When safety research meets safety practice

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Two parts in this lecture

Part 1

Safety Research, Where are we now in the 2020s?

- Evolution or Revolution?
- Safety research and Safety Practice: successful cases

Part 2

Safety Culture & the Safety Profession

- Anything wrong with safety culture?
- What is going on with the safety profession?

I have been involved in safety research for about 20 years

Ethnographic work in safety-critical organisations

- Chemical
- Oil & Gas
- Nuclear

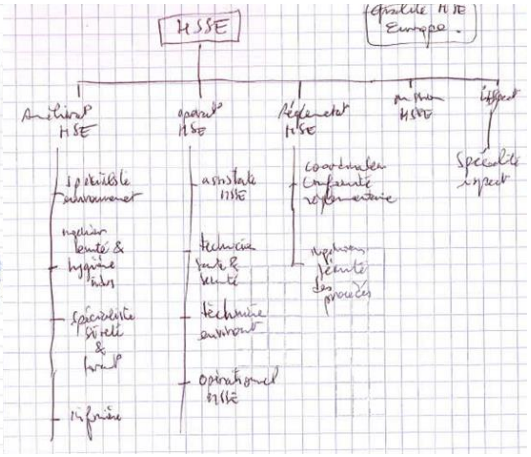
Historical and conceptual approach of the safety field

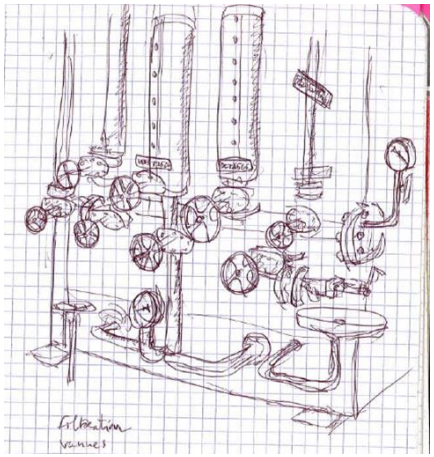
Development of broad (multilevel) views of safety articulating

- Technology and task
- Structure and culture
- Strategy
- Environment

I have been involved in safety research for about 20 years

A few words about ethnography: Studying practices of a diversity of actors through fieldwork, spending time interviewing and observing practices





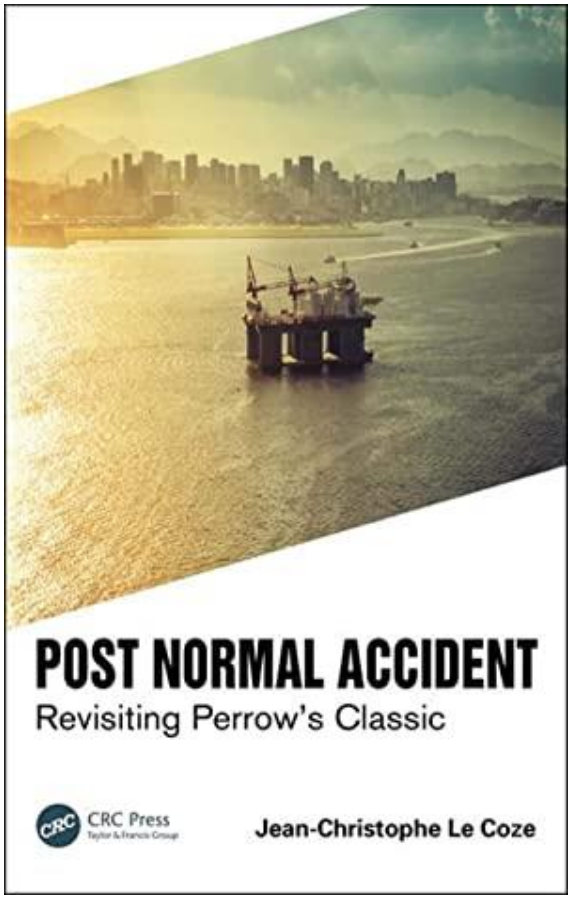
An example of a recent study

- Organisational safety assessment of a nuclear company with several very large facilities
  - 180 interviews
  - 10 feedback sessions with the company
- Multilevel perspective from bottom to top
  - From control rooms…
  - …to company's strategy, & regulatory context

I have recently edited a book on the evolutions, challenges and new directions in safety research

2019

I have also published a book revisiting Perrow's classic



2020

These two books are **closely connected**, they both explore contemporary trends in relation to safety

Both books contribute to an update of our safety mindset to the contemporary situation

Today, I talk about the first of these two books

Part 1

Safety Research

Where are we now in the 2020s?

- Evolution or Revolution?
- Safety research and Safety Practice: successful cases

This book started as a workshop in Paris in 2017

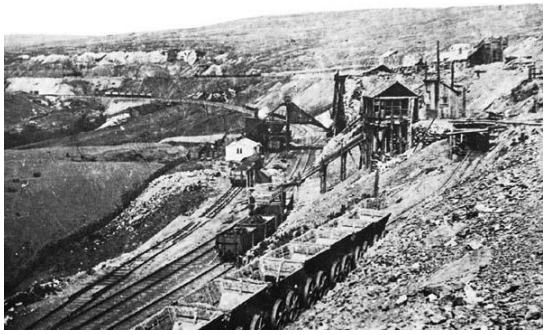
Diverse authors in the safety field were invited to discuss about contemporary topics

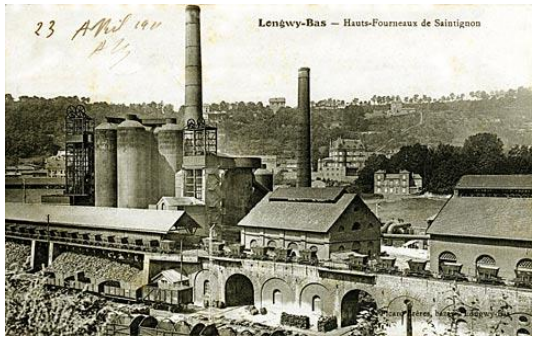
What was the idea behind the workshop?

What was the idea behind the workshop?

The idea was that safety as an academic discipline is about 40 years old

Not that safety methods, practices or laws did not exist before the 1970s of course ….





What was the idea behind the workshop?

…but it became a more academic domain in the 1970s with the advent of some large technical systems

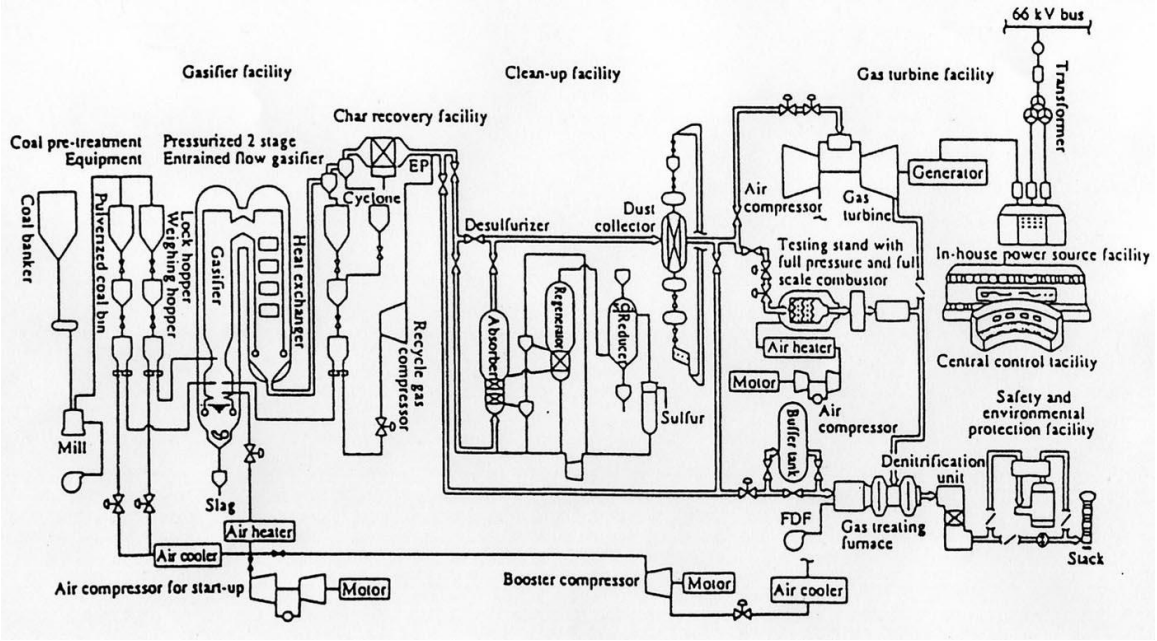
Nuclear power plants

Nuclear weapons

Commercial aviation

What was the idea behind the workshop?

In the 1970s, a number of issues to tackle for preventing events (1/3)



Safety engineering and technical systems

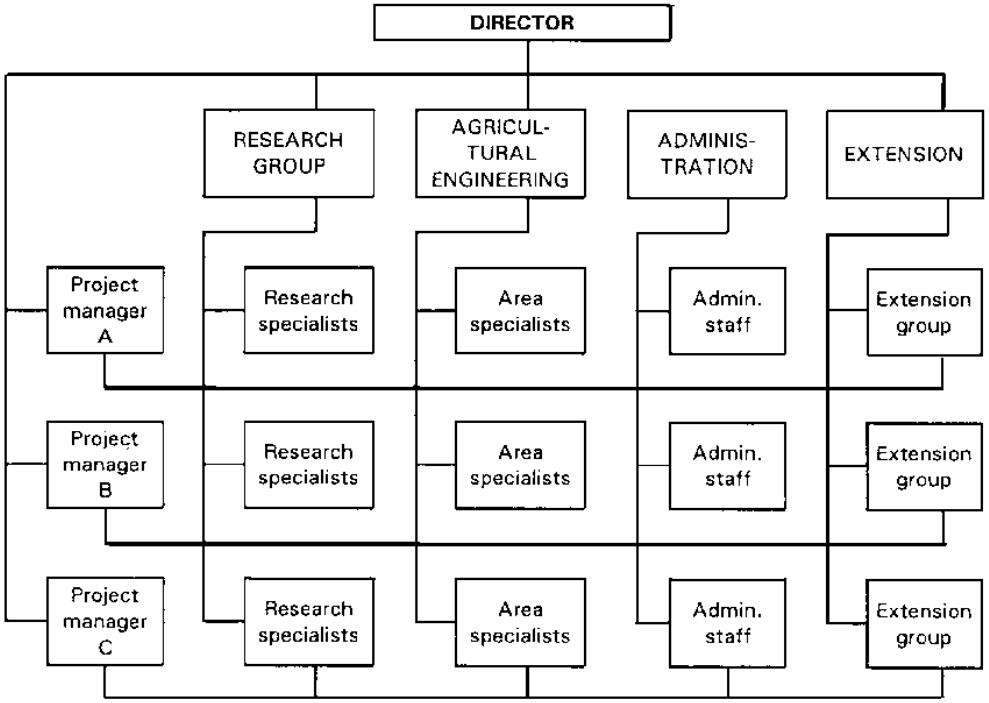
What was the idea behind the workshop?

In the 1970s, a number of issues to tackle for preventing events (2/3)

Human factors, work situations and control rooms

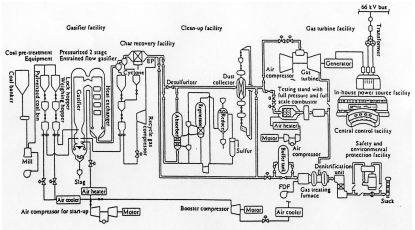
What was the idea behind the workshop?

In the 1970s, a number of issues to tackle for preventing events (3/3)



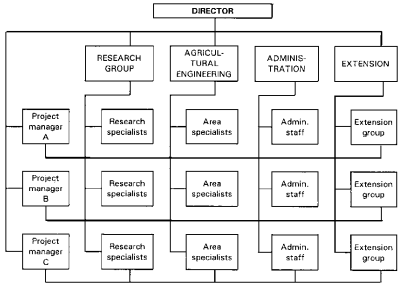
What was the idea behind the workshop?

In the 1970s, a number of issues to tackle for preventing events



Safety engineering and technical systems

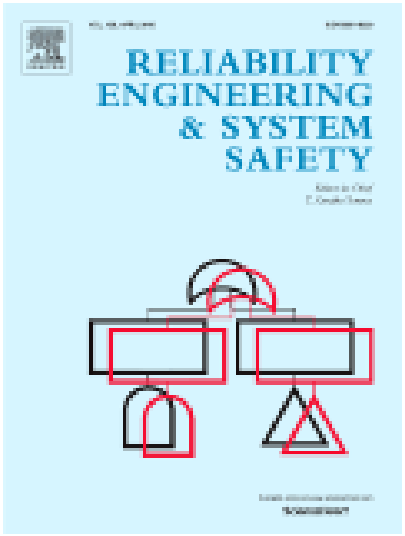
Human factors, work situations and control rooms



Businesses, regulation and complex organisations

What was the idea behind the workshop?

…new scientific journals were created, institutionalising the field



What was the idea behind the workshop?

Some keys ideas were produced in the 1980s and 1990s during a sort of **'golden age'** for safety

This **'golden age'** is characterised by at least two aspects:

- A series of 'high-profile events'
- The production of 'research traditions'

A ‘golden age’ of safety research 1980s/1990s

A series of ‘high-profile events

Tchernobyl, 1986.

Challenger, 1986

Bophal, 1984

Piper alpha, 1988

The ‘golden age’ of safety research 1980s/1990s

The production of ‘research traditions’ around authors

- **Incubation, culture and learning**: Barry Turner, Nick Pidgeon and David Blockley
- **Human error, Interface Design & System Safety**: James Reason, Jens Rasmussen, Erik Hollnagel, David Woods
- **Normal Accidents & the critical perspective:** Charles Perrow, Lee Clarke, Scott Snook
- **High-Reliability Organisations**: Karlene Roberts, Karl Weick, Todd LaPorte
- **Safety Climate, leadership, and Management**: Rhona Flin, Eduardo Salas, Amy Edmondson,
- **Socio-constructivist perspectives**: Ron Westrum, Diane Vaughan, Brian Wynne

Piper alpha, 1988

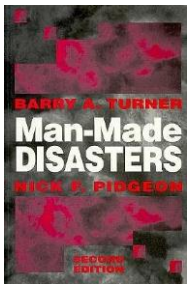
Bophal, 1986

Tchernobyl, 1986.

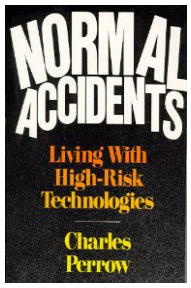
The ‘golden age’ of safety research 1980s/1990s

These research traditions were developed by authors then networks of authors who strengthened the basis of these traditions

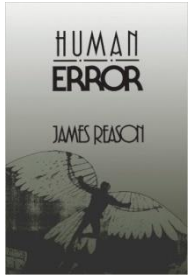
You might know some of these authors and their books of the 1980s and 1990s



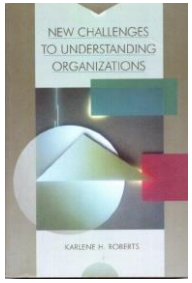
1978



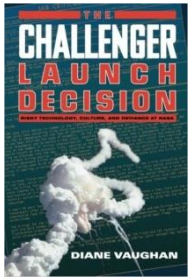
1984



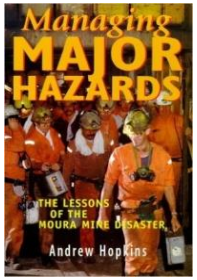
1990



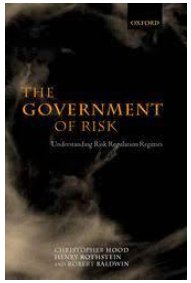
1993



1996



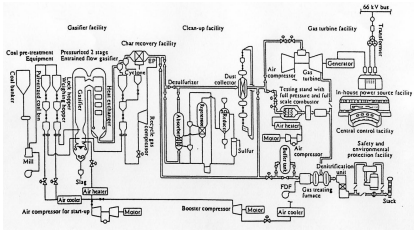
1999



1999

A question '*Where are we now in 2020?*'

1970 1980 1990 2000 2010 2020



Safety engineering and technical systems

Human factors, work situations and control rooms

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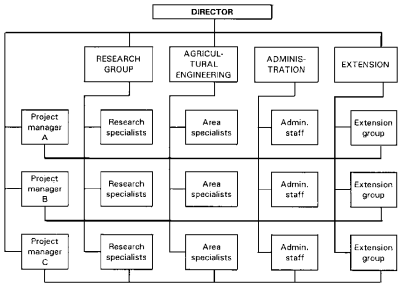


Businesses, regulation and complex organisations

A question '*Where are we now in 2020?*'

Four key aspects:

- Changes in the operating landscape of safety-critical systems
- And major events keep on happening…
- Safety research in this context:
  - New insights
  - Debates and controversies

Evolution or Revolution in Safety Research?

A question '*Where are we now in 2020?*'

1980 1990 2000 2010

?

What happened between the 1980s and now?

A question '*Where are we now in 2020?*'

Changes in the operating landscape of safety-critical systems

Globalisation, Global Capitalism

- New economy and information technology, digital societies
- Decreased cost and increased speed of transport
- Increase of services in the 'post-industrial' society
- Privatisation of companies and evolution of state regulations
- A global world market (e.g. mergers) and financialisation of the economy
- New social movements (feminism, ecology)

A question ‘Where are we now in 2020?’

Major events keep on happening…a selection

Deep Water Horizon
2010

Fukushima Daichi
2011

Costa Concordia
2012

Grenfell Tower, London
2017

Boeing 737 Max
2018/2019

Brumadinho Dam Collapse
2019

A question '*Where are we now in 2020?*'

But of course, major events are only the tip of the iceberg …

The reality is also one of highly-performing safety critical system around the world on an everyday basis










We need to explain these properties …

A question '*Where are we now in 2020?*'

The reality of the daily life of these safety-critical systems is quite fascinating, **how do they perform safely?**

Selection of 15 authors who bring new insights based on diverse 'research traditions' to help figure this out

The strategy behind the book was to provide many new ideas from a broad range of angles to orient, situate and stimulate safety research

Providing a big picture

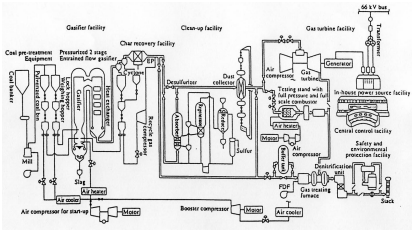
The chapters are followed by reflections by some of the pioneers of the safety field and research traditions

Safety Research: Evolution or Revolution?

New insights

I **selected three insights** which update our current mindset, on

1970 1980 1990 2000 2010 2020

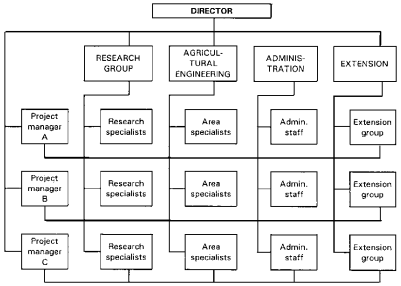


Safety engineering and technical systems

J. Downer on Risk Assessment
Ch. 5

Human factors, work situations and control rooms

T. Haavik on interfaces & work environment
Ch. 7



Businesses, regulation and complex organisations

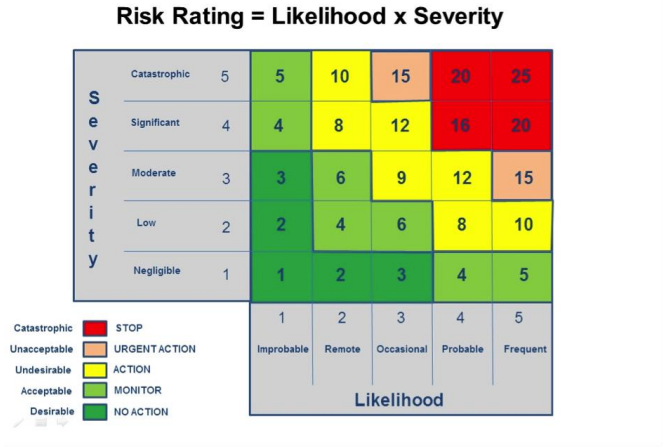
T. Reiman & S. Shorrock Research and practice on organisational topics
Ch 13 & 14

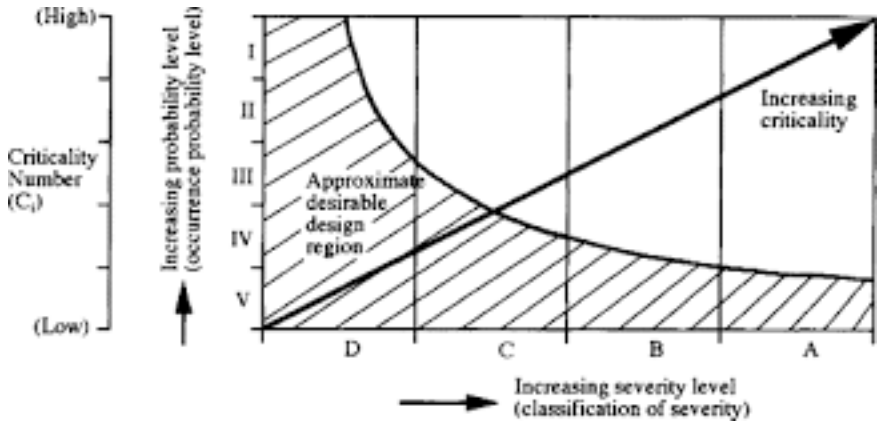
Safety Research: Evolution or Revolution?

New insights (a selection): Risk Assessment

John Downer develops ideas which might sound radical:

- Risk assessments are **constructed**, not 'objective'
- They contain a **subjective** dimension which is often hidden, implicit
- Yet, high level of reliability and safety can be attained, how is it possible … I let you found out how John Downer approach this 'paradox'



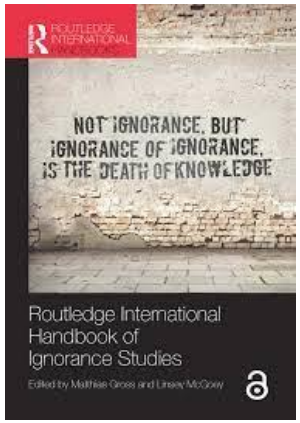


Safety Research: Evolution or Revolution?

New insights (a selection): Risk Assessment

An interesting side to this work is that it also connects risk assessment with **ignorance studies**

- How much do we know, how much do we not know?



A recent event in France, Lubrizol (2019)

- Domino Effect
- Environmental consequences
  - Health
  - Ecosystem

Risk assessment ignores a number of issues

Safety Research: Evolution or Revolution?

New insights (a selection): Risk Assessment

In a recent study that I am currently conducting on the process safety regulation in France, a number of interviews with engineers confirm the value of thinking of risk analysis in terms of 'ignorance'

Or the degree to which we decide not to know considering what it would take to do so (resources).

One engineer expresses it this way…

"*During a risk analysis, I only explore 30 to 40 % of what I could explore*"

Safety Research: Evolution or Revolution?

New insights (a selection): Risk Assessment

At least **two important aspects**:

- Cases of innovation, of new technology
- Cases of changes in operating context of safety critical systems
  - Cybersecurity
  - Climate change
    - Drought
    - Flood
    - Heat
    - Storms

How do risk assessments evolve with these new threats…?
How much do we chose to ignore?

Safety Research: Evolution or Revolution?

New insights (a selection): new work environment

Torgeir Haavik is interested in the properties of operations of many safety critical systems rely on complex interactions through increasing digitalised and distributed activities in different geographic locations

OfRC

OnRT

OEx

Safety Research: Evolution or Revolution?

New insights (a selection): new work environment

During an ethnographic research, a control room worker expressed this reality:

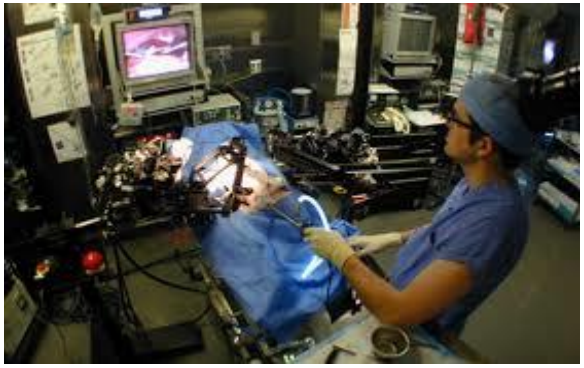
"We are not the operators anymore, the programmers are"

What are the implications of an increasingly digitalised and networked workspace with distributed features?

Safety Research: Evolution or Revolution?

New insights (a selection): new work environment

This is increasingly the direction of future safety critical systems …



When safety research meets safety practice

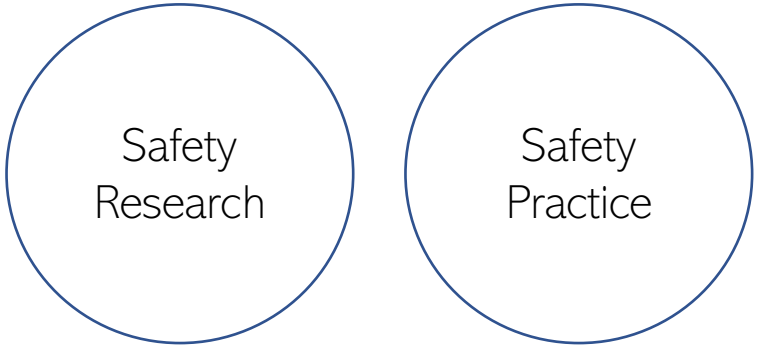
New insights (a selection): safety research & practice

Another theme: a number of chapters discuss the **relationship between safety research and safety practice**

The picture depicted by two authors in the book is one of separation between the two worlds…

T. Reiman

S. Shorrock



…but **their analysis exclude <u>TWO</u> important aspects**:

- the wider context (a 'safety market', consulting & social media)
- cases of success of research traditions meeting practice in this context

A question '*Where are we now in 2020?*'

The wider context: what has come with globalisation is also the emergence of a 'safety market'

- **Civil societies**, **regulation** and **corporations** promote safety (although of course there are contrasted situations across the world, e.g. Rana Plaza, Bangladesh, 2013)
- A '**safety market**' has emerged as a product of the explosion of consulting in the service economy for supporting companies and states
- A **safety profession** has become more structured and visible than in the past
- **Digital practices** of many people through social media bring a new context in terms of knowledge production, exchanges, controversies and discussions
- **Changes in universities**' push for private funding of research, affecting research orientation towards actionable outcomes, in a context of multiple research traditions

A question '*Where are we now in 2020?*'

What is a safety market?

To introduce the 'safety market', let's make a parallel with management … and **the fads and fashions** … with more or less 'success' …

Total Quality Management	Six Sigma
Corporate Culture	Lean Management
Balanced Scoreboard	Empowerment
Business Re-engineering	Digital disruption

A question '*Where are we now in 2020?*'

The wider context: what has come with globalisation is also the emergence of a 'safety market'

What is a safety market?

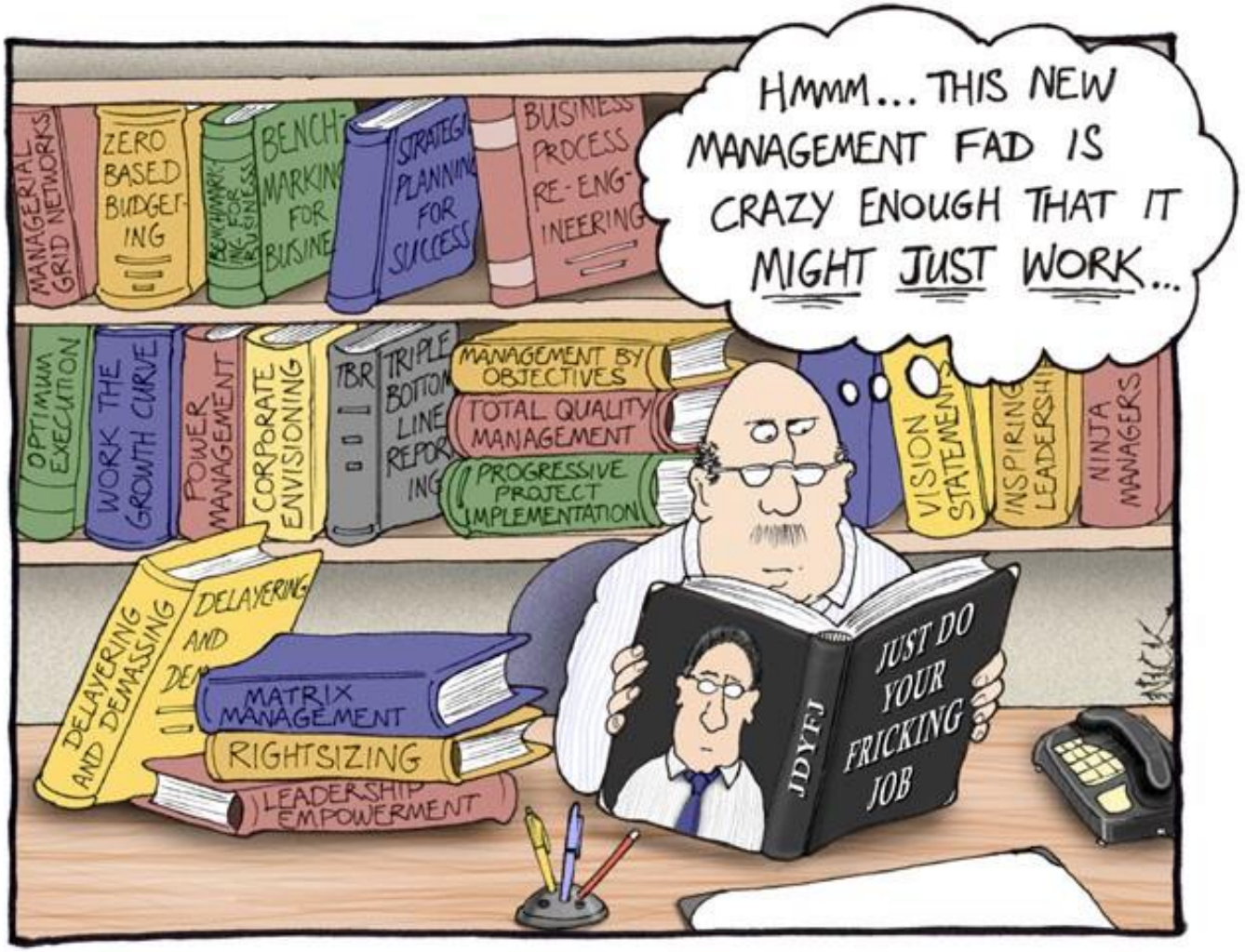
It is something similar to trends in management of the past thirty years

The funny angle

A question '*Where are we now in 2020?*'

What is a safety market?

It is something similar to trends in management of the past thirty years



When safety research meets safety practice

The same has been witnessed in safety in the past two decades

Any idea of what these are…?

Swiss Cheese Model (SCM)

Behavioural Based Safety (BBS)

Safety Management Systems (SMS)

High-Reliability organisations (HRO)

Safety checklist

Safety Culture

Golden Rules

Crew Resource Management (CRM)

Psychological Safety

Resilience Engineering / Safety I-Safety II/Safety Differently

Zero Vision

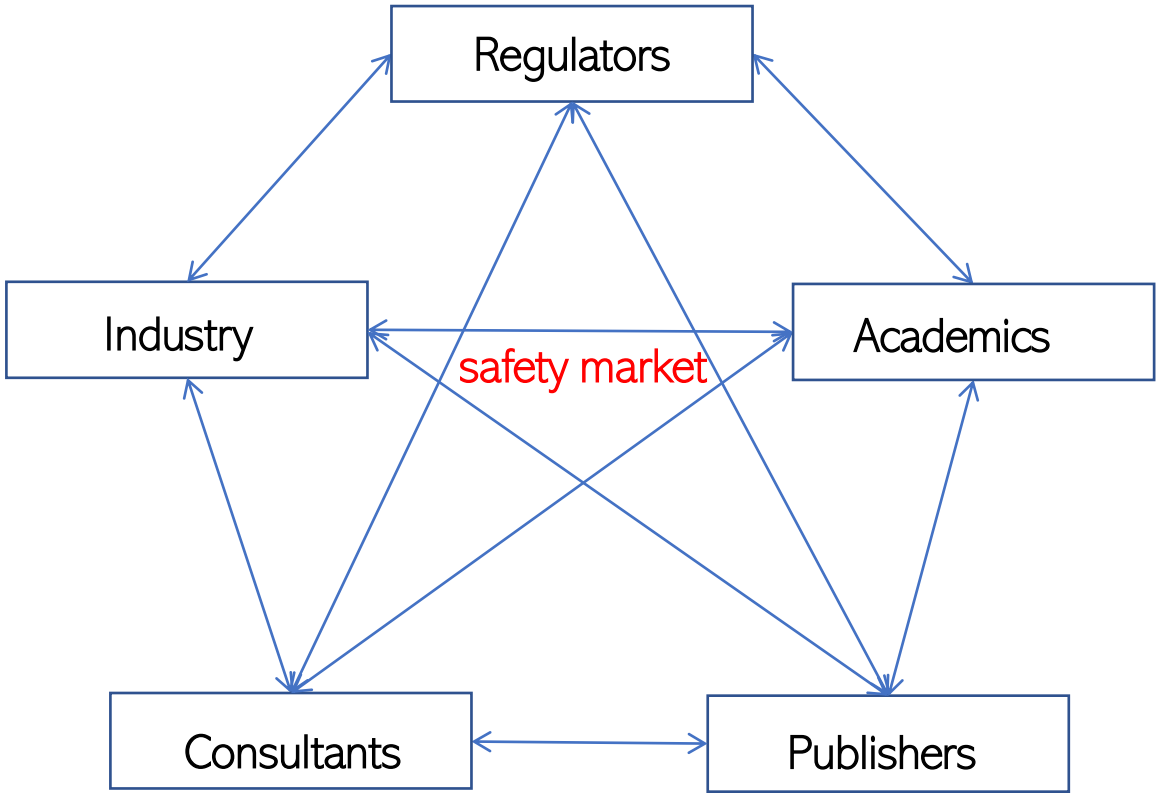
Just Culture

Mindful Leadership

A question '*Where are we now in 2020?*'

The same has been witnessed in safety in the past two decades

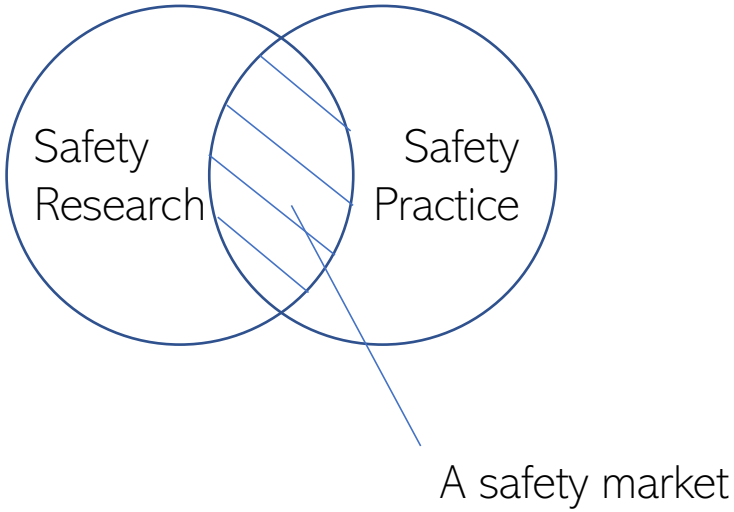
A safety market provides consulting services, it is a product of the interactions between several actors



When safety research meets safety practice

The same has been witnessed in safety in the past two decades

There are different stories behind these, but some of these are the products of a **contact zone** between safety research & safety practice where the boundaries are sometimes blurred between research/science & practice but also … business

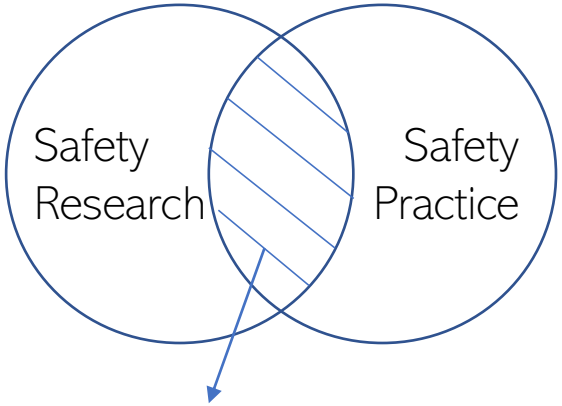


They can be described as successes bridging the gap between research and practice

When safety research meets safety practice

Cases of successes of bridging the gap

They are 'successful' research traditions meeting safety practice



Successful 'research traditions' meeting safety practice

Human error & Swiss Cheese Model
Safety culture
Crew Resource Management
Safety II, Safety Differently & Hop

'Successful' in the sense of creating much interest in practice, and much debate or controversies in research (but also practice!)

When safety research meets safety practice

Cases of successes of bridging the gap

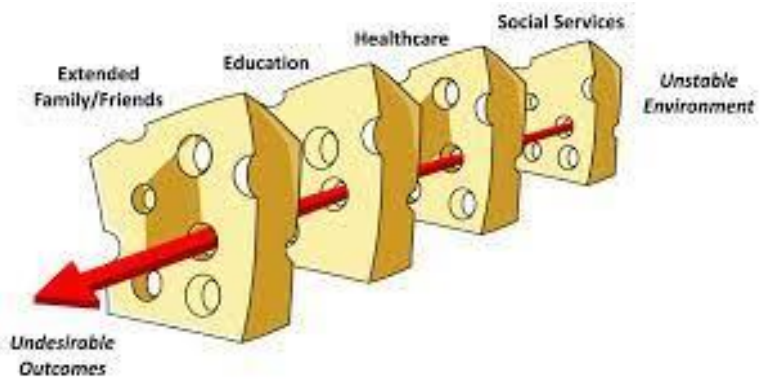
Of course, this will be very different if you work in chemical, oil & gas, maritime, aviation or nuclear industry because these industries have incorporated these ideas at different rate and speed

I would like to show that these successes have also another side made of controversies and debates which propel new and valuable ideas

When safety research meets safety practice

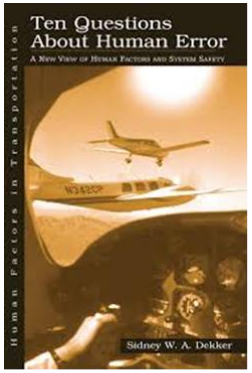
Cases of successes of bridging the gap

Who, in safety, has never heard of the Swiss Cheese Model?

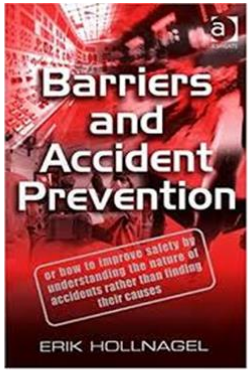


But … who knows about the **latest controversies?**

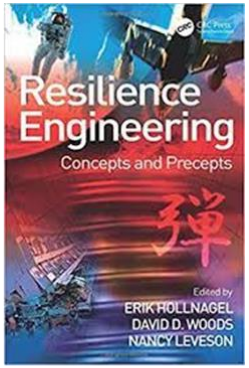
In the mid 2000s there were some explicit critiques of the Swiss Cheese Model by Hollnagel, Leveson or Dekker



2004



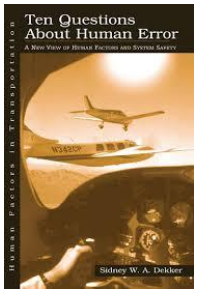
2004

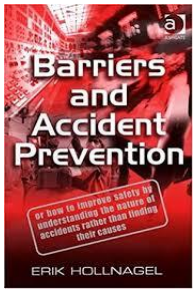


2006

When safety research meets safety practice

Cases of successes of bridging the gap

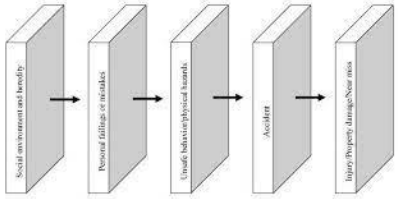




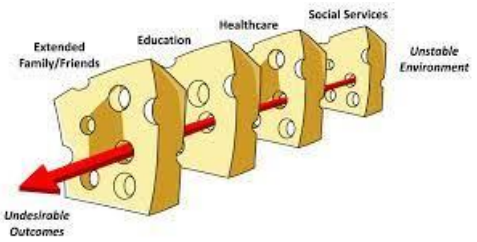
Dekker criticised the model, including:

- The negative vocabulary of unsafe acts and latent causes which structured the model
- The 'linear' causality implied by the straight arrow & ambiguity of the holes

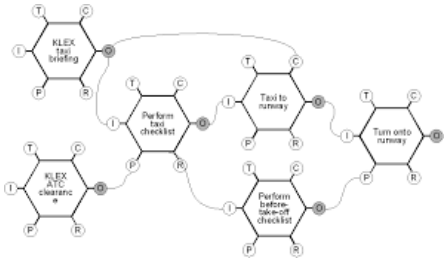
Hollnagel classified the model as 'epidemiological' and not 'systemic'



'Linear'



'Epidemiological'



'Systemic'

When safety research meets safety practice

Cases of successes of bridging the gap

It is interesting to think of two aspects behind these critiques:

1. As the Swiss Cheese Model is a popular model, **it makes sense to criticise and challenge its limits**:

   This is the expected practice of science, here, safety science research

2. But, it is also product because Swiss Cheese Model was one of the most successful one in the 1990s

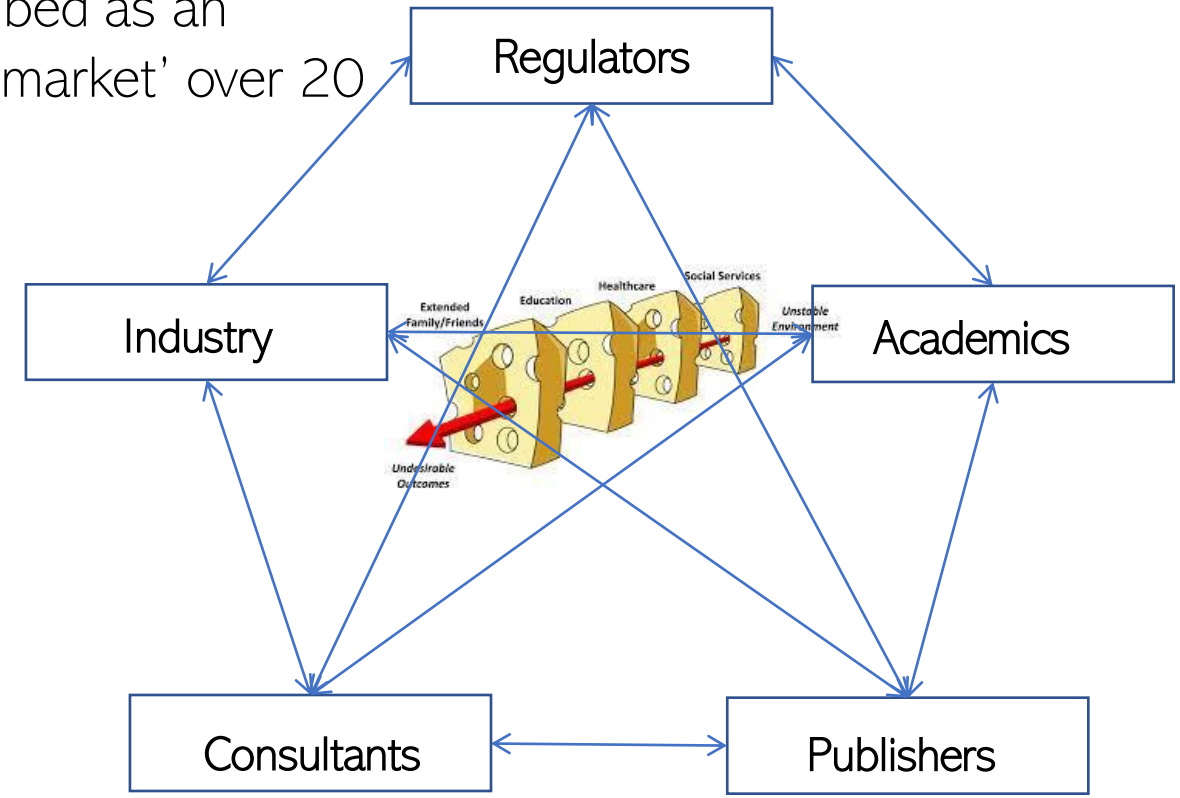
   To replace it is **to create a new 'market'**

This dual dimension seems intrinsic to the popular side of safety science research, the one which interact with practice…

When safety research meets safety practice

Cases of successes of bridging the gap

This situation is better understood when the trajectory of the Swiss Cheese Model is described as an example of the 'safety market' over 20 to 30 years…

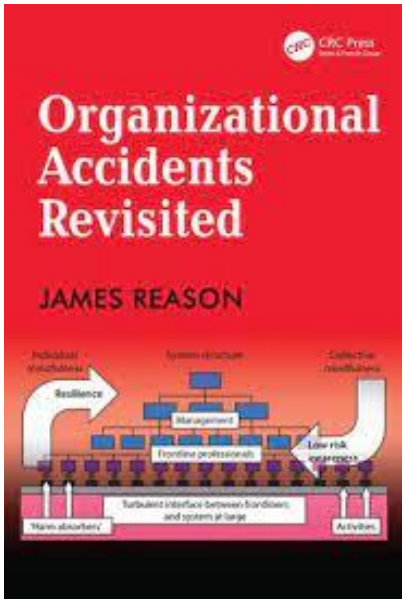


When safety research meets safety practice

Cases of successes of bridging the gap

Reason saw some biases in the critiques, and I agree with him about them but I also agree with critiques and what they help emphasise.

I personally think it is best to see models with their strengths and weaknesses rather than in absolute terms



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When safety research meets safety practice

Cases of successes of bridging the gap

There will never be one way of interpreting the Swiss Cheese Model

Drawings offer **"interpretive flexibility"**

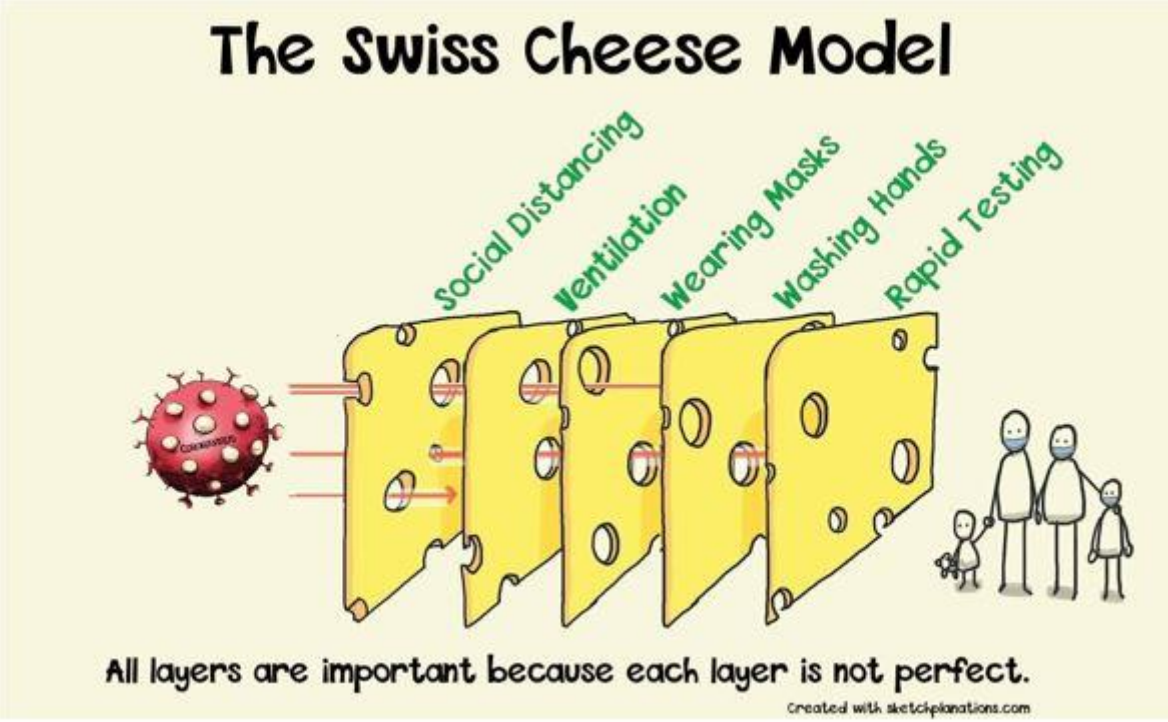
They do not dictate how they c/should be interpreted:

- I see the slices as a **metaphor** of organisational principles
- I see the 'linear' arrow as a **metaphor** of top down causality which makes sense (strategy matters!!)
- I see in the Swiss Cheese Model as a **metaphor** of systemic properties

When safety research meets safety practice

Cases of successes of bridging the gap

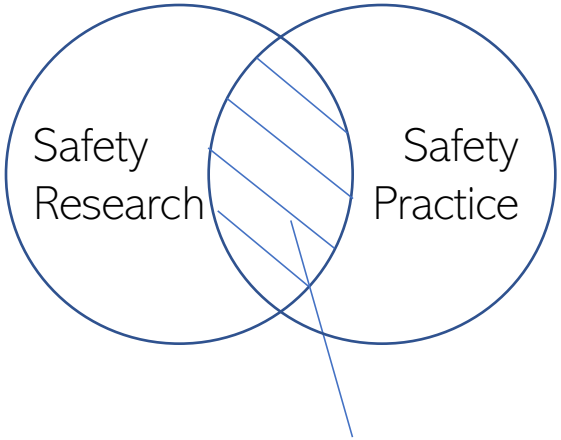
Think about the Swiss Cheese Model during the Covid-19 Pandemic!!

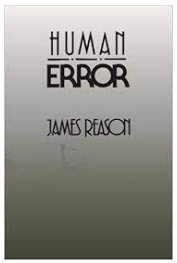


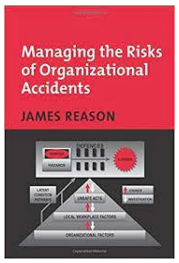
When safety research meets safety practice

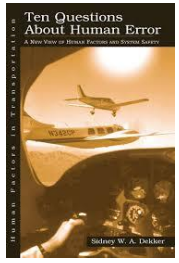
Cases of successes of bridging the gap

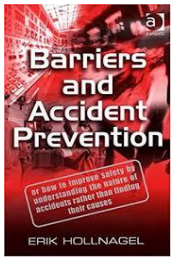
Human Error and the Swiss Cheese Model and its critiques are very good examples of successful safety research meeting safety practice

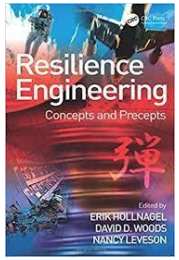


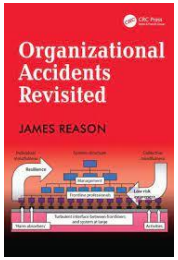












It also shows the debates, controversies and discussion it generates, there is never anything like a perfect model, even if 'successful' in practice

End of part 1

Key points

Safety Science Research is now **forty years old**

An **update of core models** is expected considering the extent of changes in the past 4 decades, including globalisation & digitalisation

Studies of John Downer on **risk assessments** or Torgeir Haavik on **digital work contexts** are new insights helping us renew our conceptual and empirical mindset

The **connection between safety research and safety practice** is an important topic, which has been questioned in recent years

Despite need for improvement, there are many example of successful links between research and practice, including swiss cheese model and its critique

Part 2

Safety Culture & the Safety Profession

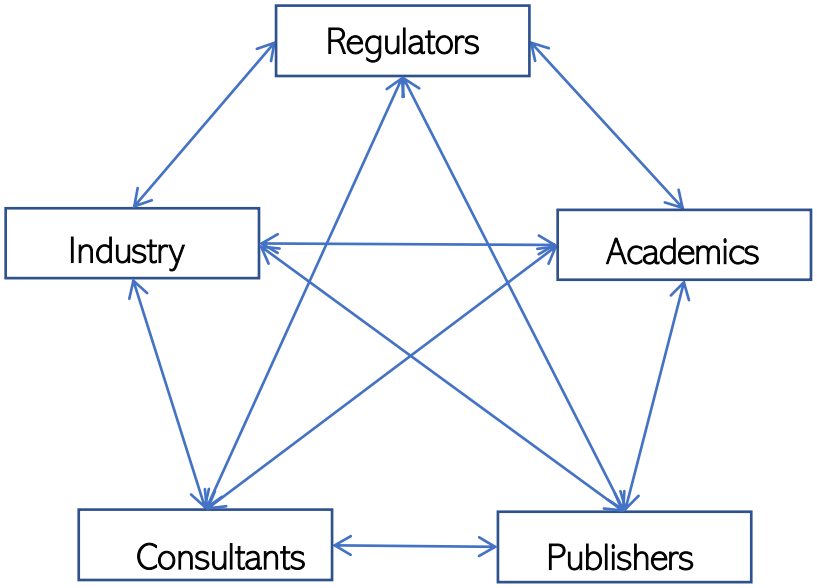
- Is there something wrong about safety culture?
- What is going on with the safety profession?

Is there something wrong about safety culture?

Thirty years of controversies

If Human Error & Swiss Cheese have been debated … Safety Culture has been equally controversial …

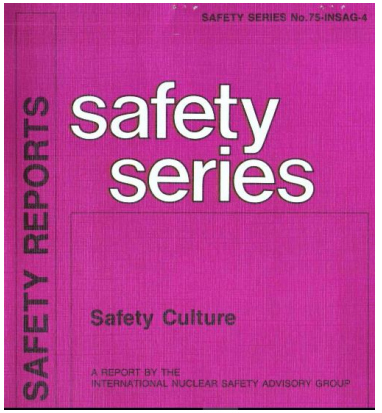
I will argue that Safety Culture is also at the heart of the 'safety market'



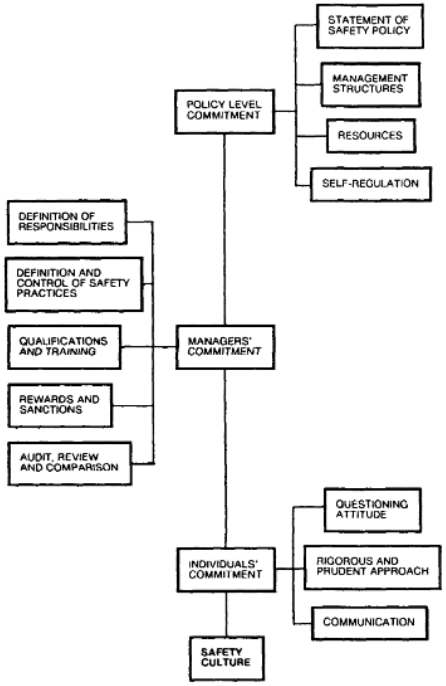
Is there something wrong about safety culture?

Thirty years of controversies

First of all, the notion of safety Culture was introduced in an official document "INSAG" following Chernobyl, 1986 then 1988, 1991, 1992

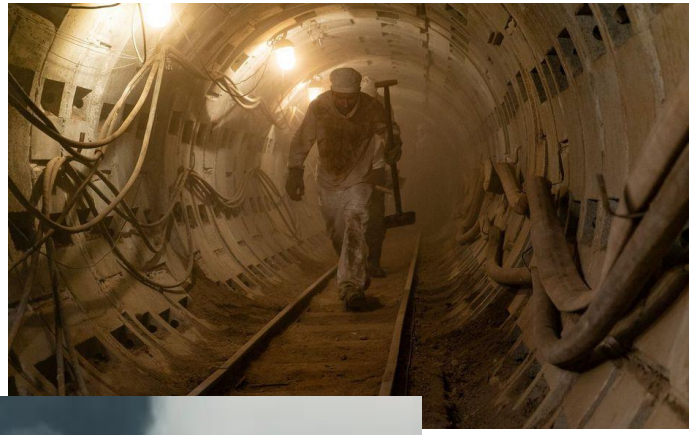


The term 'Safety Culture' was first introduced in INSAG's *Summary Report on the Post-Accident Review Meeting on the Chernobyl Accident*, published by the IAEA as Safety Series No.75-INSAG-1 in 1986, and further expanded on in *Basic Safety Principles for Nuclear Power Plants*, Safety Series No.75-INSAG-3, issued in 1988. Since the publication of these two reports, the term Safety Culture has been used increasingly in the literature in connection with nuclear plant safety. However, the meaning of the term was left open to interpretation and guidance was lacking on how Safety Culture could be assessed. The present report deals with the concept of Safety Culture as it relates to organizations and individuals engaged in nuclear power activities, and provides a basis for judging the effectiveness of Safety Culture in specific cases in order to identify potential improvements.



Is there something wrong about safety culture?

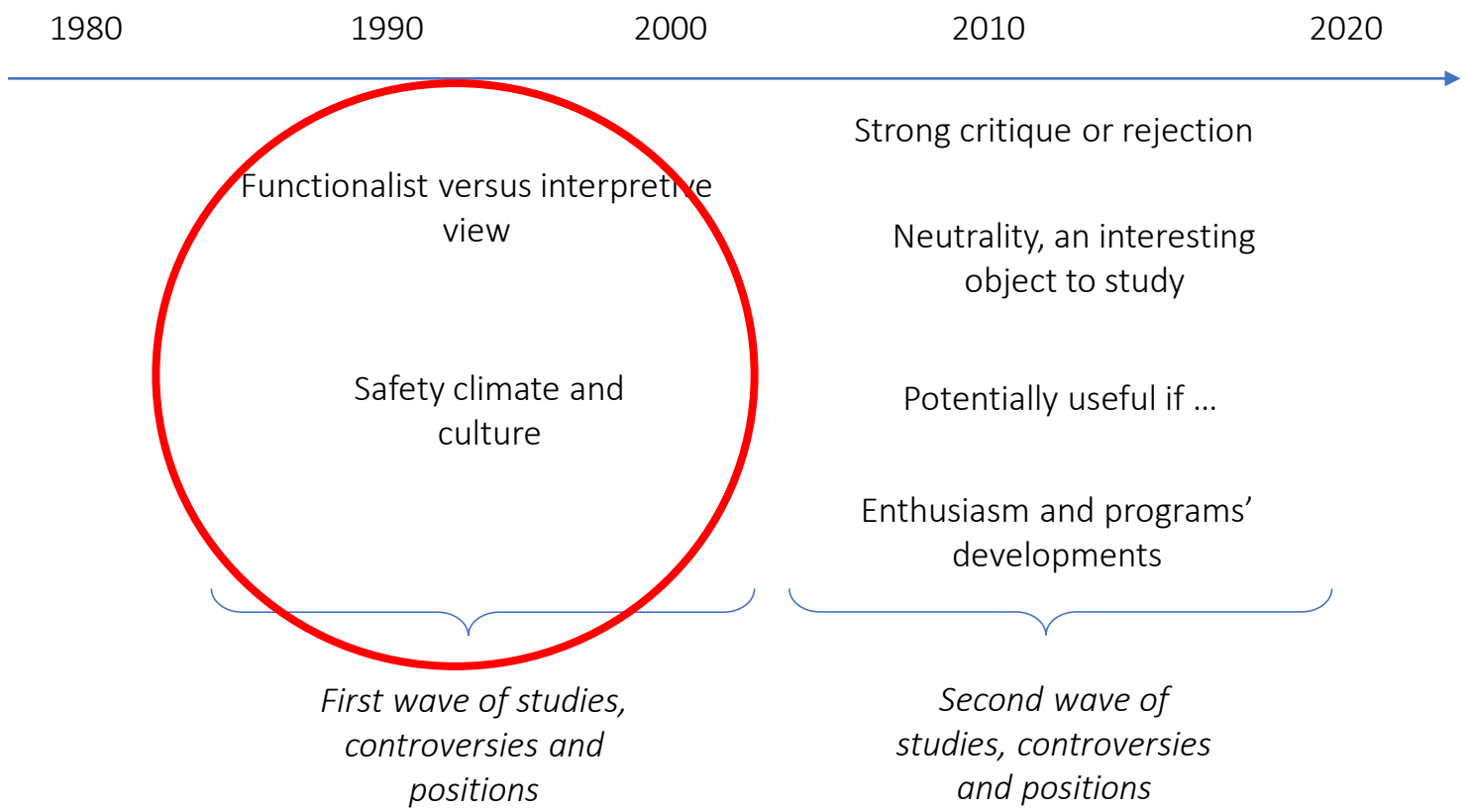
Thirty years of controversies



Is there something wrong about safety culture?

Thirty years of controversies

From there I distinguish two waves of studies



Is there something wrong about safety culture?

Thirty years of controversies

In the first 15 years of research, two major themes are discussed:

Functionalist versus Interpretive Views

- Managerial view (functionalist): safety culture created by management, good or bad, how to create safety culture ?
- Descriptive view (interpretive): safety culture product of interactions, not easy to assess, can we describe safety cultures?

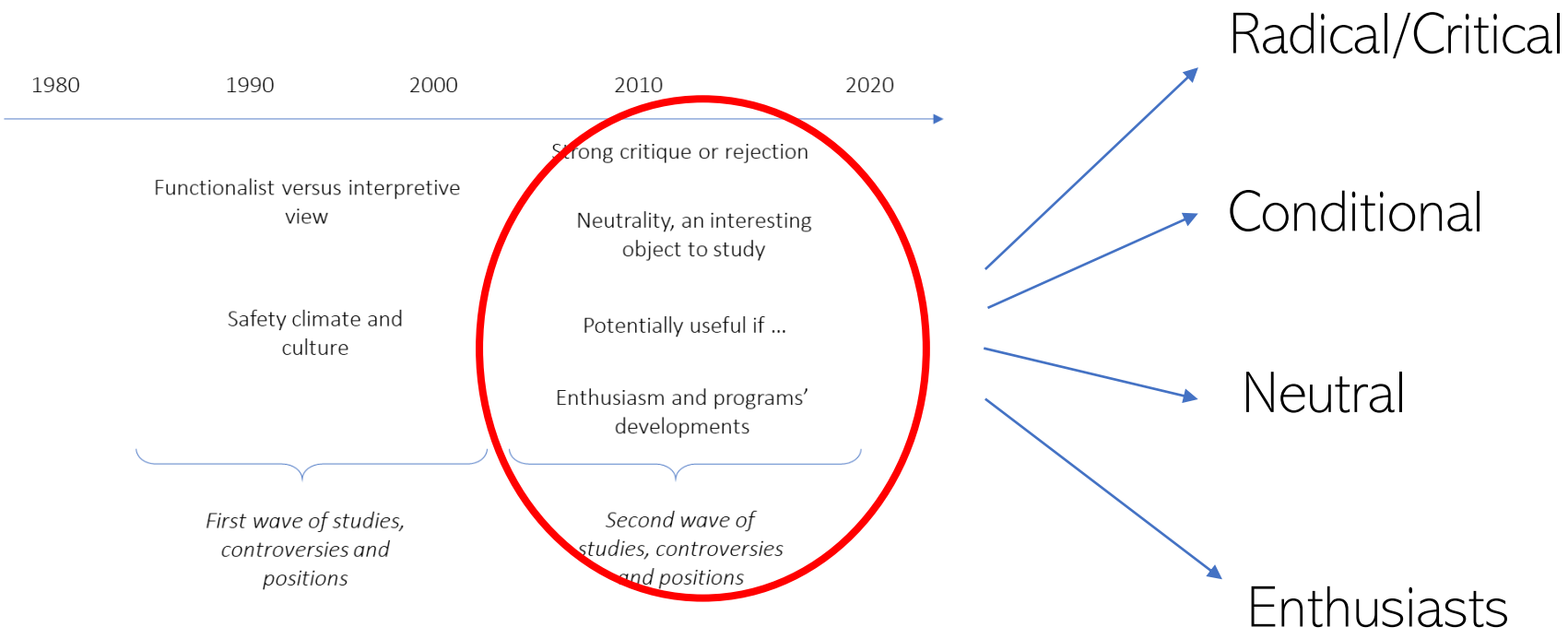
Safety Climate & Culture

- One psycho-sociological and based on survey: climate
- One anthropological and based on ethnography: culture

Is there something wrong about safety culture?

Thirty years of controversies

In the mid 2000 onwards, a number of authors start bringing further refinements but in opposite direction…representing different possible positions about the notion of safety culture. Let's discuss this shortly…



Is there something wrong about safety culture?

Thirty years of controversies

At one end of the spectrum, you have an author such as **Patrick Hudson** who promotes Safety Culture as a tool to improve safety

Credit: Prof Patrick Hudson

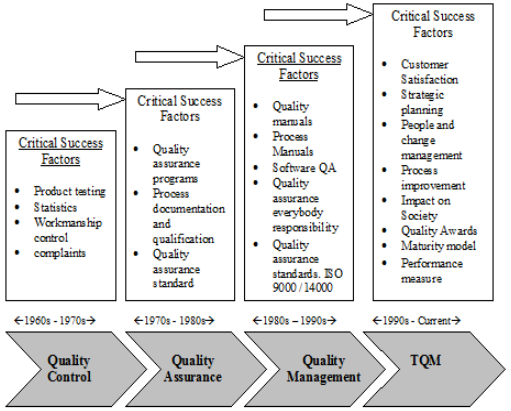
Is there something wrong about safety culture?

Thirty years of controversies

Combining different ideas into a practical view of safety culture as a maturity tool

Pathological (power-oriented)	Bureaucratic (rule-oriented)	Generative (performance-oriented)
Low cooperation	Modest cooperation	High cooperation
Messengers shot	Messengers neglected	Messengers trained
Responsibilities shirked	Narrow responsibilities	Risks are shared
Bridging discouraged	Bridging tolerated	Bridging encouraged
Failure leads to scapegoating	Failure leads to justice	Failure leads to enquiry
Novelty crushed	Novelty leads to problems	Novelty implemented

Westrum's typology, derived from ethnographic work

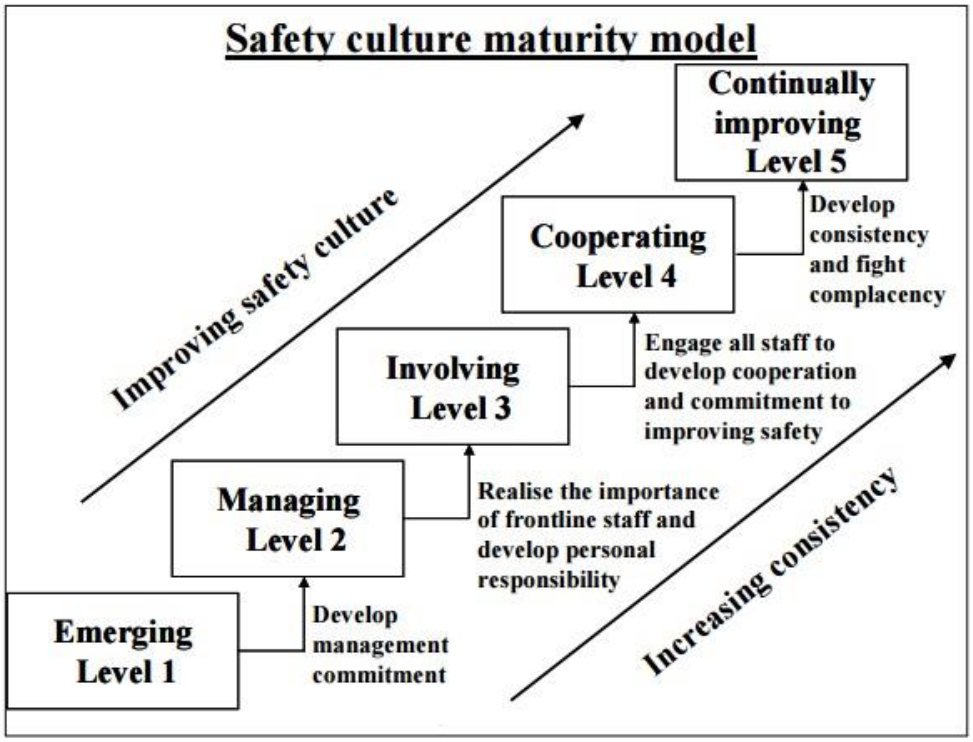


TQM

Is there something wrong about safety culture?

Thirty years of controversies

Note that this idea existed in the late 1990s



Is there something wrong about safety culture?

Thirty years of controversies

Hudson & his colleagues explained how the categories were derived from interviews with senior leaders of an oil & gas company.

Then the categories were associated with the five levels of safety culture.

This provided an assessment tool.

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A framework for understanding the development of organisational safety culture

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Abstract

A framework for the development and maturation of organisational safety culture was formulated. The content of the framework was informed by 26 semi-structured interviews with oil and gas company executives, each very experienced in the industry. The form of the framework was based on Westrum's [Westrum, R., 1996. Human factors experts beginning to focus on organizational factors in safety. ICAO Journal] typology of organisational cultures, which was adapted and extended as proposed by Reason [Reason, J., 1997. Managing the Risks of Organisational Accidents. Ashgate, Aldershot]. The product was a set of short descriptions of each of a number of aspects of organisational safety at each of five levels of safety culture advancement. The framework was assessed for face validity. Theoretical implications and possible applications of the framework are discussed.

Keywords: Safety culture; Organisations

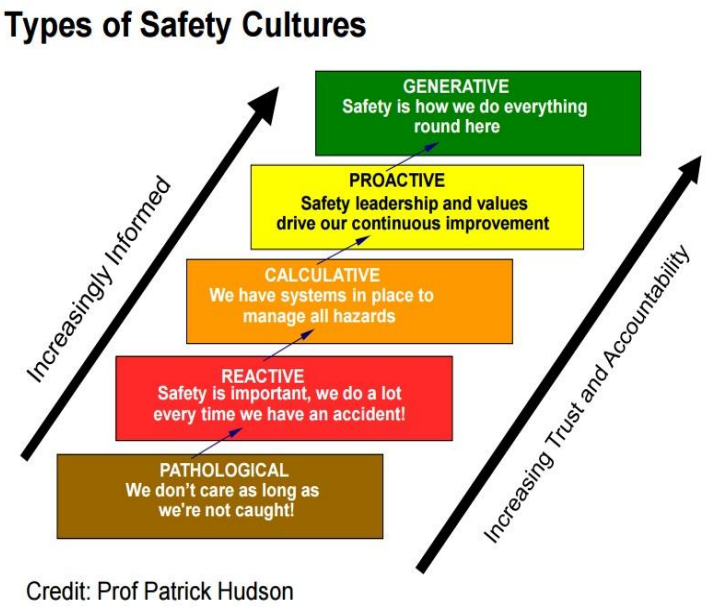
PATHOLOGICAL	REACTIVE	CALCULATIVE	PROACTIVE	GENERATIVE
Who causes accidents in the eyes of management?				
Individuals are blamed, and it is believed that accidents are a part of the job. Responsibility for accidents is seen as belonging to those directly involved.	There are attempts to remove 'accident-prone' individuals. It is believed that accidents are often just bad luck. The responsibility of The System for accidents is considered but has no consequences.	Faulty machinery and poor maintenance are identified as causes as well as people. There are attempts to reduce exposure. Management has a Them, rather than Us, mentality and takes an individual rather than a systems perspective.	Management looks at the whole system, including processes and procedures when considering accident causes. They admit that management must take some of the blame.	Blame is not an issue. Management accepts it could be responsible when assessing what they personally could have done to remove root causes. They take a broad view looking at the interaction of systems and people.

Is there something wrong about safety culture?

Thirty years of controversies

The result is the maturity model based on a number of appealing features:

- Simple to grasp through visualisation: improvements as one goes up
- Colours from red to green
- Going up as one would climb a ladder
- Normative in order to afford a possibility of assessment
- Generic to be applicable to different contexts

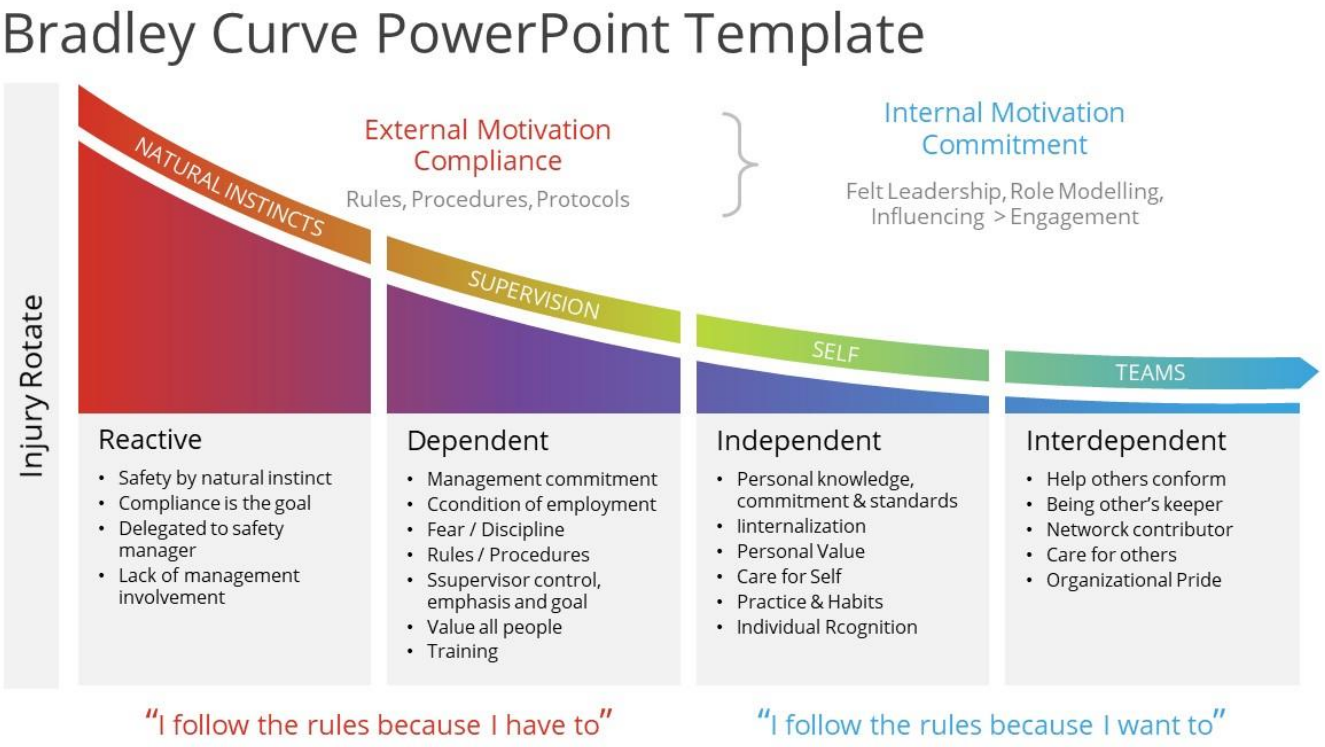


Credit: Prof Patrick Hudson

Is there something wrong about safety culture?

Thirty years of controversies

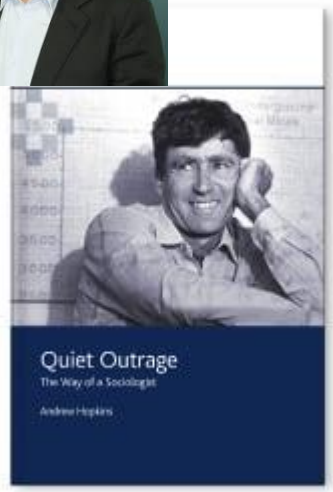
Not without reminding a similar idea …



Is there something wrong about safety culture?

Thirty years of controversies

At the other end of the spectrum, Andrew Hopkins suggests to abandon the notion of safety culture.
He elaborates seven propositions about Safety Culture.



- Culture is a group phenomenon, not an individual one;
- Organisation culture can override national cultures;
- an appropriate definition of culture is "*the way we do things around here*";
- Culture is descriptive more than explanatory;
- Culture is a product of top leaders;
- Emergent and managerialist view of culture are not opposed;
- Safety culture is confusing and we should abandon it

Is there something wrong about safety culture?

Thirty years of controversies

Hopkins is not alone to be critical about Safety Culture. Silbey for instance wrote an article on the topic.

She writes:

"*Safety Culture reproduces individualist and reductionist epistemologies that are unable to reliably explain social or system performance*." (Silbey, 2009, 343).

"*One is hard pressed to find a reference to power, group interests, conflict, or inequality*" (Silbey, 2009, 361)

Is there something wrong about safety culture?

Thirty years of controversies

In the middle of the two opposite positions, **Frank Guldenmund** is neutral

Several possible and compatible views of safety culture

- Academic (anthropology)
- Analytical (psycho sociology)
- Pragmatic (consultants)

"All three approaches could be considered complementary rather than alternatives or competitors." (Guldenmund, 2010)

Is there something wrong about safety culture?

Thirty years of controversies

In the middle of the two opposite positions, **Stian Antonsen** is conditional

Safety culture is interesting <u>if</u> considering

- Sub cultures
- Power
- Ethnographic methods (rather than surveys)

Shows in a case study how safety culture survey questionnaires were at odd with a serious near miss which occurred not long after the assessment

Is there something wrong about safety culture?

Thirty years of controversies

So, in the last 15 years a continuum of authors, from enthusiasts to radicals…

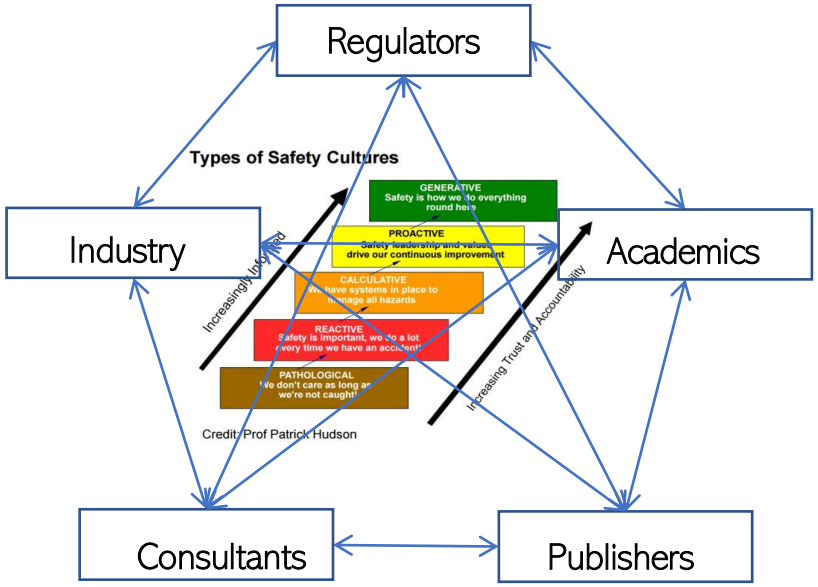
Enthusiast Neutral Conditional Critical/Radical

Is there something wrong about safety culture?

Thirty years of controversies

One reason for these different positions is also the 'safety market'

Some embrace it, others are more suspicious about it (knowing that consultants are likely to sell products for business purposes)



Is there something wrong about safety culture?

Thirty years of controversies

I realise that this is a lot of information to take.

But the point is that such notions can hardly be uncontroversial considering their complexity.

But also because they are caught up in the safety market.

Keeping the discussion alive, and to be able to understand the limitations seems to be a good approach.

An interesting question would therefore be…

How much of this is familiar to you?

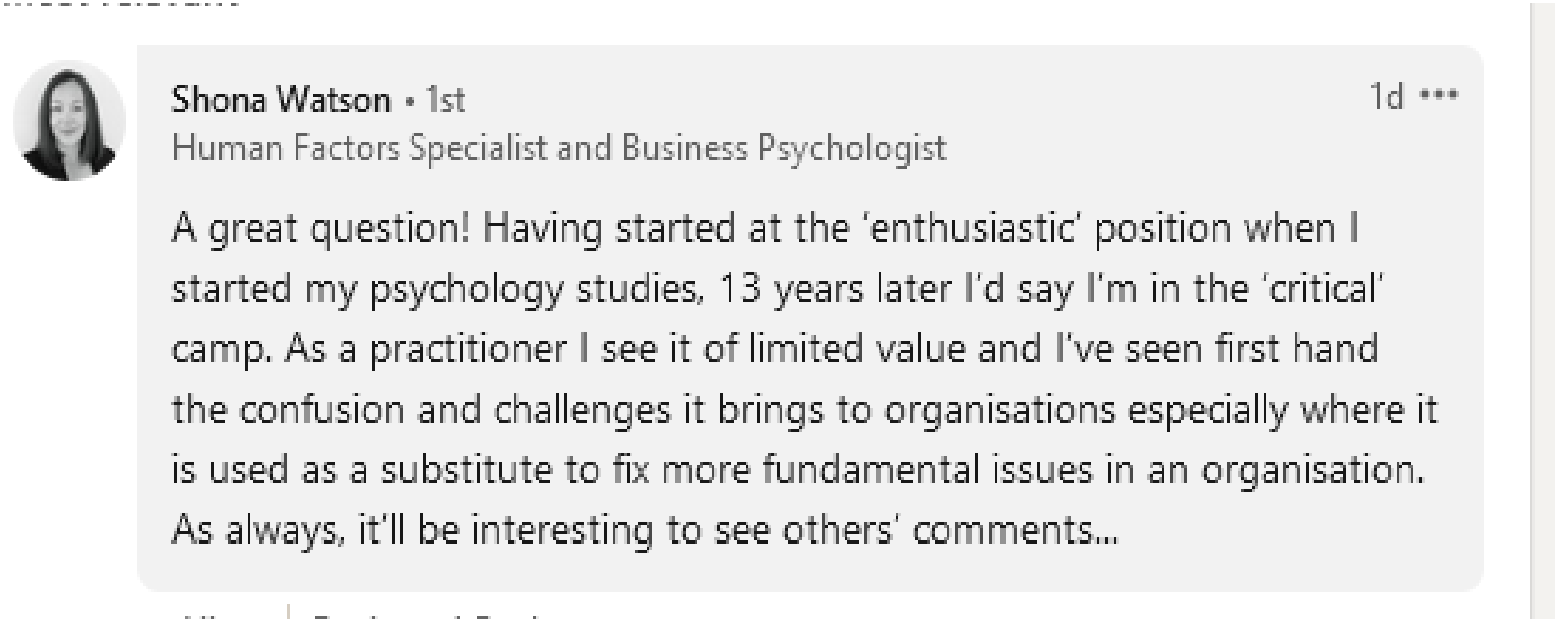
Or how much of this <u>should be</u> familiar to you?

Is there something wrong about safety culture?

Thirty years of controversies

Another question could be: are you enthusiast or radical about safety culture ?

Here is an answer from someone with a human factors and business psychology background… (I had the authorisation to use Shona's comment)



Shona Watson • 1st
Human Factors Specialist and Business Psychologist

1d •••

A great question! Having started at the 'enthusiastic' position when I started my psychology studies, 13 years later I'd say I'm in the 'critical' camp. As a practitioner I see it of limited value and I've seen first hand the confusion and challenges it brings to organisations especially where it is used as a substitute to fix more fundamental issues in an organisation. As always, it'll be interesting to see others' comments...

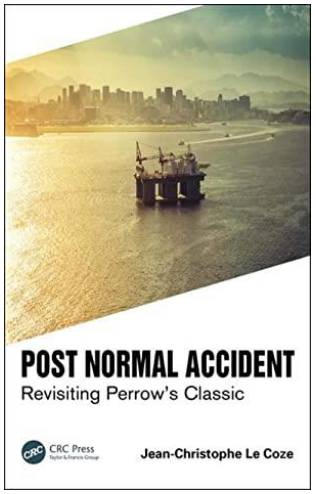
Is there something wrong about safety culture?

Thirty years of controversies

Another question could be: are you enthusiast or radical about safety culture ?

My own view is based on a more descriptive approach of the issue, which leads me to stress or to emphasis other aspects, including:

- Regulatory environment of organisations
- Strategy of companies
- Power issues
- Patterns of social interactions
- Organisational structures
- Work, Technology and Tasks



What is going on with the safety profession?

A new debate in the making … the safety profession

I think that another important area where safety research meets safety practice

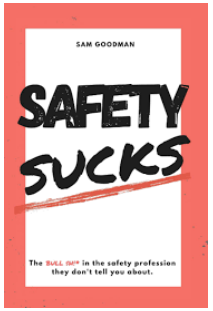
In the past years, a mounting concern by safety professionals about their work: what is their role, practice, influence and strategy

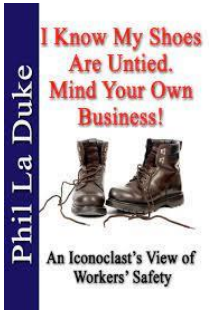
What is going on with the safety profession?

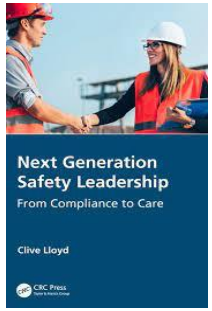
A new debate in the making … the safety profession

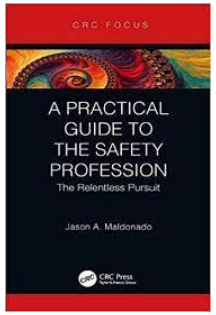
The number of books written by safety professionals (or consultant supporting safety professionals) has exploded in the past few years

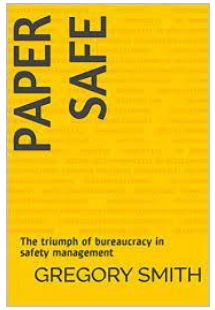
Some examples, these are very different books in terms of contents and analytical angles:

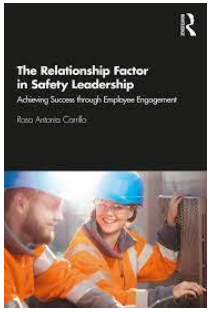


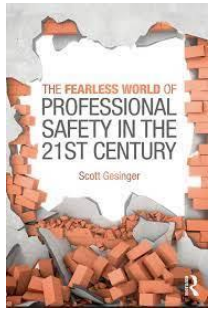


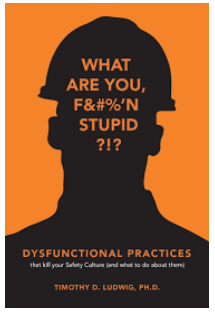












What is going on with the safety profession?

A new debate in the making … the safety profession

There are different angles followed in these publications but they share a common analysis of the situation :

- The safety profession is too compliance oriented
- The safety profession is captured by simplistic view of humans at work

As a result, the safety profession should redefine its identity to build a more positive image and a more adapted type of influence on practices

What is going on with the safety profession?

A new debate in the making … the safety profession

How did we end up here?

- **Increase of expectations** in health, occupational and process safety also environment translated in OHSE laws
- **Control by authorities** regarding compliance with laws
- **Corporate QHSE standards** in the context of globalisation (increase of standardisation)
- **Auditing** of health, safety and environment management systems (e.g. ISO)
- **A legal dimension of work (perceived as)** emphasising the production of written traces

What is going on with the safety profession?

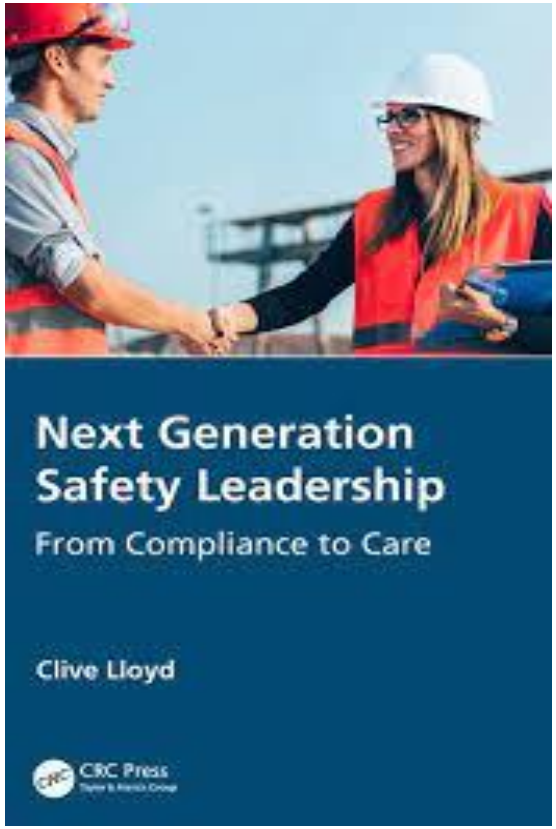
A new debate in the making … the safety profession

All these authors suggest a number of moves from current compliance safety management systems and regulatory oriented activities & mindset :

- Indicators
- Procedures
- Event analysis
- Audits

What is going on with the safety profession?

A new debate in the making … the safety profession



An example, among other, is provided in one of these books although many follow a similar path, for instance

- From accident to learning event,
- From advisors into coaches,
- From accident investigation to learning review
- From audit to continuous improvement opportunities

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To change one's mindset about people at work changes indeed many assumptions about activities of safety professionals (one example):

- **From accident to learning event**: looking into incidents to understand work constraints and adaptations rather than looking into cases of non compliance
- **From advisors into coaches**: seeing workers as professionals coping with complexity to support instead of telling them what to do as an 'outsider'
- **From accident investigation to learning review**: seeing incidents as opportunities to improve the system rather than blaming people
- **From audit to continuous improvement opportunities:** using these moments as possibilities to discuss problems and solutions which could be brought to situations rather looking, again, for non compliance

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Where do the ideas come from? All of this could be familiar to you, very popular **Safety II**, **Safety Differently** (& **HOP**), but let's describe core ideas :

- The notion of hindsight bias and local rationality
- The limit of counting errors
- The problem of reducing practice to procedures
- The positive approach of people at work acknowledging expertise
- Events and safety are systems properties as people adapt and compensate continuously to imperfections
- The bureaucratisation and limits of safety management systems when compliance becomes the main purpose

What is going on with the safety profession?

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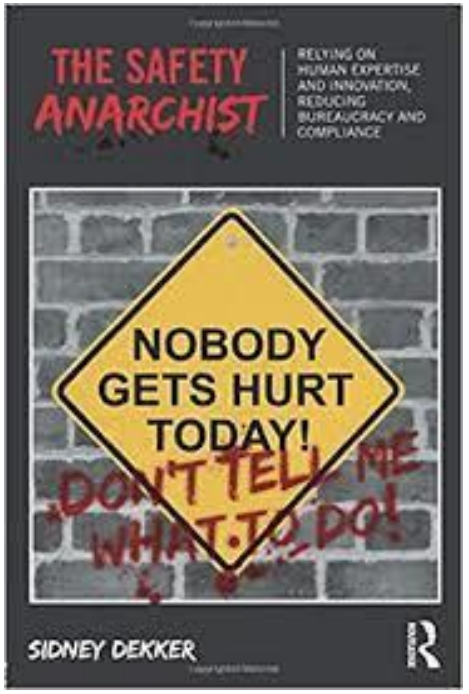
Following these ideas, Dekker has suggested to push further the implications of trusting expertise much more against bureaucratisation, and favours a **decentralised mode of operating while relying on expertise**

- Devolving (decentralising decision making back to expert),
- Decluttering (reducing layers of unnecessary procedures)

And, also:

- Telling stories (rather than counting numbers),
- Investigating success (instead of failures)



What is going on with the safety profession?

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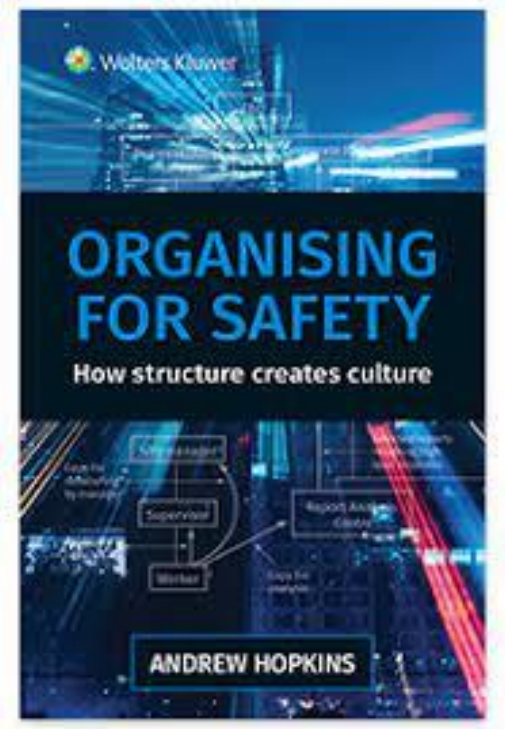
These are very sensible orientations but one can imagine that this might just be the start of new debates, controversies and discussions because

- **Hindsight bias** should obviously not be an opportunity to avoid accountability issues, especially **accountability of management & top management**
- Thinking in terms of system **without enough clarity about power** differential (managers versus workers) can be misleading
- **Bureaucratic systems have also their virtues & compliance** is expected by regulators as a core ingredient of OSH laws
- When it comes to high-risk environment, **compliance to standards** should be expected and is a good thing
- Thinking it terms of **organisational design** might matter for safety professionals more than acknowledged in these writings

What is going on with the safety profession?

A new debate in the making … the safety profession

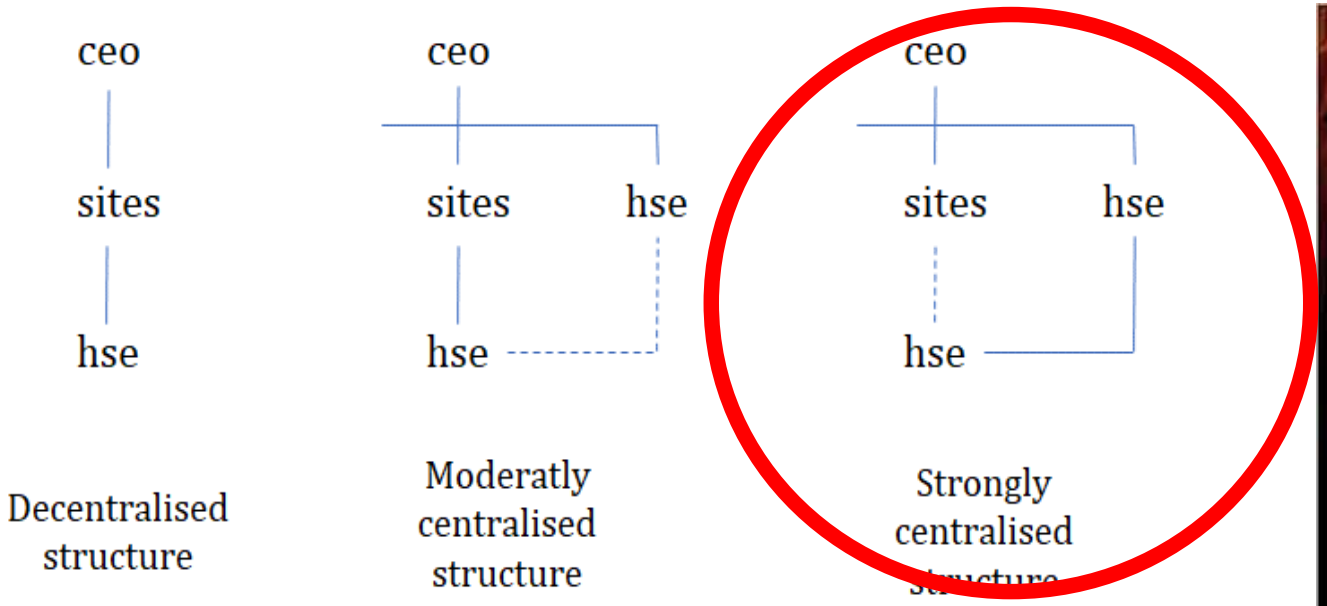


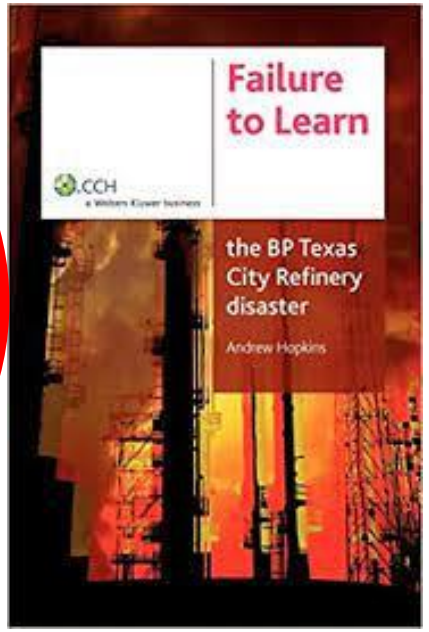
In this respect, one alternative insight about the safety profession is to argue their influence to be a product of organisational structure

Andrew Hopkins contends that safety people should be situated at the highest level of corporations & in charge of a centralised organisational structure to influence practices, to create organisational cultures for which safety matters

What is going on with the safety profession?

A new debate in the making … the safety profession





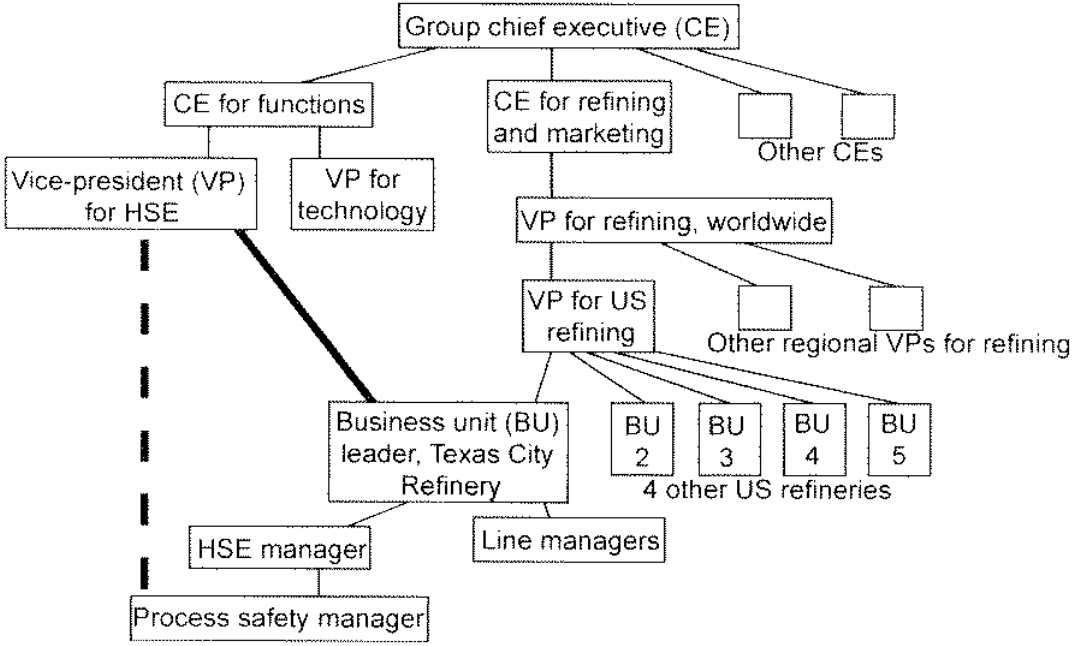
Hopkins shows that following major events, companies strengthen their internal organisational structure by **centralising safety engineering expertise**

What is going on with the safety profession?

A new debate in the making … the safety profession

These centralised structures need

- To be staffed with competent & senior experts at top levels
- To behave as expected (not perverted)



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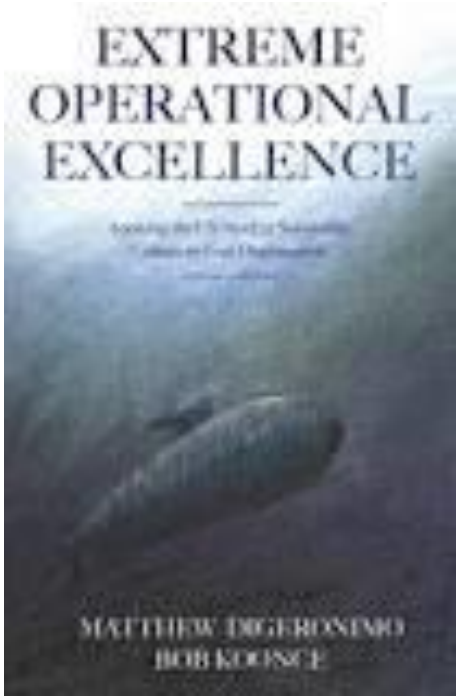
A new debate in the making … the safety profession

Hopkins promotes **engineering standards and standard operating procedures (SOP)** defining safe practices and performance and their implementation based on the right organisational structure

This is the core requirement of **extreme operational excellence** (based on military submarine experience in US)



What is going on with the safety profession?

A new debate in the making … the safety profession

Hopkins refers to properties of organisations which can revise their procedures when gaps occur between work in the field and content of procedures. This is what he calls '**rule management**'.

There is no **contradiction between standards and adaptation** when duly acknowledged, and compliance challenges discussed.

What is going on with the safety profession?

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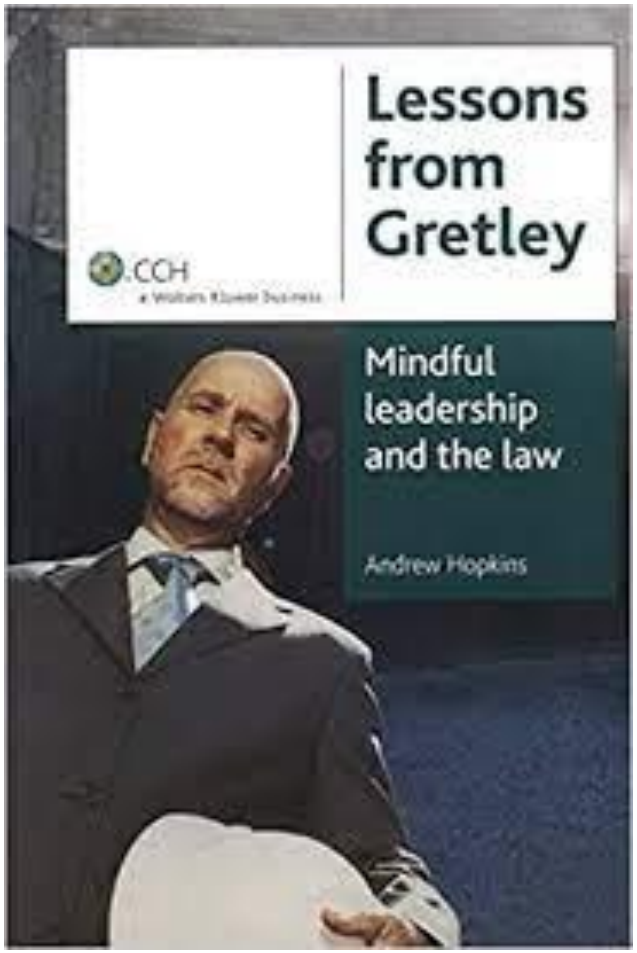
Safety should be designed from the top technically, organisationally and strategically to maintain the highest level of safe performance.

The safety function should be an independent, centralised and hierarchical function in organisations to bring this level of achievement, through audits which look at real practices, not paper work.



Safety is a **power, top management commitment** to operate safely through **mindful leadership**.

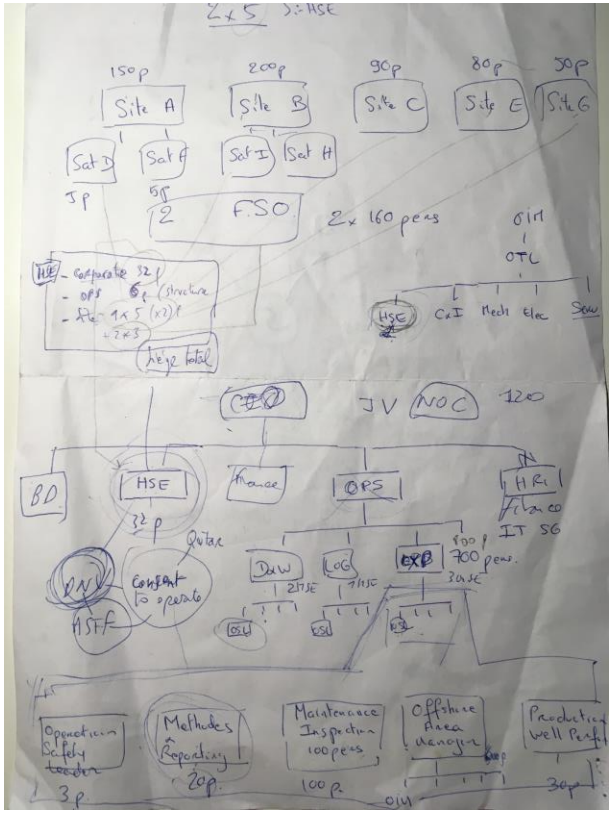
What is going on with the safety profession?

A new debate in the making … the safety profession

However … problems with many dysfunctional centralised systems as explained previously, an example

A friend of mine was an HSE specialist in a joint venture in a Middle East country, and has been involved in developing his role in the newly acquired offshore and onshore facilities.

We discussed and sketched some of the main features of his organisation



What is going on with the safety profession?

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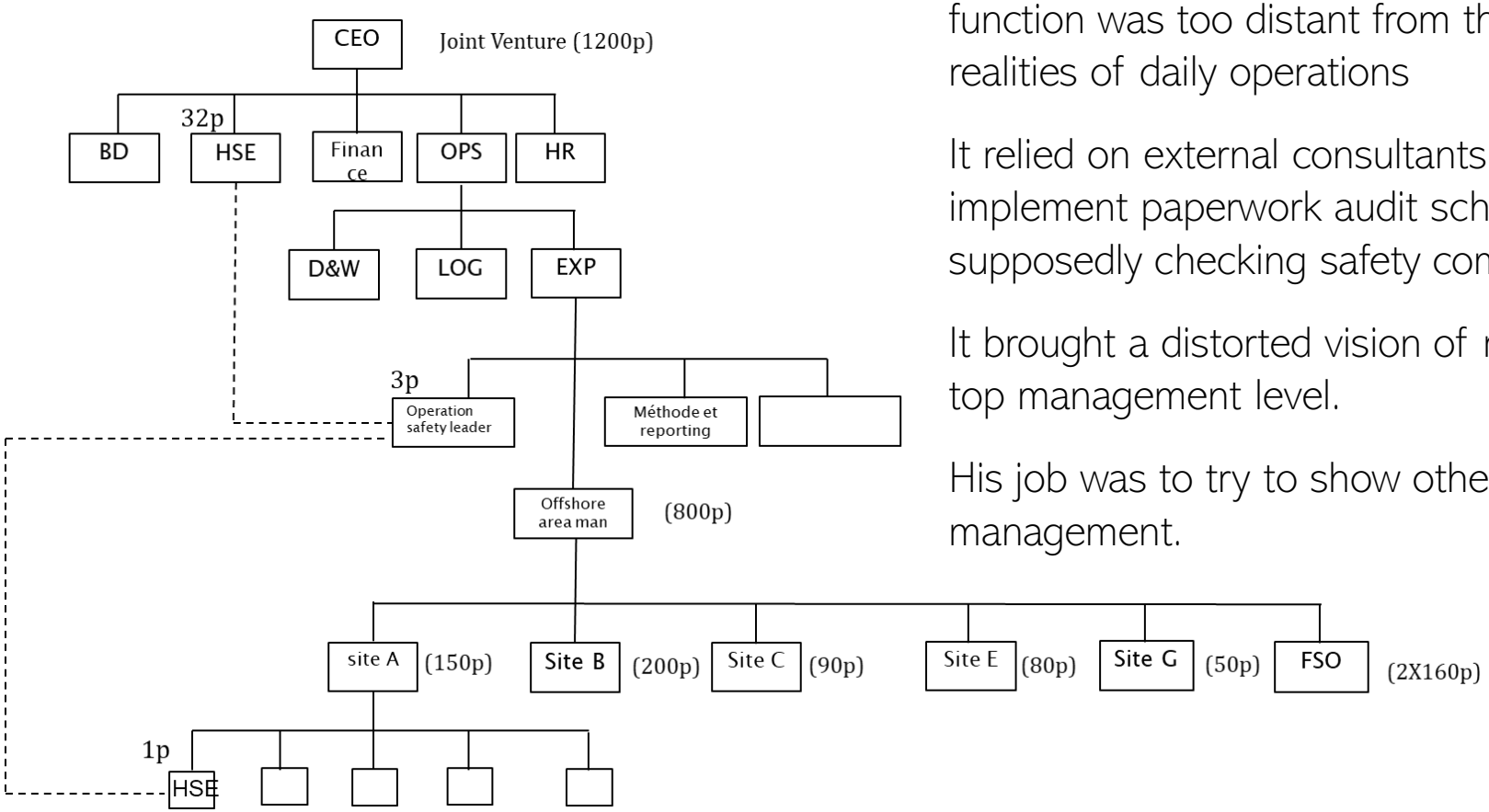
But … problems with many dysfunctional centralised systems, an example



His problem was that the centralised function was too distant from the realities of daily operations

It relied on external consultants to implement paperwork audit scheme supposedly checking safety compliance

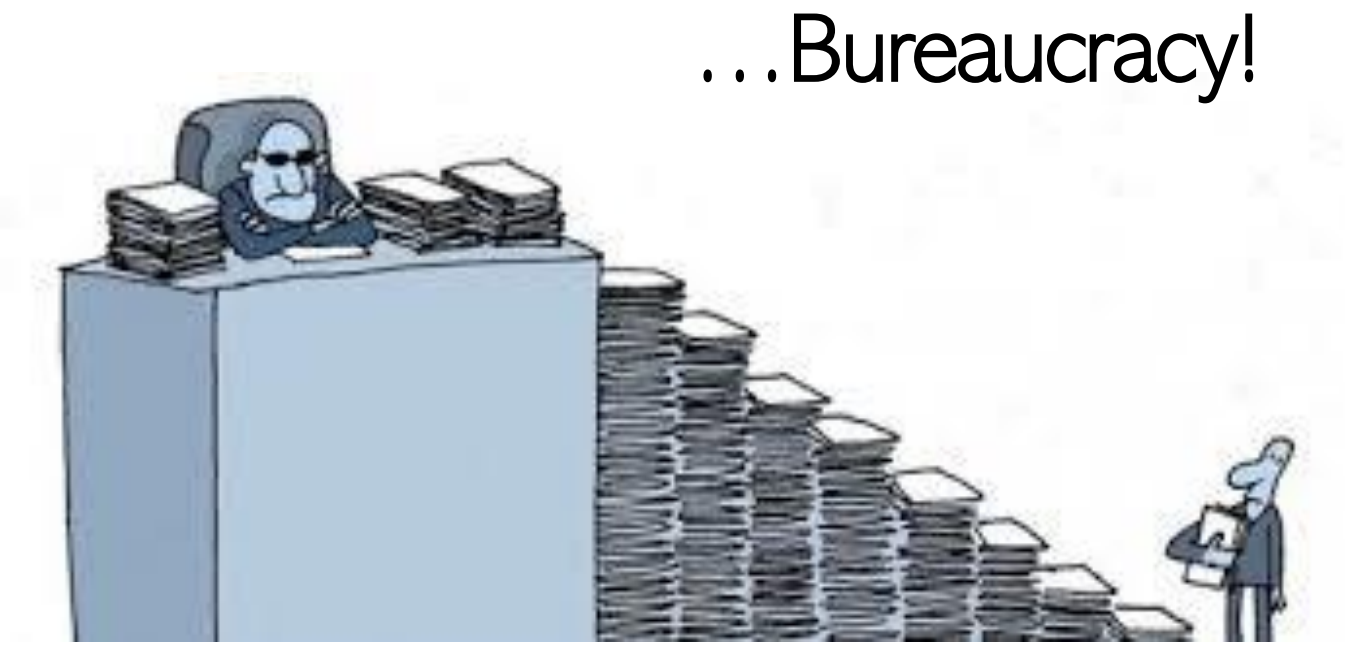
It brought a distorted vision of reality at top management level.

His job was to try to show otherwise top management.

What is going on with the safety profession?

A new debate in the making … the safety profession

At the heart of these debates is the question of …



What is going on with the safety profession?

A new debate in the making … the safety profession

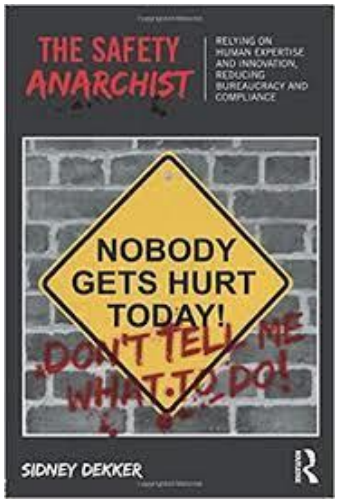
At the heart of these debates is the question of …

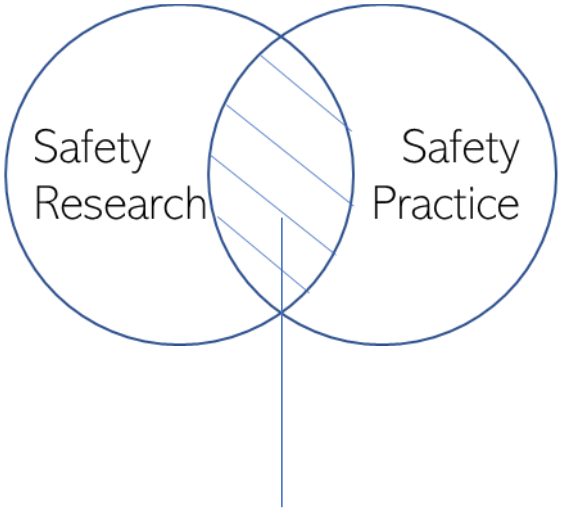
…Bureaucracy!

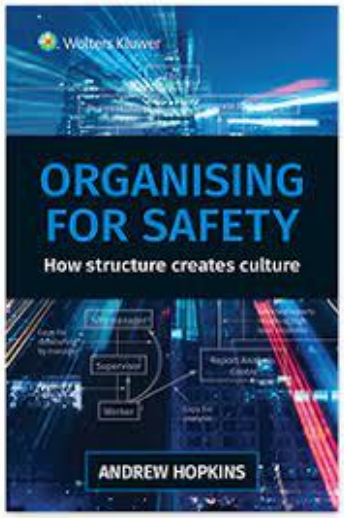
What is going on with the safety profession?

A new debate in the making … the safety profession

The topic of bureaucracy & safety is hardly uncontroversial, like Swiss Cheese, like Safety Culture, when safety research meets safety practice







A hindrance?

Bureaucracy & Safety Profession

A requirement?

Solution: decentralisation

Solution: centralisation

What is going on with the safety profession?

A new debate in the making … the safety profession

How do we get the benefits of bureaucracy without ending up with bureaucratisation?

In safety-critical systems, designing adapted bureaucracies … the safety profession is in the middle of the problem …

Where do you think your organisation stands in terms of balancing bureaucracy and autonomy?
What sort of safety professional are you?

What is going on with the safety profession?

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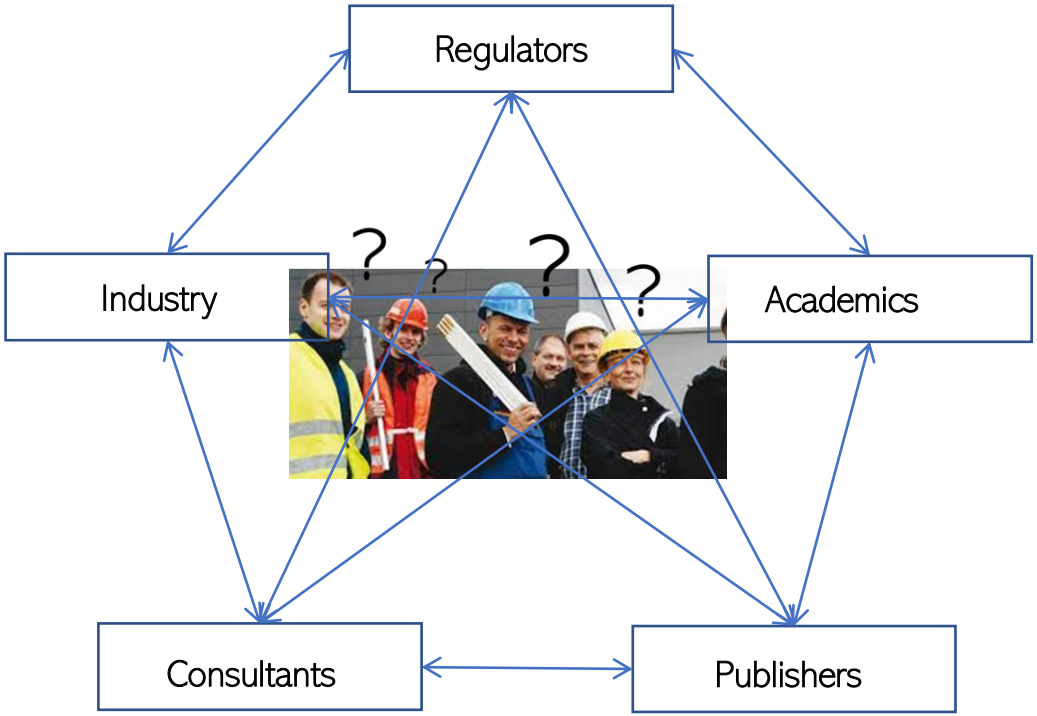
And, of course, because there is a problem and there are potential solutions, the 'safety professionals' existential crisis is now in the middle of a safety market…



End of part 2

Key points

Safety Culture is a **controversial topic** and there are many different positions about this topic by a number of authors

They range from **enthusiasts who develop programs** to **radicals who reject the notion**

Safety Culture is **in the middle of the 'safety market'** and is another good example of safety research meeting safety practice

The safety profession raises a number of issues about its role, strategy and influence in a context of a **compliance mindset & bureaucratisation**

Safety research has provided many insights to fuel this **'existential' debate**

More could be borrowed from the safety research literature to go further and beyond these discussions …

End of part 2

… this is for another time with an introduction to Post Normal Accident (Post NA)…