



proHRO

There Is More Than
One Way To Be Reliable

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**First European
proHRO Conference**

15th and 16th of November, 2011 / The Hague

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1. HROs: Reliability of Precluded Events







High Reliability Organizations

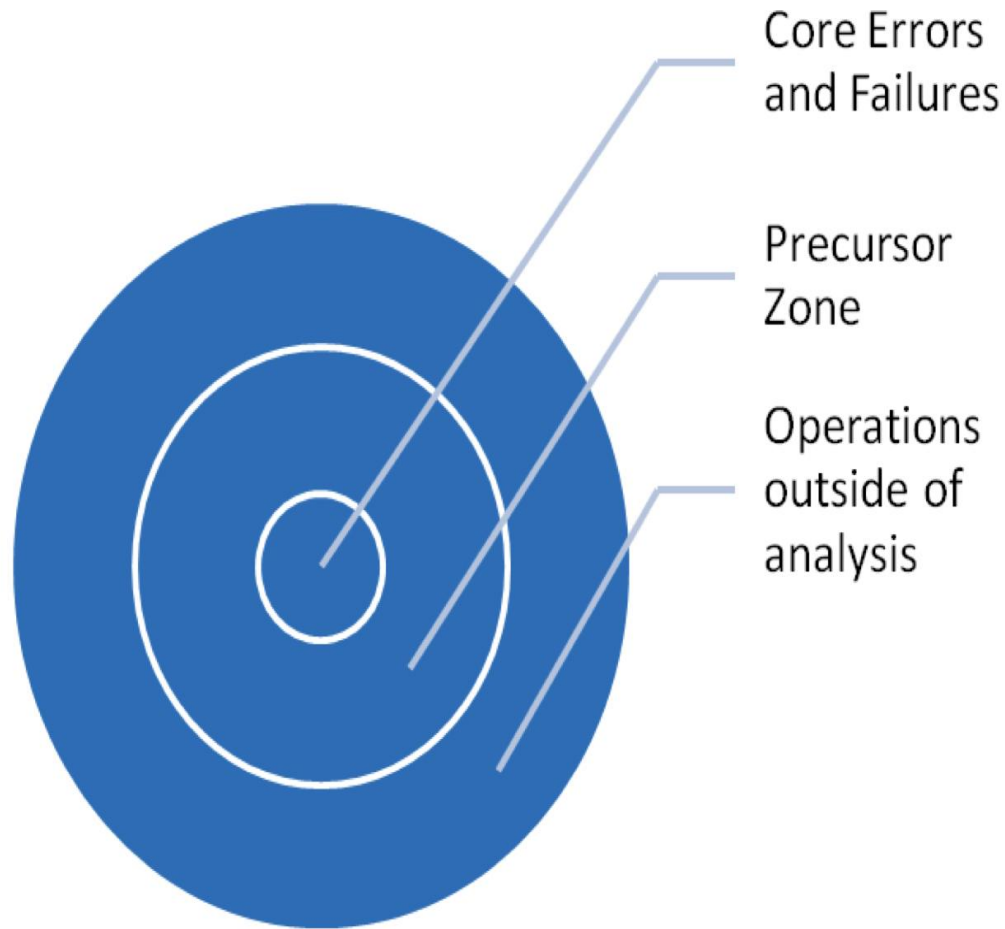
A subset of hazardous organizations that:

- have “...operated nearly error-free for very long periods of time...” (Karlene Roberts, 1990, pp. 101-102);
- recognize that “safety can never be established ex ante...so they are committed to safety at the highest level...and adopt a special approach to its pursuit” (Schulman, 2006, pp. ii39).

HRO Characteristics

- Operate in unforgiving social and political environments
- Use complex processes to manage complex technologies—have potential for surprises and adverse consequences
- Have limited opportunities for learning through experimentation
- Have widespread accountability with sanctions for substandard performance

Core and Precursor Zones in HROs



Special conditions for HROs:

- public dread of failure
- acceptance of high social, organizational and personal costs
- extensive regulation and proceduralization
- protection from market forces (public agencies or regulated monopolies)

2. Instability Management Reliability



HROs vs Instability Management

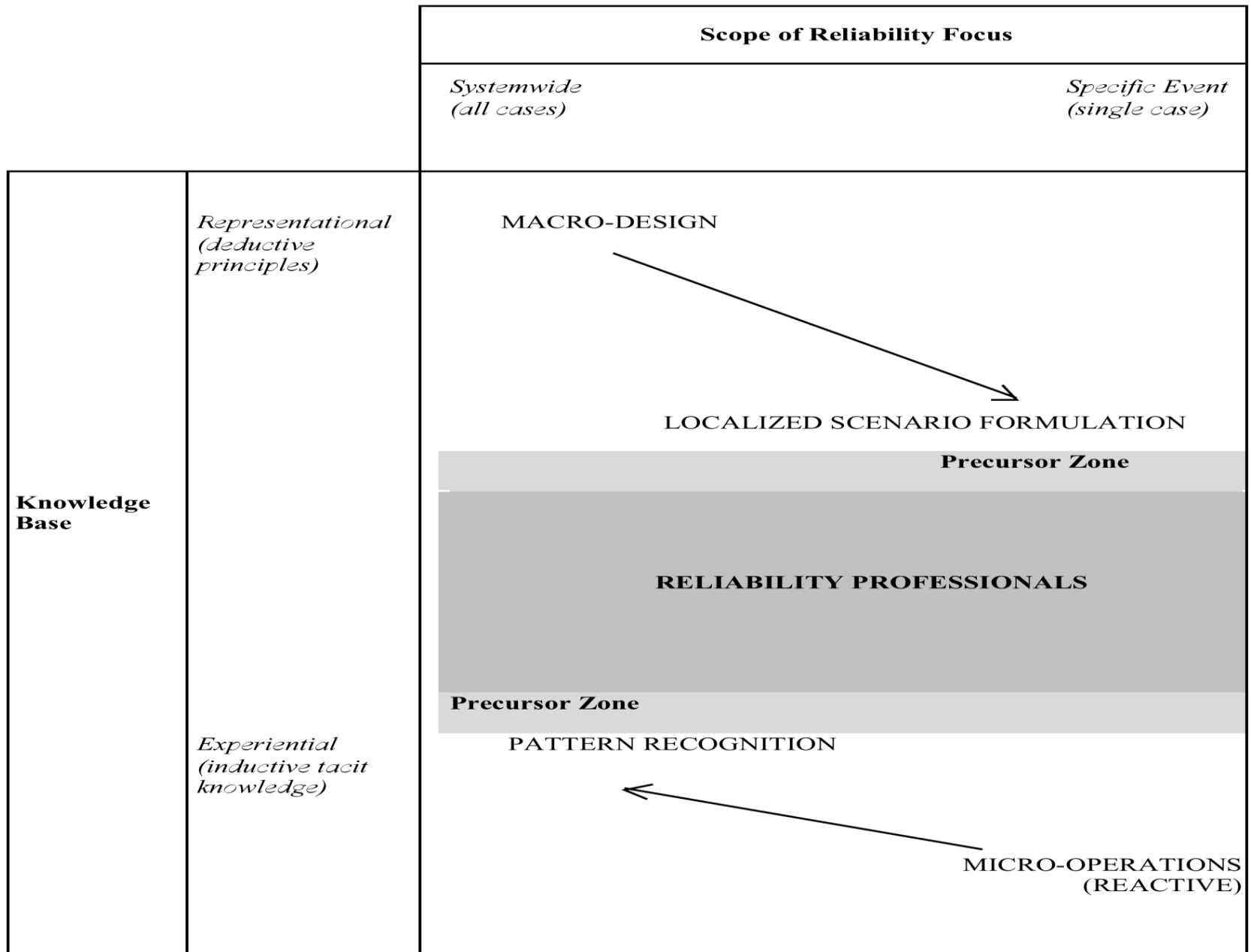
HROs

- **Standardized raw material;
repetitive problems**
- **Formal deductive principles
cover system behavior**
- **Command and control of
system inputs and outputs;
low input and output variance**
- **Action within analysis**
- **Action under anticipation**

Instability Management

- Unstandardized materials;
larger problem variety**
- Important role for experiential
and tacit knowledge**
- High input variance and
low output variance requires
high process variance**
- Improvisational actions**
- Major role for real-time action**

Reliability Space and its Precursor Zone



3. Reliability Outside Analysis

Seeking reliability in “low validity” environments

(Kahneman and Klein)

- unique, non-repetitive conditions
- limited information
- unreliable feedback
- limited learning

Reliability Outside Analysis (2)

- “Managing the Unexpected”

(Weick and Sutcliffe)

- “These infrastructures are more interconnected than we can imagine.”

(Director, California Utilities Emergency Assn.)

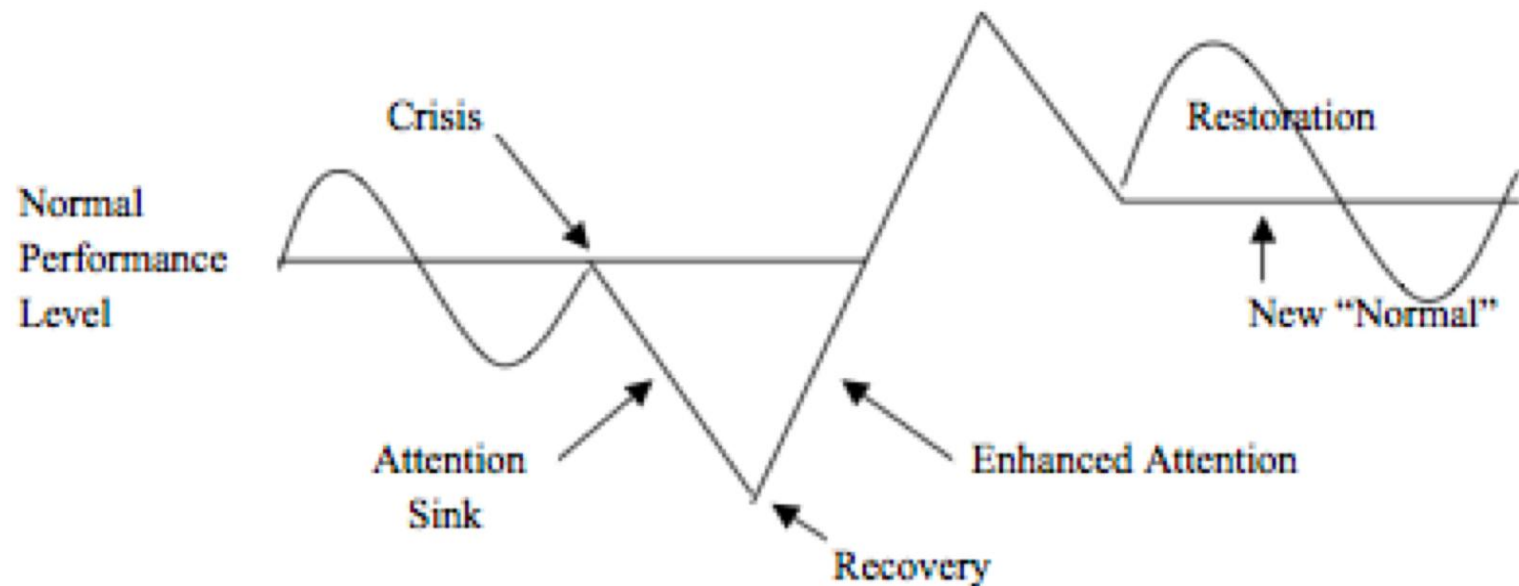
Reliability Outside Analysis (3)

Reliability as a *process* and not an outcome variable

- R&D and novel projects
- Disaster relief management
- Failures beyond imagining

4. Crisis Reliability: A High Reliability Crisis Cycle

High Reliability Management: Leadership and Crisis Management Functions



Crisis Reliability (2)

- Maintaining motivation and information
- Aligning crisis phases across levels and across organizations
- Reliable phase transitions (“dropping tools”)

Reliability Variables to Keep in Mind

- The economic and political setting
 - Is there a reliability motive? What are the reliability resources? Control?
- Organizational structure
 - Single organization or network?
- Character of the knowledge base
 - well understood vs uncertain?