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School of Applied Psychology

Why Safety Culture Affects Human Behavior

SASCON'11, 26th October 2011
Prof. Dr. Toni Wäfler



A photograph showing two women in profile, looking upwards and to the right. They appear to be in a lecture hall or meeting room, looking at a presentation screen. The woman on the left has curly hair and is wearing a green top. The woman on the right has straight hair and is wearing a blue top. The background is slightly blurred, showing what looks like a presentation screen with some text and images.

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Safety Culture

Slogans

- Safety Culture is how **we do business** around here.
- Safety Culture is how **people behave** when no one is watching.

Formal definition (Montijn & de Jong, 2009)

- Safety Culture is the set of enduring **values and attitudes** regarding safety, shared by every member of every level of an organization.

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Content

One view on safety culture

- How safety culture creates patterns of (safe or unsafe) behavior

Another view on safety culture

- How safety culture shapes the way we perceive the world

A positive safety culture

- Maturity level
- Characteristics

Summary

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The New York Times

September 23, 2011

At UBS, It's the Culture That's Rogue

By **JAMES B. STEWART**

- "When Kweku Adoboli was arrested for an illicit trading scheme that cost his employer ... \$2.3 billion in losses, he was instantly labeled a "rogue trader", suggesting he was an unprincipled scoundrel acting alone."
- "UBS moved swiftly to distance itself."
- "Prosecutors say that Mr. Adoboli's scheme began in October 2008."
- "This doesn't look like a sequence of rogue behaviors – it's a pattern."

Possible Attitude: It's ok to deviate from regulation in order to reach more important objectives.

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One View on Safety Culture

- An organization needs to implement a safety culture.
- That leads to more safety.

The diagram consists of a yellow rectangular background. On the left, the text 'Safety Culture' is followed by a list: '• Attitudes' and '• Values'. An arrow points from this text to a small white square box. From the right side of the box, another arrow points to the text 'Safety', which is followed by a list: '• Patterns of safe / unsafe behavior'.

(Naevestad, 2009)

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Culture's Influence on Human Behavior

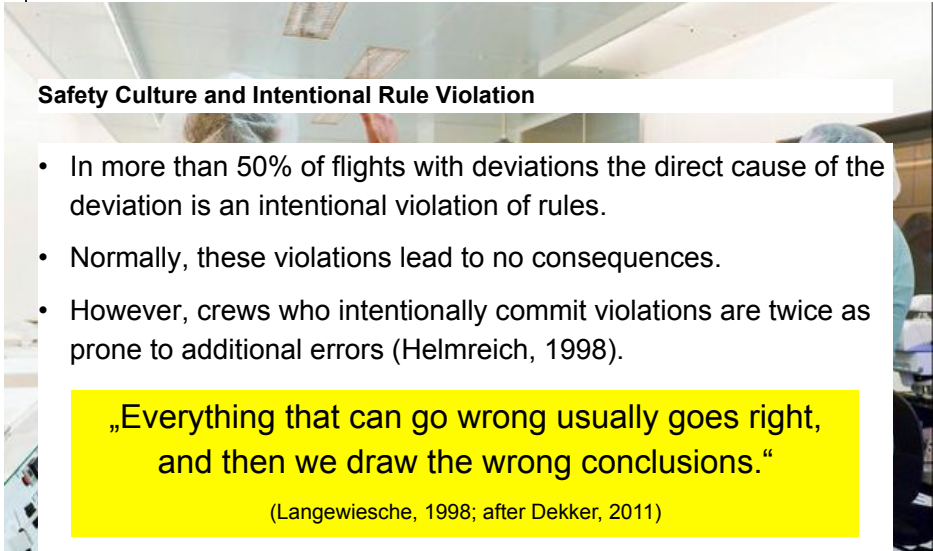
Behavior = Context x Person

The diagram shows two boxes representing 'Context' and 'Person'. The 'Context' box contains a list: '• Tasks / Resources', '• Rewards / Sanctions', '• Models / Management', and '• ...'. The 'Person' box contains a list: '• Knowledge', '• Skills', and '• Attitudes'. A thick orange arrow points from the 'Context' box to the 'Person' box. Both boxes are enclosed in a larger orange oval. Below the boxes is a light blue horizontal bar.

Culture Creates Patterns of Behavior

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Safety Culture and Intentional Rule Violation

- In more than 50% of flights with deviations the direct cause of the deviation is an intentional violation of rules.
- Normally, these violations lead to no consequences.
- However, crews who intentionally commit violations are twice as prone to additional errors (Helmreich, 1998).

„Everything that can go wrong usually goes right, and then we draw the wrong conclusions.“
(Langewiesche, 1998; after Dekker, 2011)

Possible Attitude: It's ok to deviate from regulation in order to reach more important objectives – even management does so.

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65'000 Times of Non-Airworthiness

- In April 2008, pilots of an United Airlines aircraft shortly after takeoff in Denver had to shut down one engine and to return to the airport, because oil pressure was too low.
- An investigation revealed that the cover of the oil inlet was missing.
- Instead, mechanics had just wrapped two towels around the opening.
- Thus, the plane had been traveling for four months. It flew 200 times in "non-airworthy state".
(www.tagesschau.de, 2010)

Possible Attitude: It's required do deviate from regulation in order to safe myself / avoid sanctions.

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Eight Barriers Were Breached

Well integrity was not established or failed

(Reason, 1997)

Blowout preventer did not seal the well

Possible Attitude: It worked last time, hence it will work again this time.

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(Rasmussen, 1997)

Drift into Danger

Boundary of functionally acceptable performance

Boundary to Economic Failure

Gradient toward Least Effort

Experiments to improve performance creates «Brownian movement»

Management Pressure toward Efficiency

Boundary to Unacceptable Work Load

Resulting perceived boundary of acceptable performance

Space of Possibilities: Degrees of Freedom to be Resolved According to Subjective Preferences

Possible Attitude: Customer satisfaction has number one priority.

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One View on Safety Culture FUNCTIONALIST

- An organization needs to implement a safety culture.
- That leads to more safety.

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graph LR; A["Safety Culture  
• Attitudes  
• Values"] --> B[""]; B --> C["Safety  
• Patterns of safe /  
unsafe behavior"]
```

(Naevestad, 2009)

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Another View on Safety Culture

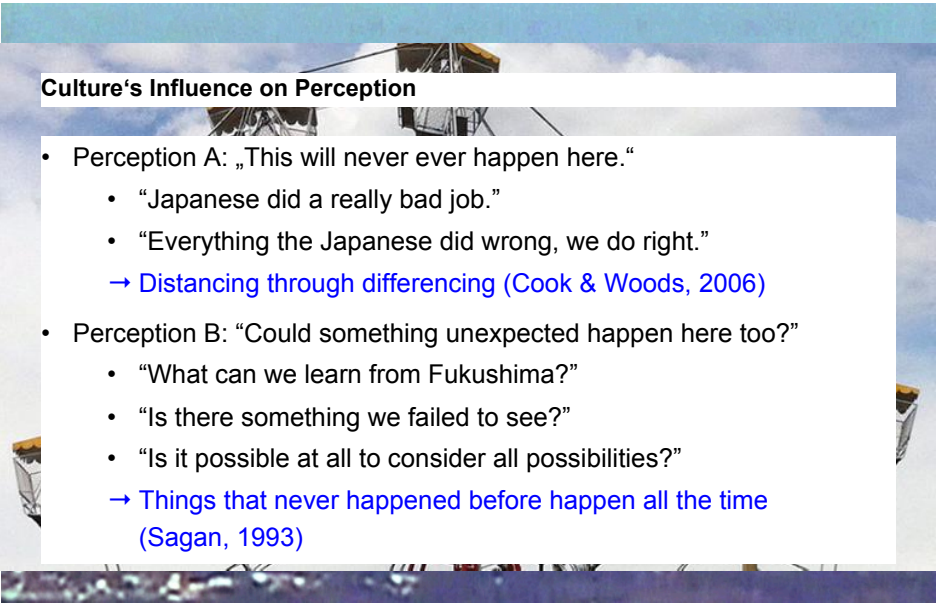
- We (all of us) are embedded in a culture
- The way we conceive the world is influenced by that culture
 - What we consider to be risky
 - What we consider to be safe



Safety Culture
Perception
safe / risky

(Naevestad, 2009)

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Culture's Influence on Perception

- Perception A: „This will never ever happen here.“
 - “Japanese did a really bad job.”
 - “Everything the Japanese did wrong, we do right.”

→ Distancing through differencing (Cook & Woods, 2006)
- Perception B: “Could something unexpected happen here too?”
 - “What can we learn from Fukushima?”
 - “Is there something we failed to see?”
 - “Is it possible at all to consider all possibilities?”

→ Things that never happened before happen all the time (Sagan, 1993)

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Culture's Influence on Perception

The way we perceive the world influences the way we act in the world.

Perception A: „This will never ever happen here.“

- Negative reaction: Justifying, neglecting, denying
- Positive reaction: Trying hard to be prepared by identifying hazards, mitigating risks (Reason, 1997)
- Objective: To be prepared

Perception B: “Could something unexpected happen here too?”

- Questioning, mindfulness (Weik & Sutcliffe, 2007)
- Objective: To be prepared and to be prepared to be unprepared (Pariès, 2011; Hollnagel et al. 2011)

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Another View on Safety Culture: **INTERPRETATIVE**

- We (all of us) are embedded in a culture
- The way we conceive the world is influenced by that culture
 - What we consider to be risky
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(Naevestad, 2009)

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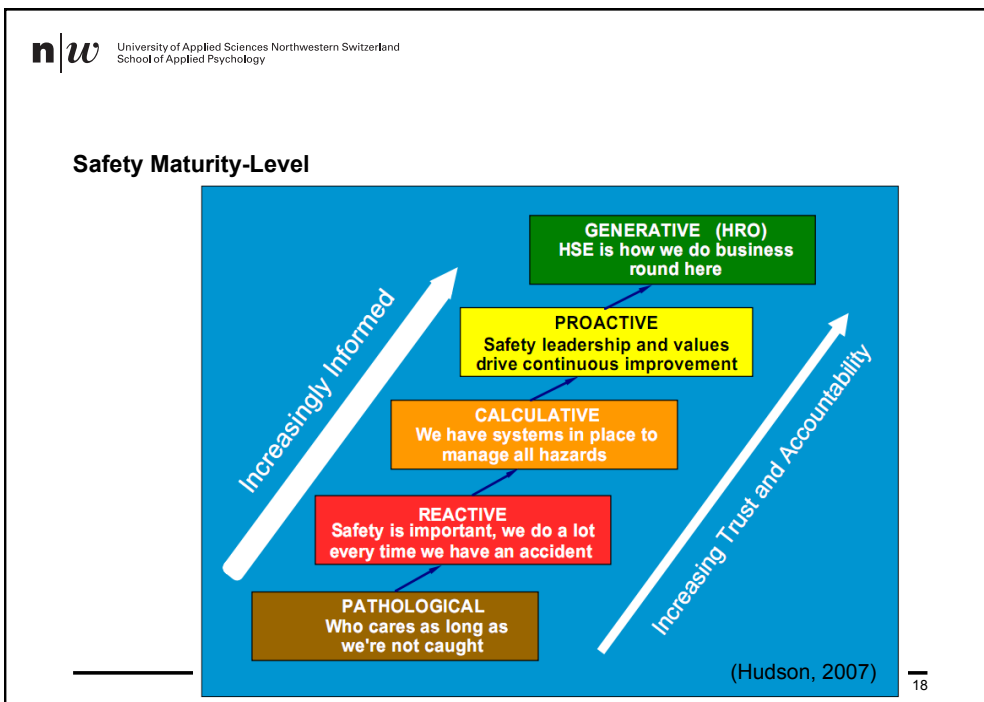
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Six Characteristics of a Positive Safety Culture

Commitment: Do we (really) recognize the importance of safety?

Awareness: How aware are we of risks?

Information: Does the management know, what the people know?
Do the people know, what the (safety) management knows?

Adaptability: Do we learn from experience?
Are we ready to change?

Behavior: Do we do everything for maintaining and improving safety?

Justness: Do we encourage safe behavior?

(Montijn & de Jong, 2009)

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Summary

Safety culture

- Shapes people's attitudes
- And hence creates patterns of behavior

Safety culture

- Shapes people's perception of the world
- And hence what they consider risky or safe
- And hence creates patterns of behavior

Maturity level and characteristics of safety culture

- We all believe to be safe (especially when we are on a low maturity level)
- A positive safety culture helps to find problems before they create accidents
- A positive safety culture makes us mindful and keeps us alert

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Literature

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Many Thanks for Your Attention

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