maîtriser le risque
pour un développement durable

"*Strategy, change, learning and safety: discussing the lessons of the past, thinking about the future*"

Jean-Christophe Le Coze

INERIS

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"*Strategy, change, learning and safety: discussing the lessons of the past, thinking about the future*"

1h15 workshop content:

20 mns presentation (including 2/3 mns to present the workshop rules)

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A few words about myself

I am interested in safety-critical systems, their mode of operating, I have been involved in these studies for 20 years.









How do such organisations attain very high level of safe performance (and sometimes, also, fail)?

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When I was invited to host a workshop on the theme of the ERA safety days on learning I started thinking about what we learned from events.

Organisers were interested in the topic of strategy.

I thought that it was a great idea but challenging to introduce in a short period of time, yet, I liked it and decided to discuss strategy, change, learning & safety

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One strong lesson of several decades of investigations is that accidents <u>are products of systems</u>, not <u>of individual or technical failures</u> (accidents are not the products of "human errors").

But we need to add an equally important lesson, not often expressed as explicitly.

We need to consider something else:

Systems are dynamic

Organisations adapt

Sociotechnical systems change

Businesses evolve

<u>And strategy plays a key role</u>

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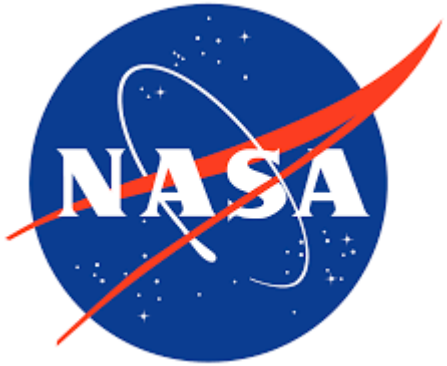
There is an overwhelming amount of evidence of a pattern, a complex one indeed but a strong case of causation repeated across disasters: the role of strategy, change and accidents…

<u>The stories of NASA, BP or BOEING have provided very useful cases</u>:



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1980-1990

NASA, was confronted to major events involving its shuttle system several years apart, Challenger in 1986 and Columbia in 2003 (*it provided the empirical material to start thinking about the relationship between safety, change, learning and strategy*)

O'ring failure following Challenger's launch
1986

Thermal protection failure in atmosphere re-entry of Columbia
2003

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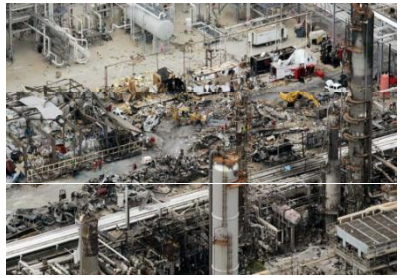
1990-2000

Another company, in a very different domain, faced several disasters in a few years 2005 - 2010

BP Headquarters in London



Texas City, 2005

Prudhoe bay, 2006

Deep Water Horizon, 2010

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2000-2010

Boeing, a quite similar story than BP (and NASA), a similar pattern…a series of events within 6 years in the 2010s on the Dreamliner and the 737 Max
Two different aircrafts grounded by the FAA following batteries' fires & crashes

Lithium-Ion batteries fire Dreamliner aircraft grounded by the FAA
2013

Two crashes of the 737Max aircrafts, grounded by the FAA, and around the world
2019

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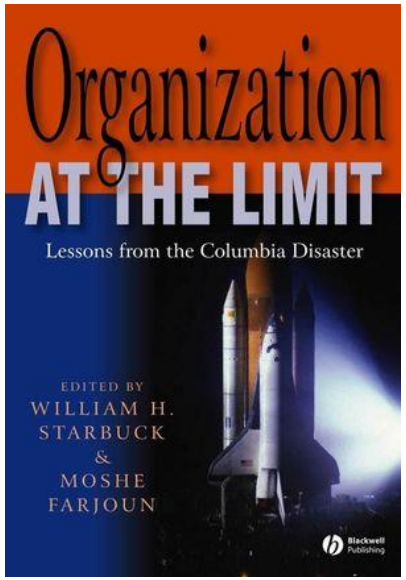
The story of NASA led researchers to conceptualise the idea of "*organisations at the limit*".

While adapting to sometimes tough (business) environments, organisations must find ways to achieve safe performance but sometimes fail to achieve a balance, and limits are crossed.

This idea applies well to the stories of BP and BOEING.



"People and organizations do not always know how far they are from the true limits or the extent to which limits are elastic, relative, or arbitrary. Therefore, progress in general, and exceeding limits in particular entails ***ambiguity***, ***risk*** *and* ***uncertainty****"*

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Like I said earlier …

Systems are dynamic

Organisations adapt

Sociotechnical systems change

Businesses evolve

But sometimes, when organisations adapt, some of the changes , from a safety point of view, are too fast, too much, too many, too far…**and limits are crossed!**

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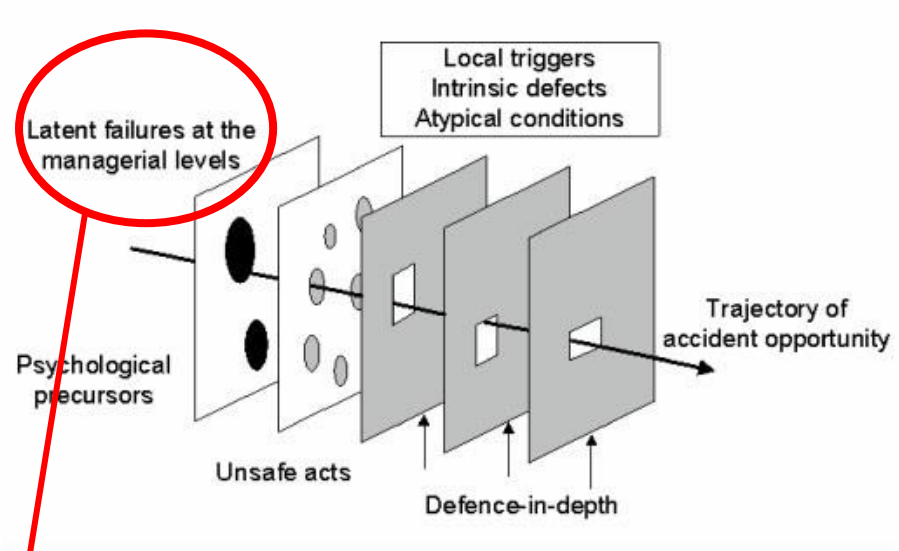
One way to formulate this is to translate it in the "Swiss Cheese" language:

strategies, adaptations and changes create <u>latent conditions</u> for accidents



Strategic decisions to adapt organisation to new context leading to changes, sometimes crossing the limits

<u>too fast</u>, <u>too much</u>, <u>too many</u>, <u>too far…?

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And there is no need to talk about major accidents to observe this in practice, example (one among many other studies that have carried out)

Changes associated with organisations' new strategy of a company triggered an event in one geographic area of the company…

A fire due to a gap in safe practice by a young recruit who was not supervised enough

In the background of this event, a series of organisational changes (structure, managers, practices, production targets) which created an unanticipated outcome.

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So what about the railways …? High profile events are rare but still happen from time to time…were some limits crossed?

US, 2023

Spain, 2013

France, 2013

France, 2015

Greece, 2023

Italy, 2023

India, 2023

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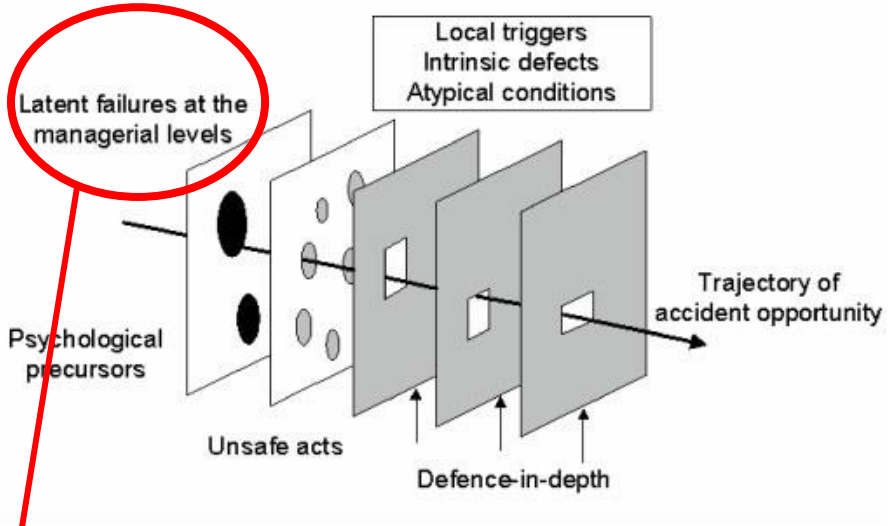
They, too, would certainly reveal dynamic of systems, of organisational adaptations, of evolving businesses and strategies leading to changes …



Strategic adaptations to new context leading to changes

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Let's start a conversation on this important topic and share perspectives on "*organisations at the limit*"

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Workshop activity (45 mns):

Chose a time keeper for each table.

For each table (6 people maximum), each person takes 5 to 10 mns to prepare her/his answers to the following three questions:

1. Have you experienced organisations at the limit? Could you illustrate?
2. Are there current challenges in your organisation pushing the limits?
3. According to you, how to avoid not going too far, beyond the limits?

Present your answers to your colleagues in 5 mns (total time: 30 mns)

In the remaining 5 mns : Was it difficult to elaborate on this topic? What came out of sharing your answers? Any similarities, common points, or differences? Write on post-it notes some of the key words or expressions which capture some core insights gathered from your conversations…

Get ready to share your findings to the room...

Sharing with the room, and wrap up (10 mns)

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