

Safety Culture: Where do we Stand?

Research Perspectives on Organizational Accidents

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Overview

- What is safety culture and how is it useful
 - Some conceptual clarifications
 - Attention to context
- Uncertainty as impetus for safety (culture)
 - The example of flexible rules
- Role of regulators

Safety culture: Long-standing issues

- Safety culture vs. safety climate
- Safety culture vs. no safety culture or Good vs. bad safety culture
- Explanatory power of safety culture
- Management and prescription of safety culture
- Methods for assessing safety culture

Conceptual clarifications

- **Shared norms and assumptions** guiding behavior (=culture) vs. shared perceptions of organizational reality (=climate)
- Core criterion for "good" safety culture: Norms and assumptions that support **adequate balance between stability and flexibility**
- Focus on safety culture as a **leading indicator** rather than a lagging indicator = aiming for predictive power instead of post hoc explanation
- Address existing **culture as source of resistance against change** towards more safety, but avoid attempts to manage or prescribe culture
- **Shared/discrepant perceptions of company operation and strategy** as source for reflection on culture

Impact of culture is context-dependent

Type of risk	Personal safety Culture needs to prioritize safety over task fulfilment	Process safety Culture as support for good task fulfilment
Level of uncertainty	Low Culture is secondary due to high stability and control	High Culture is crucial for coordination and integration of local decision-making
Regulatory regime	Prescriptive regulation Focus on safety management, not culture	Self-regulation Culture to be monitored, especially during change

Options for handling uncertainty in safety management

	Reducing uncertainty	Maintaining uncertainty	Increasing uncertainty
Objective	Stability	Flexibility	Flexibility/innovation
Conceptual approach	Risk mitigation	Resilience	Complexity theory
Control paradigm	Central control	Delegating control to local operators	Shaping contexts for self-organization
Examples of measures	Standardization and automation	Empowerment	Controlled experimentation

Choice between options based on

- ➔ Optimal balance between stability and flexibility
- ➔ Optimal match between control and accountability

Some examples

	Reducing uncertainty	Maintaining uncertainty	Increasing uncertainty
Industry sectors	Nuclear power	Health care	Oil exploration
Organizational functions	Production planning	Operations	R&D
Work processes	Routine tasks	Problem-solving	Inventing

Stability requirements due to control needs

e.g., tightly coupled processes, traceability of decisions and processes, low fault tolerance, low qualification level of personnel

Flexibility requirements due to acknowledged/desired uncertainty

e.g., frequent external changes, high variance in work processes, need for innovation, avoiding overroutinization and complacency

Desirable uncertainty: Flexible rules

- Flexible rules = goal rules, process rules, action rules with decision latitude.
- Flexible rules help to balance constraining and supporting functions of standardization
 - Use goal and process rules for flexibility and action rules for stability.
- Boundary conditions for flexible rules
 - Flexibility systematically chosen based on options for handling uncertainty;
 - Flexibility \neq message that it is OK to violate rules;
 - Flexibility \neq excuse for ill-specified rules;
 - Organizational culture built on competence & trust.

Good rule ?

The correct functioning of the train control system and the automatic traffic control system is to be monitored by the signaller. If necessary, he/she has to intervene manually.

During normal operation, no monitoring is necessary as long as the operational requirements are met.

In the case of disturbances or incidents, the notification of the required services and the required alarm procedures must be guaranteed.

Role of regulators

- Functions of rules
 - Initiating/supporting effective behavioral routines
 - Defining legal accountability
- These functions collide when operator accountability and control do not match.
 - Warning signals: e.g., conflicting rules, discrepancies between rules and routines.
- To enhance operator control, regulators should guide companies' safety management towards an optimal stability–flexibility balance.

(rather than attempting to define, monitor, and enforce
organizations' safety culture)