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■ Consequences of Severe Accidents on Social Regulations in Socio-Technical organizations

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- *“1 Prioritization of both safety and performance and shared goals across the organization;*
- *2. A “culture” of reliability (or, better, attitude toward reliability) that simultaneously decentralizes and centralizes operations allowing authority decisions to migrate toward lower ranking members;*
- *3. A learning organization that uses “trail-and-error” learning to change to the better following accidents, incidents, and, most important, near misses;*
- *4. A strategy of redundancy beyond technology but in behaviors such as one person stepping in when a task needs completion.”*
- *“<http://high-reliability.org/High-Reliability-Organizations>”*

- “*Managing the Unexpected (Weick & Sutcliffe, 2007), then, views HRO through the lens of the effect people have on other people’s behaviors. It is not simply mindfulness or enactment they describe but collective mindfulness and collective enactment*”
- <http://high-reliability.org/High-Reliability-Organizations>”

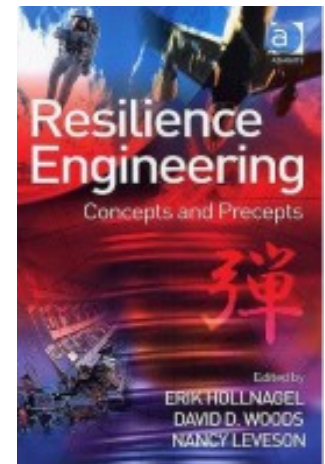
- So in case of anticipation: 3 elements are important
- “1) *Preoccupation with failure:*
- 2) *Reluctance to simplify:*
- 3) *Sensitivity to operations: Systems are not static and linear but rather dynamic and nonlinear in nature. As a result it becomes difficult to know how one area of the organization’s operations will act compared to another part.*”

- “

What is our definition of resilience engineering?

« Resilience is the intrinsic ability of a system to adjust its functioning prior to, during, or following changes and disturbances, so that it can sustain required operations under both expected and unexpected conditions ».

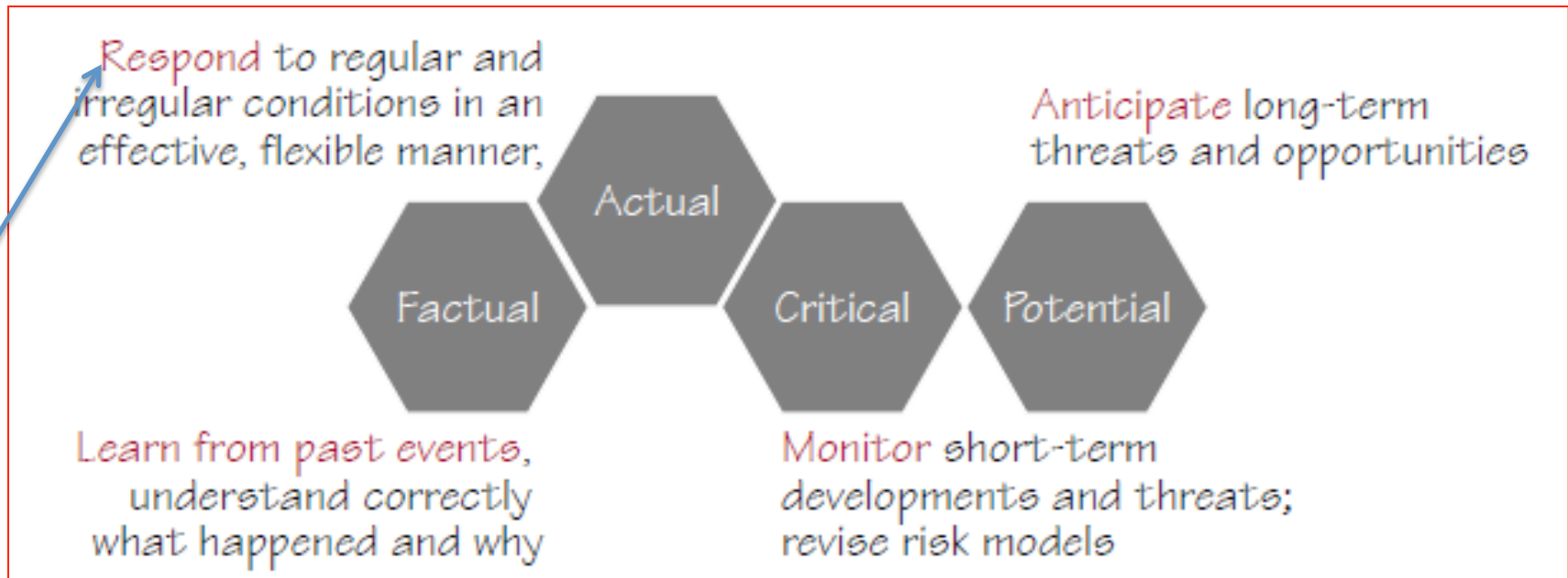
Prof. Erik Hollnagel, Mines ParisTech



Hollnagel E., Woods D., Leveson N.,
Resilience engineering: Concepts and precepts (2006),
Ashgate

What is our definition of resilience engineering?

A practice of Resilience Engineering / Proactive Safety Management requires that all levels of the organization are able to:



- ✓ We try to analyze the resilience capacity of a system during major accidents in terms of the sociology of the organization and especially social regulation.
- ✓ With Bourrier, we think that Nuclear Power Plant are normal organisation from the point of view of the sociology of the organisation.
- ✓ In other words they are the result of the negotiations and strategies undertaken by their actors.
- ✓ With de Terssac, we think that the development of every day safety in a factory begins with negotiation between workers and supervisors. Different actors in the organization will have different ideas of safety linked to their role in the company. **Safety culture results of theses ideas.**

- It raises the question of these negotiations in **time of Crisis**.
- Do we have to return to strict procedures or maintain negotiated rules in order to adapt the organisation to the context ?
- In the context of Crisis during the accident of Fukushima Daiichi Plant, the management of the Fukushima Daiichi Crisis shows that certain actions taken by the crisis unit are different from the procedures given by the government and Tepco.

- The hearing of the plant's director indicates that when the procedures can't be applied, the process of negotiation can lead to new rules adapted to the context and the knowledge of the system status by the actors.
- « *For me, there was no question of following such an order. I decided to do it my way.. So I announced to the people at the crisis table that we would stop, but I quietly took the safety group leader to one side, which was in charge of the injection and I told him that I was going to announce who would listen that we would stop the injection, but that he, at all costs, must not stop sending water. »*
- This manoeuvre suggests that amongst the network of actors in the field, there were some which were not in line with the instructions issued by head quarters and it reveals a network of actors based on trust and habits of working together.

- In period of Crisis the return to procedure Control regulation is not relevant.
- Rules that apply should be the result of negotiations between decision taken by headquarters and independent on the ground regulation that takes into account the context.
- The resilience capacity of a system is based on its capacity to adapt and therefore knowledge of the dynamics governing between its actors.