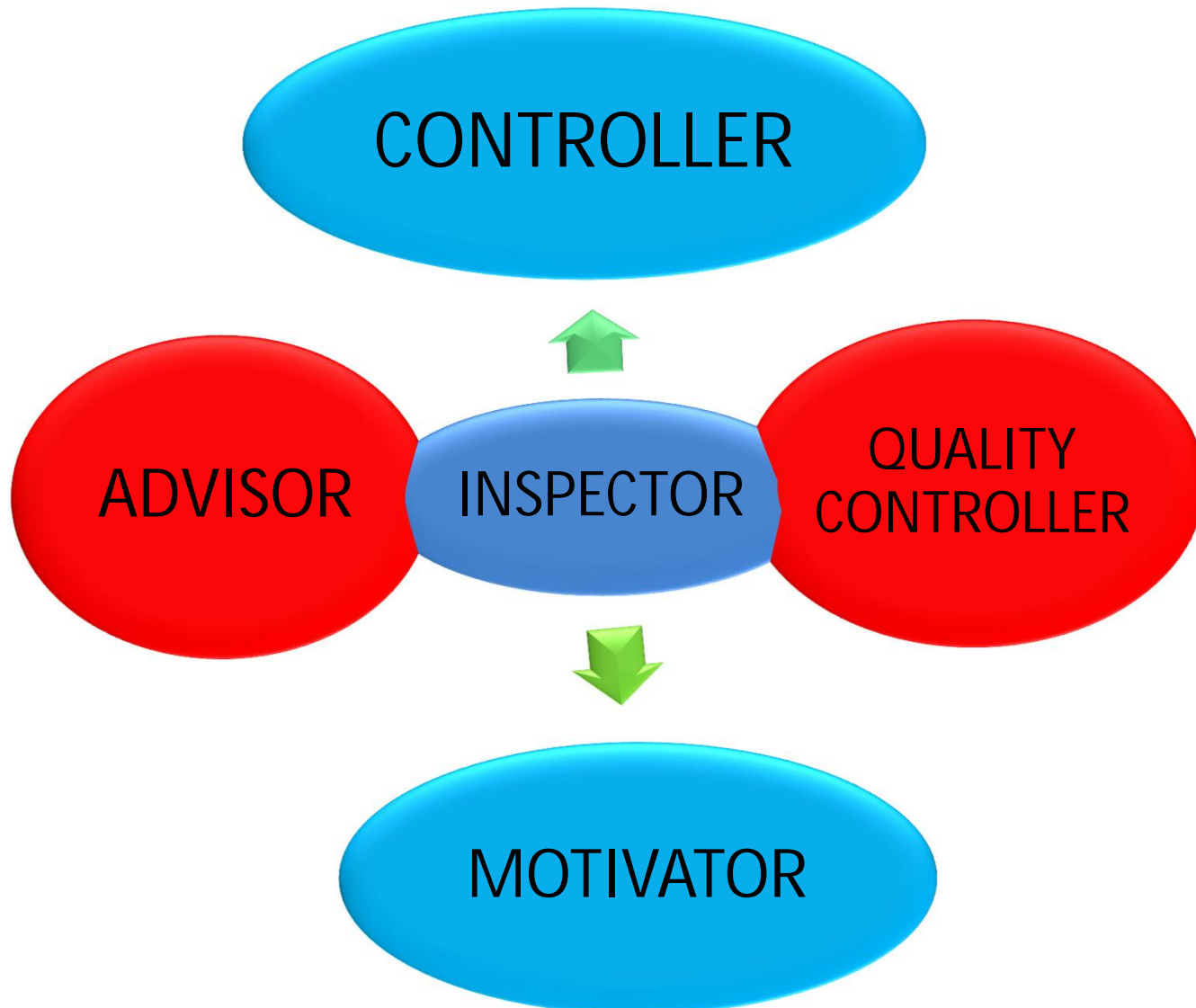
DYSFUNCTIONAL
TRUST
(naive, blind trust)

DYSFUNCTIONAL
DISTRUST
(detailed control)

TWO TYPES OF INSPECTORS



DESIRABLE AND UNDESIRABLE ROLES



JUSTIFICATIONS OF INDEPENDENCE

INSTITUTIONAL

(STUK independent from the body that allows licenses)

PROFESSIONAL SKILLS
& ETHICS



DECISION-MAKING

(Inspectors' decisions independent from the expectations of operators)

EVERYDAY PRACTICES

(refusal of offered lunches as an indication of "independence works")

Conclusions

- Despite the homogenisation of international nuclear safety regime and safety approaches, cultural characteristics affect nuclear safety
- Finnish regulatory regime is closer to command & control style, yet open to negotiations
- Relatively detailed regulation may easily be interpreted as distrust by outsiders
- Mitigating elements, such as grass-roots level interaction between operators and inspectors
- Current regulatory reality entails fragmented knowledge, interdependencies => need for motivation,
- Multifaceted safety issues require co-operation => recognition and respect of different expertise
- Need to look beyond the plants in order to understand safety