

# Solidarities and Learning

## Reporting Incidents in a Belgian Nuclear Research Center

Nicolas Rossignol

- There is more to say about “Incident Reporting Systems” (IRS) than:
  - Barriers to reporting → let’s list them and solve the problems
  - Organization’s safety culture should be improved → let’s train our employees
- Unpack the **practices, meanings** and **forms of knowledge** related to IRS

# Solidarities - Learning

**Safety**



Collective Learning



Incident Reporting Systems

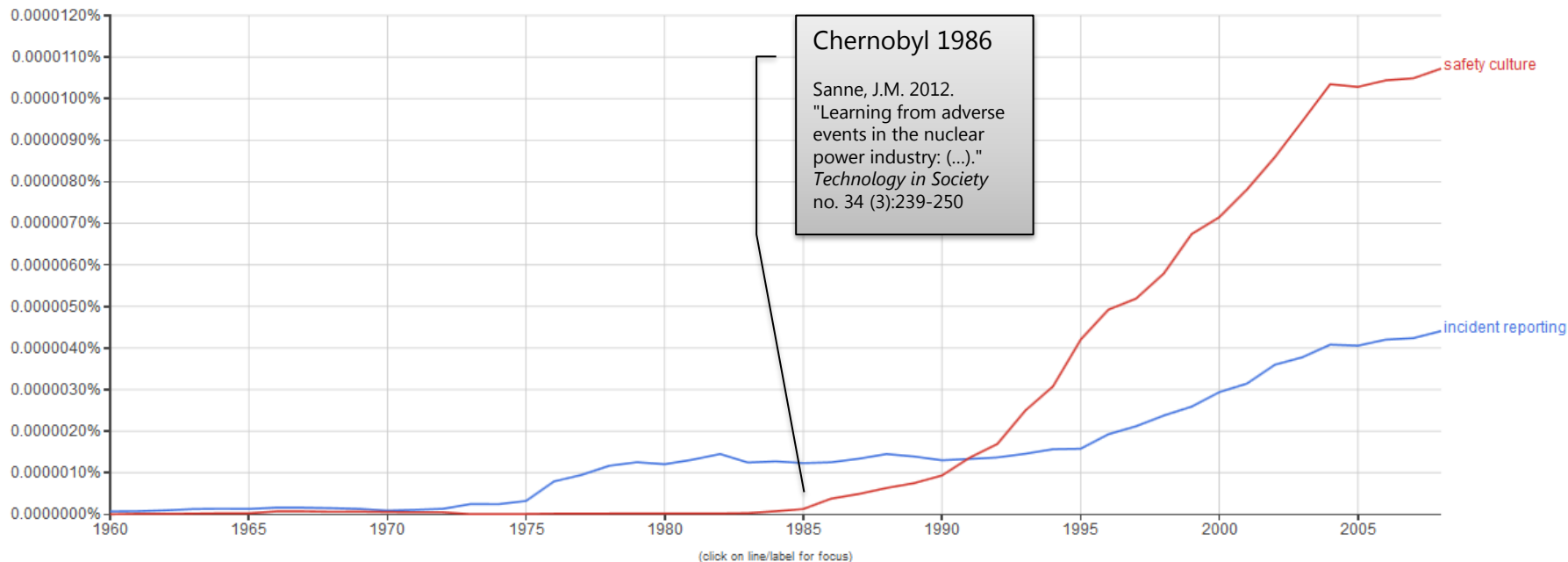


# Incident Reporting

- Morgan and Wozniak (1977): Safety programs in hospitals
- Cocks and Rogerson (1978): Chemical plants

Google books Ngram Viewer

Graph these comma-separated phrases:   case-insensitive  
between  and  from the corpus  with smoothing of  [Search lots of books](#)

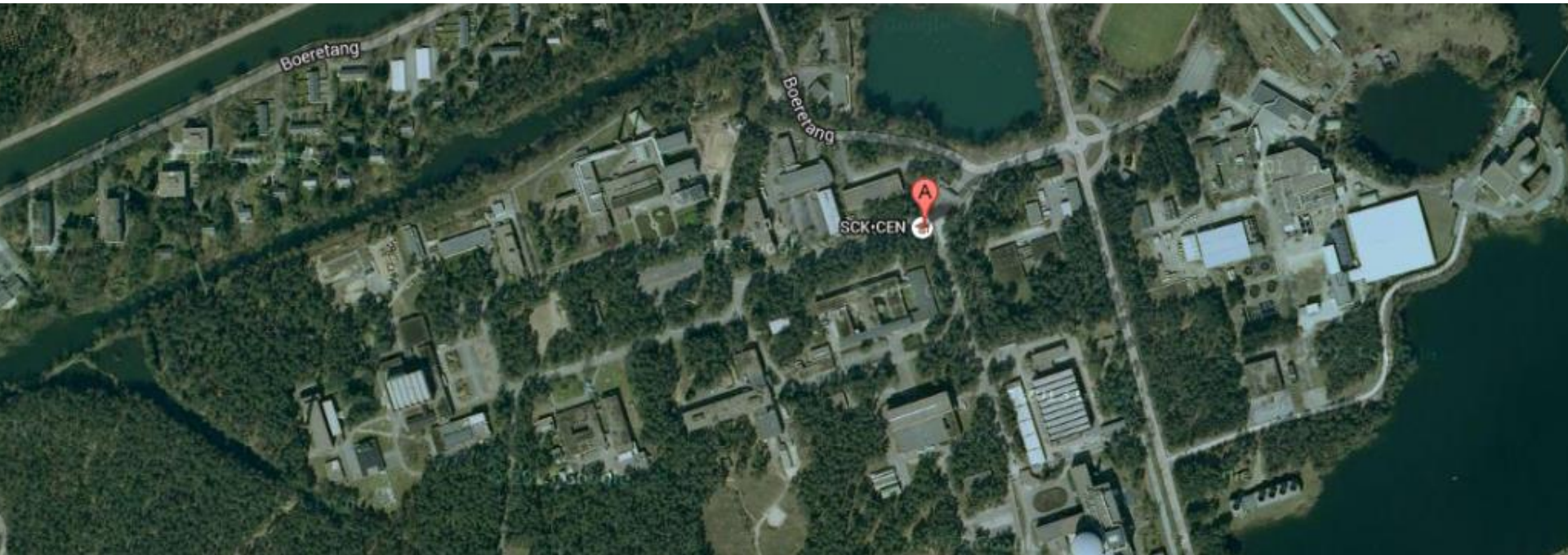


Morgan, J. A. and Wozniak, P. R. (1977), 'Reducing direct and indirect losses', *Hospital Progress*, 58 (11), 88-89 + 106.

Cocks, R. E. and Rogerson, J. E. (1978), 'Organizing a process safety program', *Chemical Engineering (New York)*, 85 (23), 138-46.

# Belgian Nuclear Research Center SCK•CEN

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700 employees

Nuclear Reactors, Technology Building, Chemistry Building...

Research on Nuclear Energy

# Opening the black box of the Technology

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## **Bijker (1995):**

- A *technology* has at least three layers of meanings:
  - **physical artifacts** (such as an incident reporting database and interface),
  - **human activities** (such as processes of reporting incidents),
  - and **knowledge** (such as the lessons that emerge from the processes of reporting incidents).
- The word *technology* is applied to:
  - hardware and software technology (such as a reporting system)
  - as well as to **social technology** (such as procedures and practices of reporting).
- Artifacts do not have inherent meanings, and technological development is shaped by the meanings given to an artifact by relevant social groups: **interpretive flexibility**

- **28 interviews and mind maps**
  - Technical workers, Ph.D. Students, Lab managers, Heads of Research Group, Radioprotection Officers, Safety Department Executives.
  - 3 incidents / 3 buildings
  - Internal procedures, IRS interface, Incidents Reports
- **Thematic Analysis using Nvivo**

Prainsack and Buyx (2012):

“Solidarity is a **practice** – be it individual or collective – reflecting a commitment **to carry costs** in order **to assist others**”.

**Our goal: Situate solidarity practices embedded in incident reporting practices**

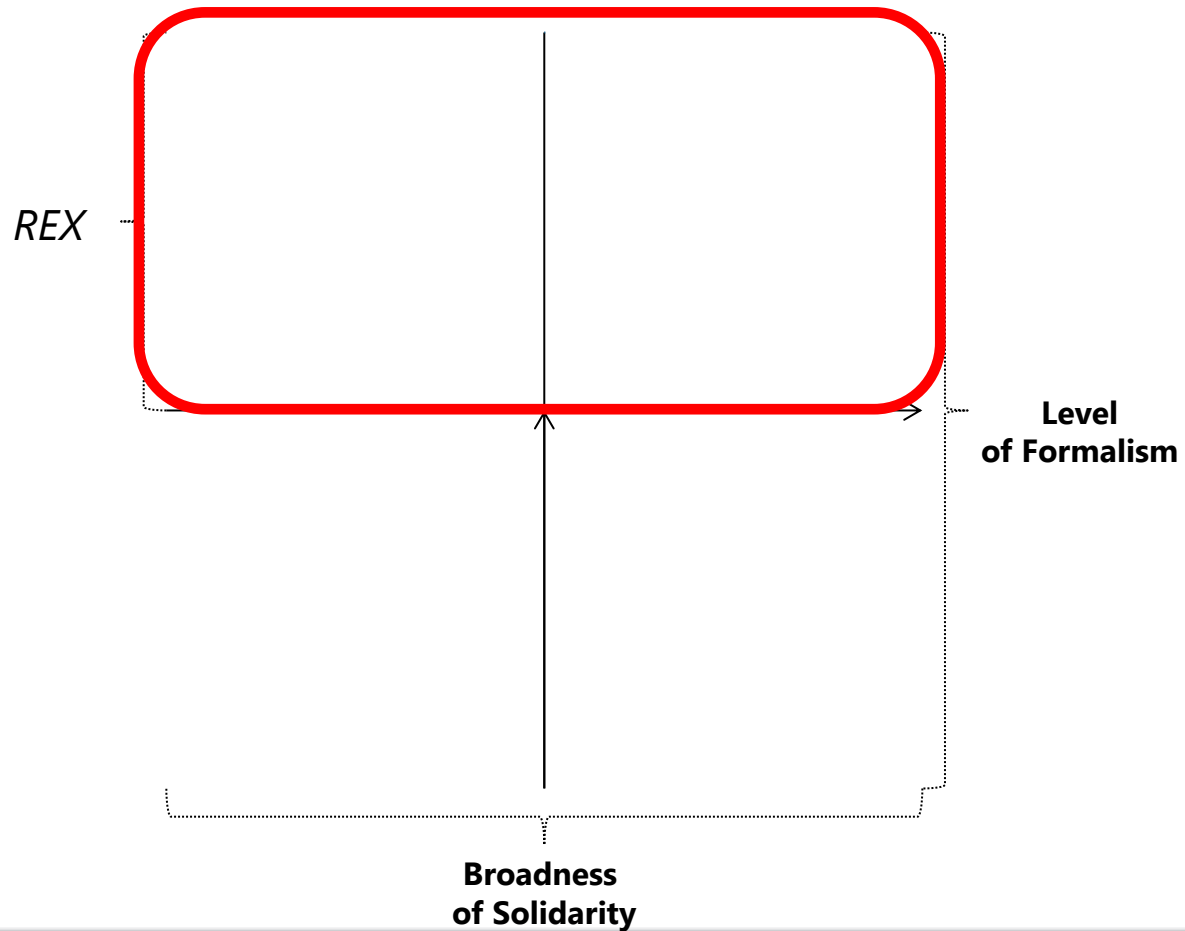


## GLOVES AND ACID EXAMPLE

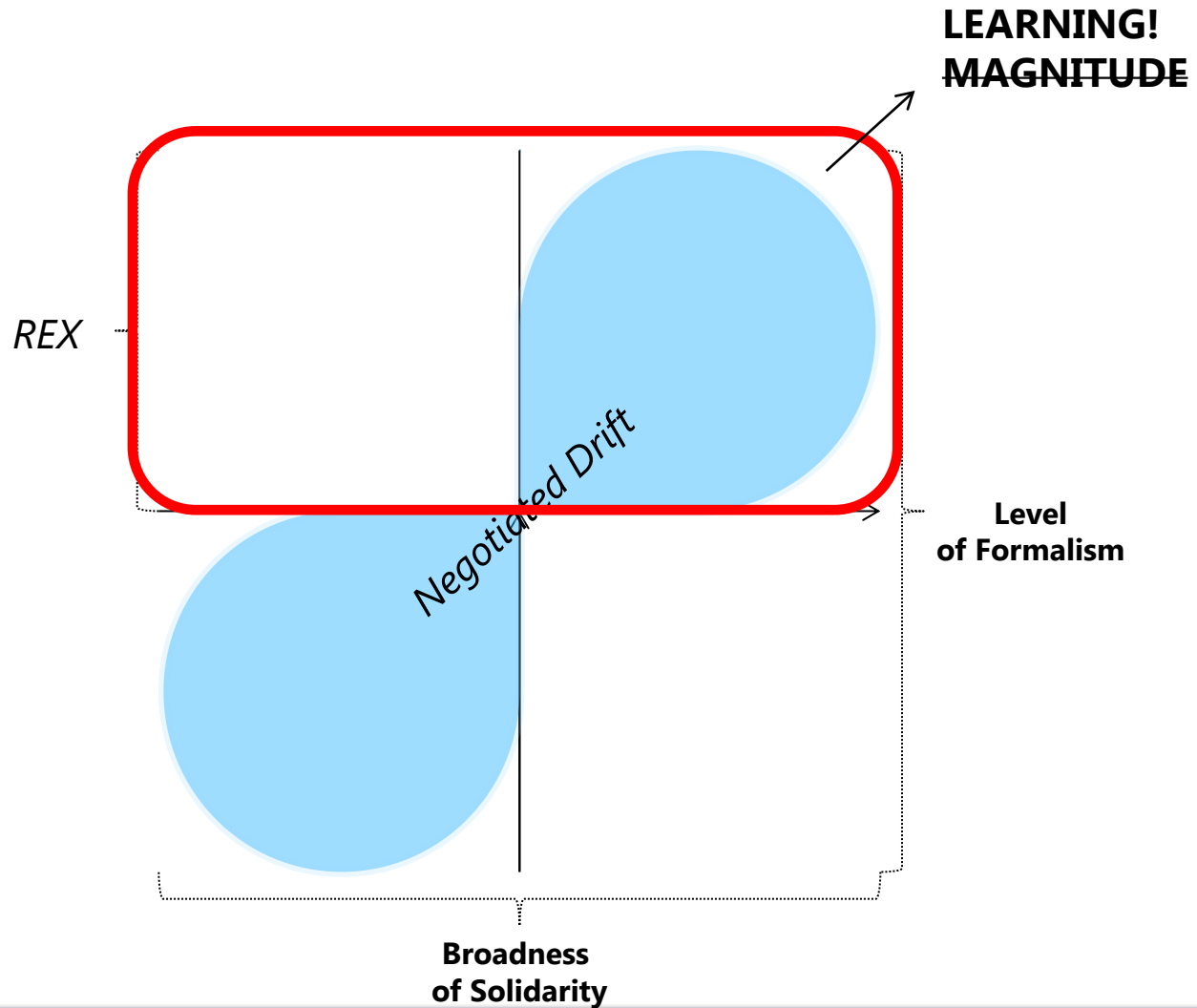


[So it was reported in the REX, because] [...] ***maybe it would be good for all SCK•CEN...*** that you tell everyone working with chemicals, if you wipe out acid with tissues, put them in a sink, a rinse with water, don't throw them with the gloves".

# Solidarity



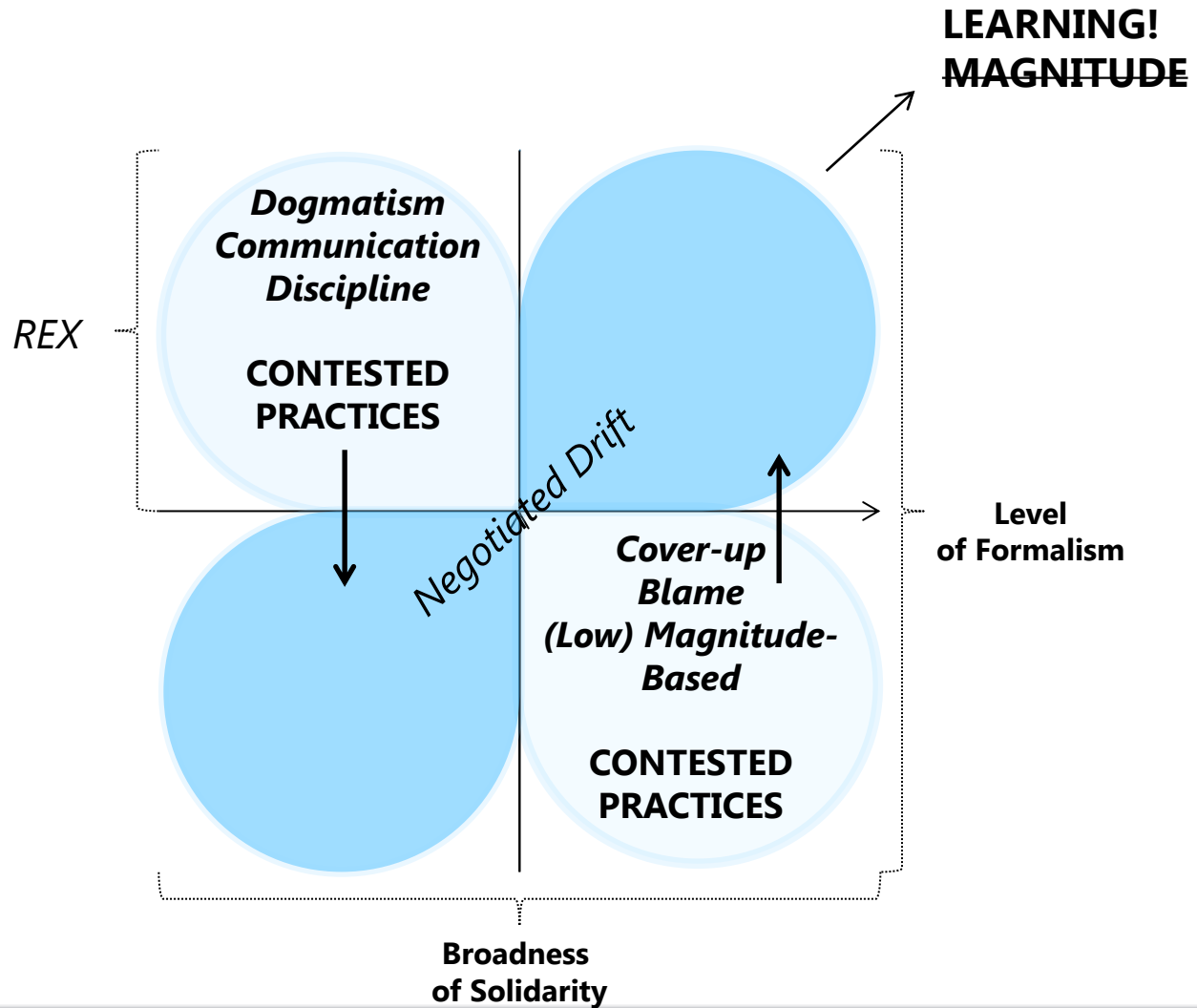
# Solidarity



## DISCIPLINE



When it's a REX, "ouuuuh", it's official. So when something is going wrong, with a colleague [I say] "**I think that you're not working very good, I make a REX on you**"



What means *learning*?

What *perspectives on learning* are to be seen in actors' practices?

**Our goal: Characterize views on learning expressed by incident reporting practices**

## 1) Relational view

Small scale team meetings, informal discussions, on the spot trainings, stories about incidents.

- Ex: Building Responsible having an “helicopter view”

“situated, (... ) relational and mediated by artefacts, (...) rooted in a context of interaction, (...) reproduced, (...) negotiated, (...) dynamic and provisional” (Gherardi and Nicolini 2000, p. 330)

“complex process of social, cultural and moral understanding and may result in changes of attitude as well as of knowledge and knowledge of knowledge” (Davies et al, 2009, p. 342)

Davies, S., et al. (2009), 'Discussing dialogue: perspectives on the value of science dialogue events that do not inform policy', *Public Understanding of Science*, 18 (3), 338-53.

Gherardi, Silvia and Nicolini, Davide (2000), 'To Transfer is to Transform: The Circulation of Safety Knowledge', *Organization*, 7 (2), 329-48.

## 2) Material view

New procedures, rules, standards resulting from:

- Punctual adaptations after incidents
- Database digging

“transmission-and-acquisition” model (Sawyer 2006), which sustains that learning consists in “memorizing and mastering material presented by the ‘experts’” (Davies et al. 2009, 341), viewing knowledge as something [...] material, that can be sent, transported and stored (Gherardi and Nicolini 2000).

Davies, S., et al. (2009), 'Discussing dialogue: perspectives on the value of science dialogue events that do not inform policy', *Public Understanding of Science*, 18 (3), 338-53.

Gherardi, Silvia and Nicolini, Davide (2000), 'To Transfer is to Transform: The Circulation of Safety Knowledge', *Organization*, 7 (2), 329-48.

Sawyer, R.K. (2006), 'Analyzing Collaborative Discourse', in R.K. Sawyer (ed.), *Cambridge Handbook of the Learning Sciences* (New York: Cambridge University Press), 187–204.



# Learning

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## Material view

Establishing *the* story  
Procedures  
Database  
Probabilistic conjectures  
Mechanical circulation of knowledge

## Relational view

Circulation of *stories*  
Contextualized  
Dynamic and flexible  
Co-production of knowledge  
Practices



**ACCOUNTABILITY**



**AUTONOMY**

# HYBRIDIZATION

- Cross-breeding risk research and STS allows to provide another perspective on IRS.
- What is to be said about such hybridization in terms of risks or vulnerabilities?
- How could it be situated into a more macro analysis (including other actors: FANC, BelV, IAEA)?



# THANK YOU

**Nicolas Rossignol**

University of Liège, SPIRAL Research Center  
and Belgian Nuclear Research Center

[n.rossignol@ulg.ac.be](mailto:n.rossignol@ulg.ac.be)