

# Culture's Confusions Clarified but the Climate is Still (Partly) Cloudy

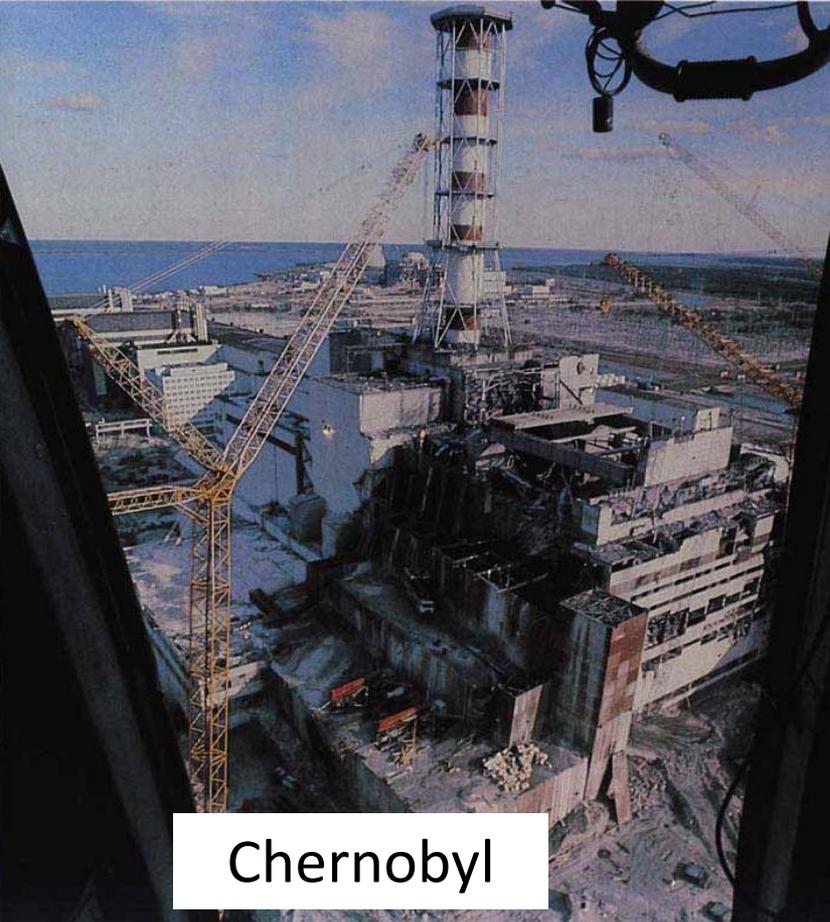
Steven Hecker, University of Oregon/CPWR  
Safety Culture Workshop  
Washington DC  
June 11, 2013

# My Job This Morning

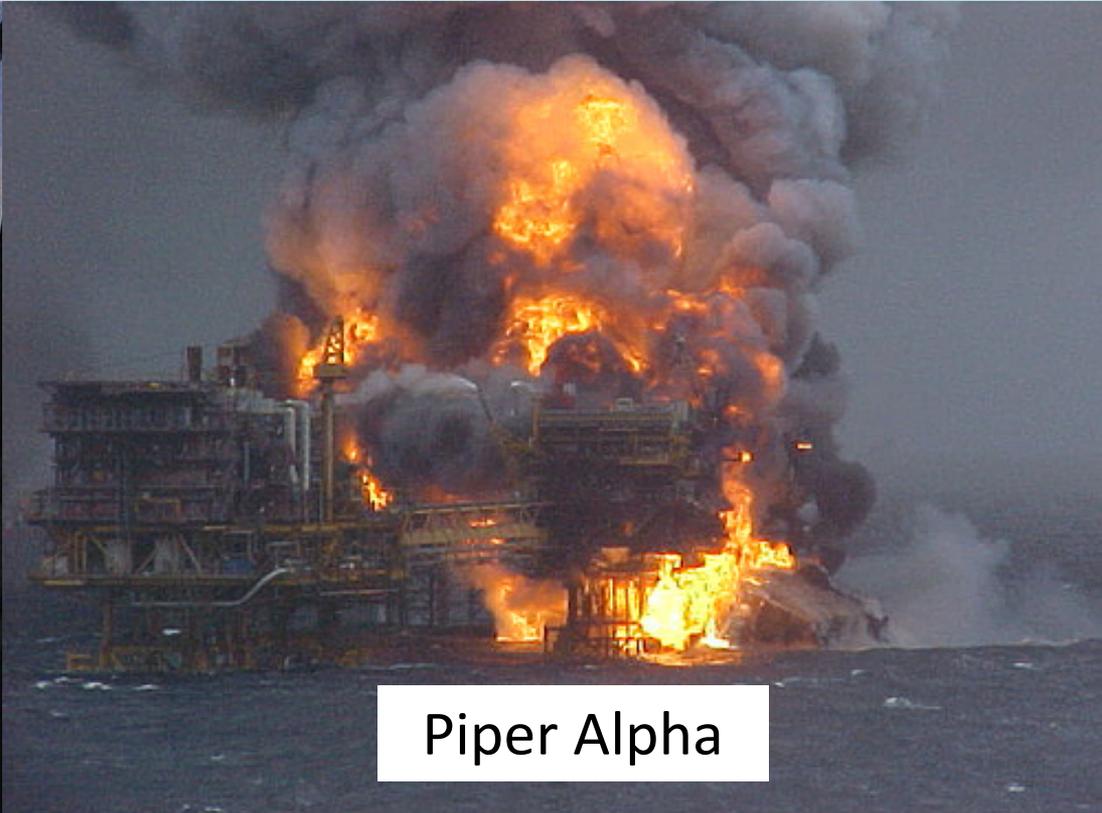
- Why are we talking about safety culture?
- A brief history of safety culture and safety climate
- Measurement
- Factors/components of safety culture and climate
- Behavior, safety, and safety culture

# Why Safety Culture?

- Recognition that something fundamental to organizations, not just technical failures, led to catastrophic incidents



Chernobyl



Piper Alpha



Tenerife

# High Reliability Organization (HRO)

HROs are organizations with systems in place that are exceptionally consistent in accomplishing their goals and avoiding potentially catastrophic errors. The industries first to embrace HRO concepts were those in which past failures had led to catastrophic consequences

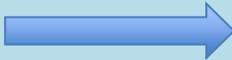
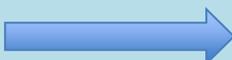


- **Commercial aviation**
- **Nuclear power**
- **Chemical process**



These industries found it essential to identify weak danger signals and to respond to these signals strongly so that system functioning could be maintained and disasters could be avoided.

# Evolution of incident prevention strategies in HROs (Wiegmann et al. 2002)

- Technical period  Engineering
- Human error stage  Psychology, Human factors
- Sociotechnical  Sociology, psychology, engineering
- Organizational (Chernobyl)  Sociology, anthropology, org. psychology, Human factors engineering

## Meanwhile...

- Zohar (1980)- Safety **climate** in Israeli manufacturing

*“A summary of ‘molar’ perceptions that employees share about their work environment “*

- Dedobbeleer & Béland (1991)- First test of safety climate model in construction

# Safety Culture and Safety Climate

- Derive from Organization Culture and Climate
- Comprise research from multiple disciplinary traditions
- Are often confused and conflated, but
- How important is the distinction???

# Culture

Man is an animal suspended in webs of significance he himself has spun; I take culture to be those webs.

*(Geertz 1973)*

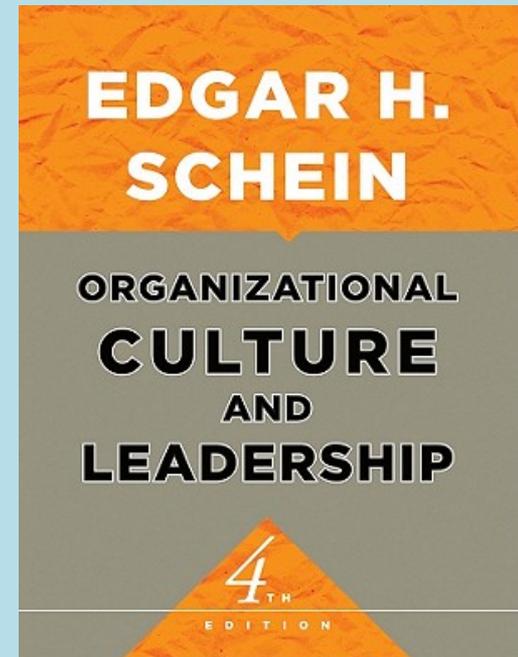
## Hecker

According to ~~Tharp (2007)~~ <sup>v</sup>, efforts to define culture have invariably led to exasperation. (Edwards et al. 2013)



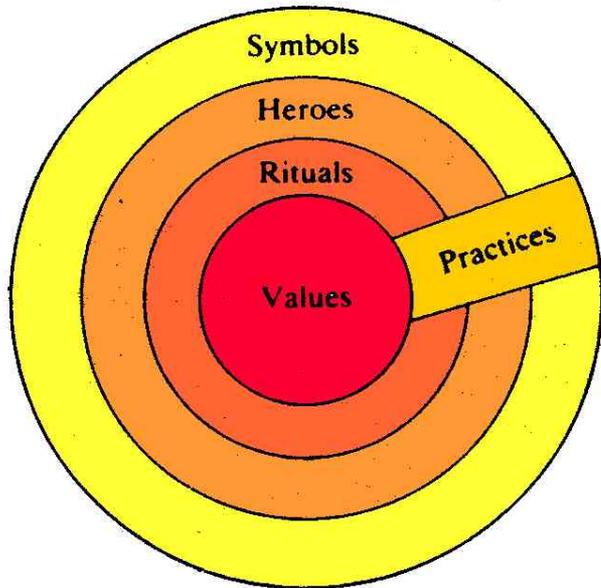
# Organizational Culture

A pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be taught to new members as the correct way to perceive, think, and feel in relation to those problems. (*Schein 1992*)

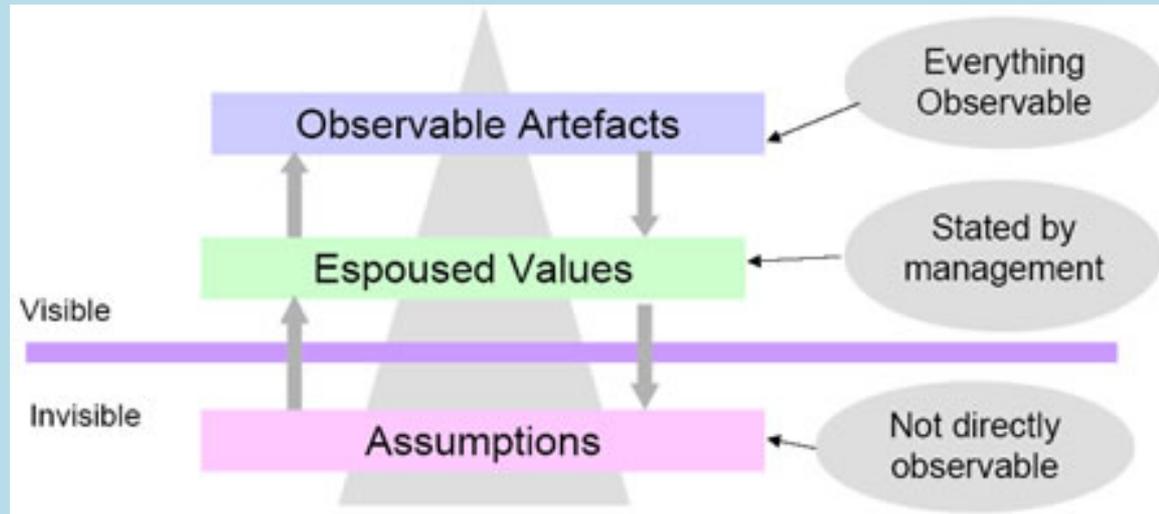


# Culture as a Noun or Culture as a Process

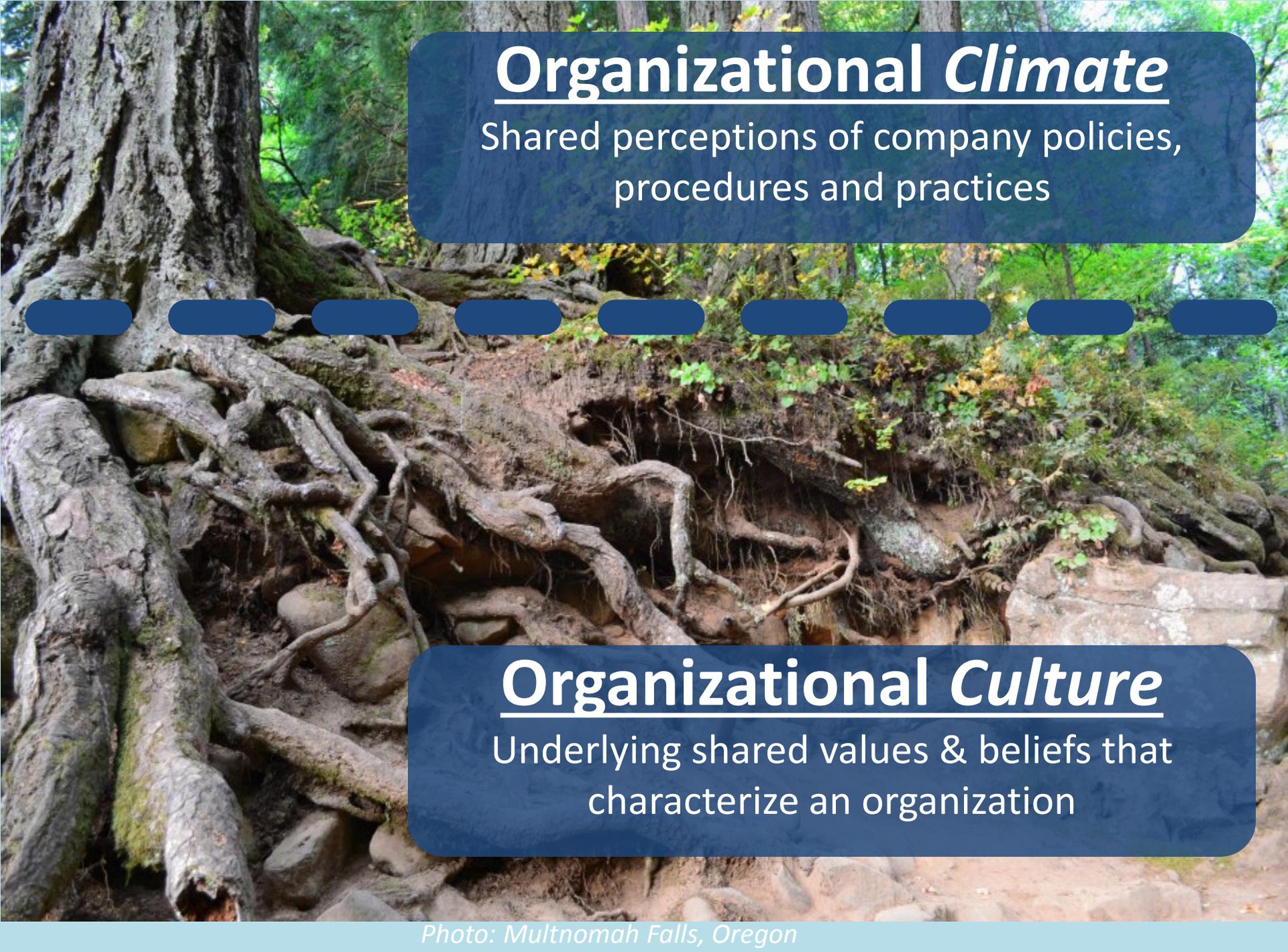
## Culture as a layered phenomenon



Hofstede onion



Schein

A photograph of a large tree with thick, gnarled roots exposed on a rocky, mossy forest floor. The background shows a dense forest with green and yellowing leaves. The image is used as a background for a slide about organizational climate and culture.

# Organizational *Climate*

Shared perceptions of company policies, procedures and practices

# Organizational *Culture*

Underlying shared values & beliefs that characterize an organization

<b>Culture</b>	<b>Climate</b>
Deep	Snapshot
Stable	Superficial
Values/principles/ convictions	Perceptions
Qualitative	Quantitative

Seo 2004

Personality analogy:

Culture: Trait (fixed) :: Climate: Mood state (variable)

## Chernobyl

Organizational Culture  Safety Culture

- . . . assembly of characteristics and attitudes in organizations and individuals, which establishes that, as an overriding priority, nuclear plant safety issues receive the attention warranted by their significance (INSAG 1987)
- The safety culture of an organisation is the product of individual and group values, attitudes, perceptions, competencies, and patterns of behaviour that determine the commitment to, and the style and proficiency of, an organisation's health and safety management (UK Health and Safety Commission 1993)

# What's the value of Safety Culture for safety?

- Ironically the “gold standard” of safety and health performance, injury rates, is not so golden
  - Lagging (trailing) indicator

## **Safety, Incentives, and the Reporting of Work-Related Injuries Among Union Carpenters: “You’re Pretty Much Screwed If You Get Hurt at Work”**

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Hester J. Lipscomb, PhD,<sup>1\*</sup> James Nolan,<sup>2</sup> Dennis Patterson,<sup>2</sup> Vince Sticca,<sup>3</sup> and Douglas J. Myers, ScD<sup>1</sup>

## Even if injury reporting is accurate

- If an organization is striving for zero incidents and it's anywhere close, there's not much lagging data to go on
- Personal injury data is not necessarily predictive of likelihood of catastrophic events
  - BP Texas City- 2005

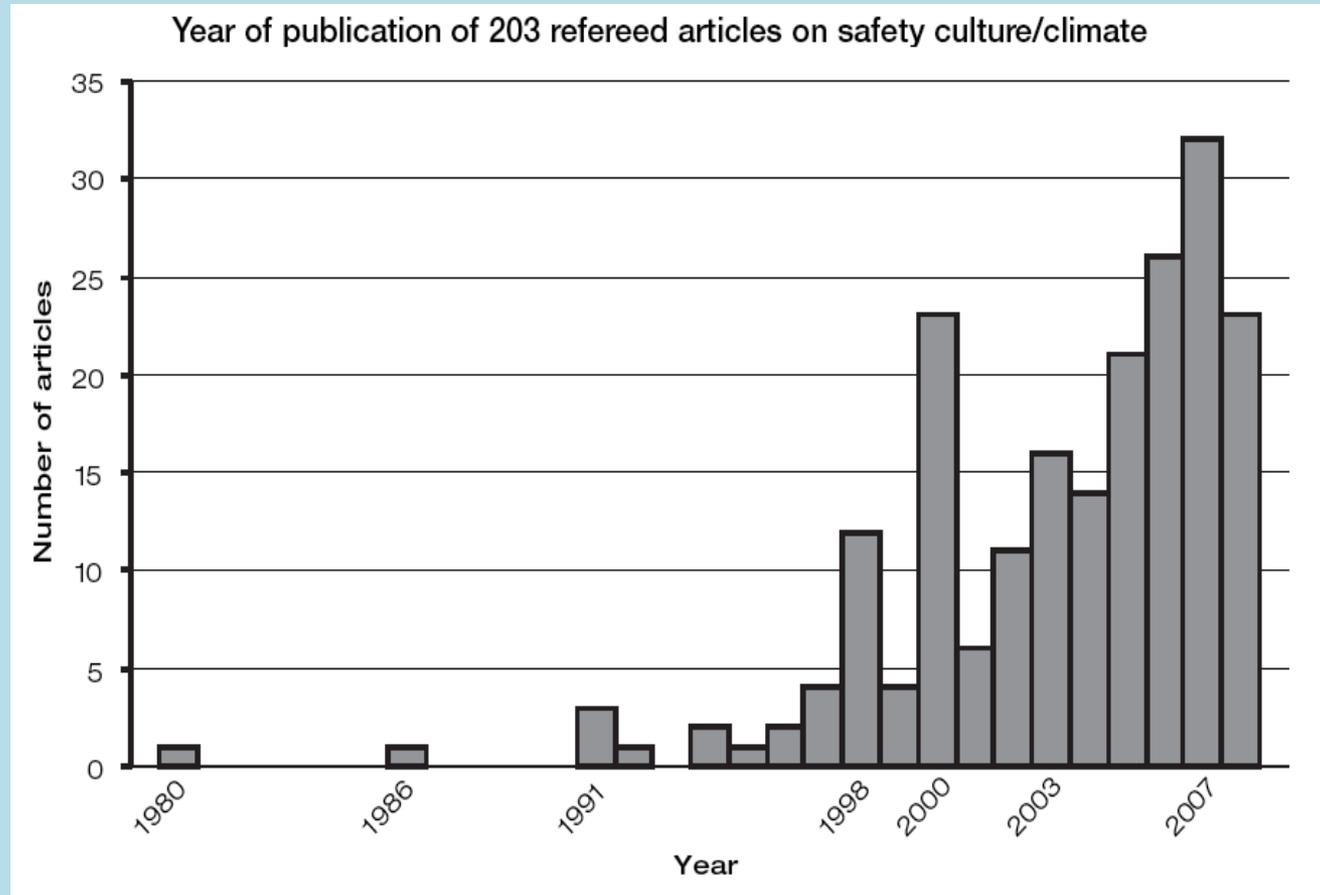
**So we're looking for better leading indicators . . .**

# Connecting leading and lagging retrospectively

- Organizational correlates of lost-time injury rates (Shannon et al, 1996, 1997)
- Disability prevention among Michigan employers (Hunt et al. 1993)
- Organizational Policies and Practices Questionnaire (OPPQ) (Amick et al. 2000)

**But we still want to predict safety outcomes with leading indicators**

# Publications on safety culture/climate- 1980-2008



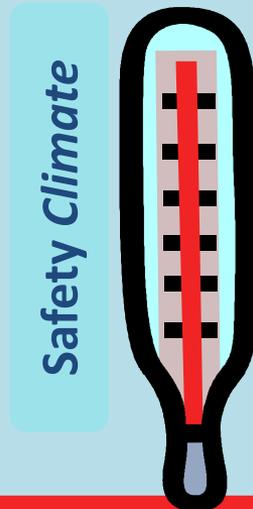
(Glendon 2008)

# Safety culture/climate research questions

- Definitions of the two concepts
  - “Culture’s Confusions” Hale (2000)
  - “Safety culture: Philosopher’s stone or man of straw?” Cox & Flin (1998)
- Effective measurement tools
- Predictive value for safety outcomes
- How do they overlap, interact, or integrate with formal safety management systems?

# Safety Culture/Climate Measurement

- Perception surveys are the most common tool
- Common factors measured by climate scales
  - Management commitment
  - Employee involvement/empowerment
  - Supervisory safety support
  - Safety competence level
  - Work pressure and safety
- Agreement or divergence between **espoused** and **enacted** policies and procedures
  - Gaps between management and front-line perceptions
- “Shared perceptions” seemed to work if the data were aggregated at the right level

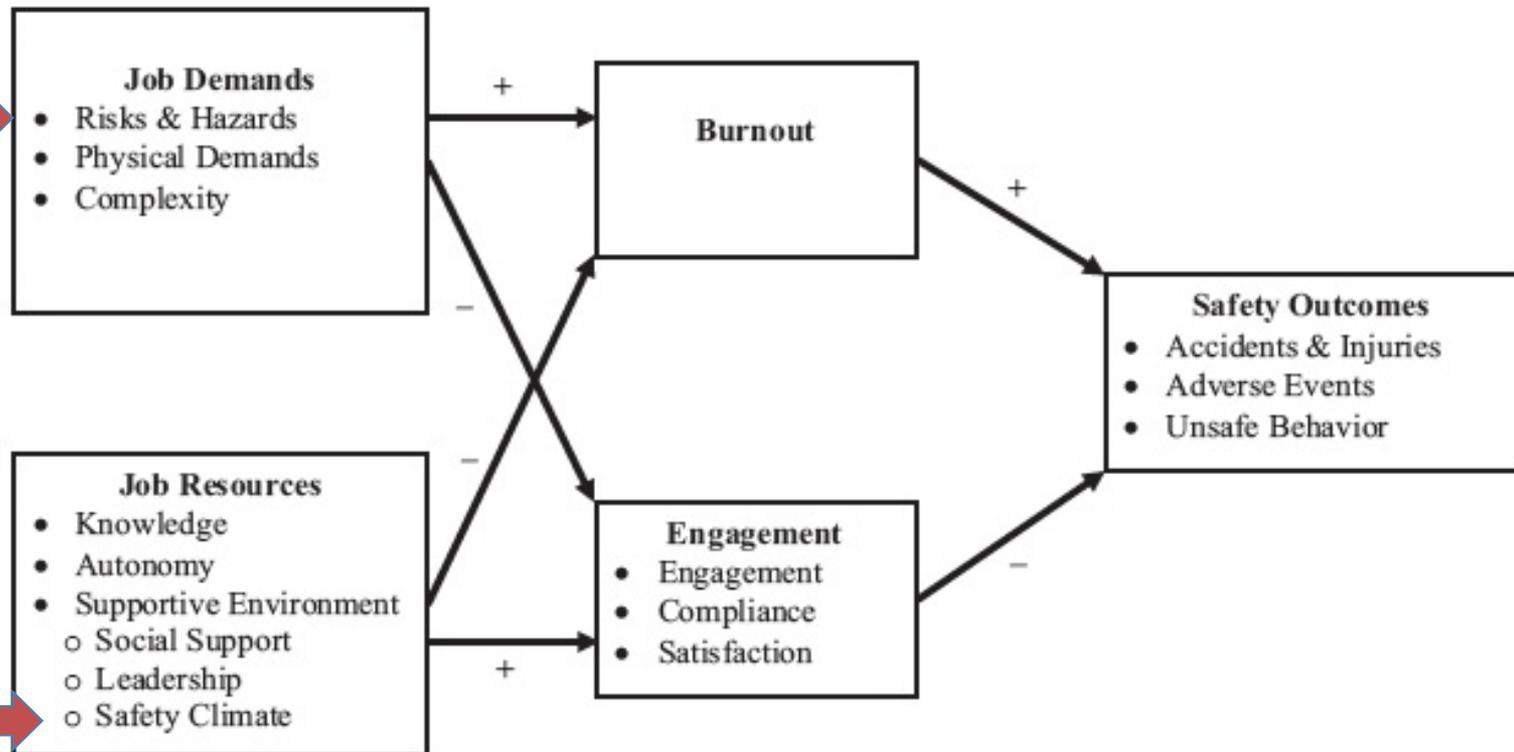


**Safety Culture**

# Does Safety Climate Predict Safety Outcomes?

- Meta-analyses

- Nahrgang et al. 2010, 179 studies (203 samples)



## Safety Culture

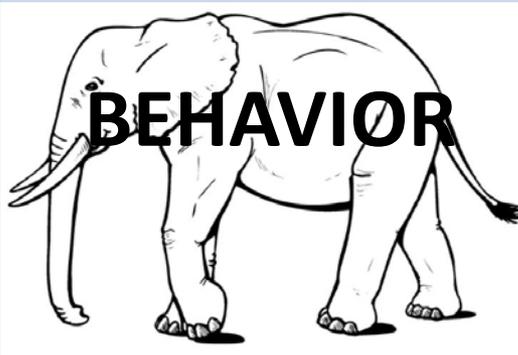
- Values, beliefs
- Deep, stable
- The way we do things here
- Management culture
- Craft culture
- Artifacts
- Communities of practice
- Learning culture

## Safety Climate

- Shared perceptions
- Superficial, snapshot
- Mgmt commitment
- Trust
- Safety vs production
- Accountability
- Empowerment
- Safety compliance
- Safety participation

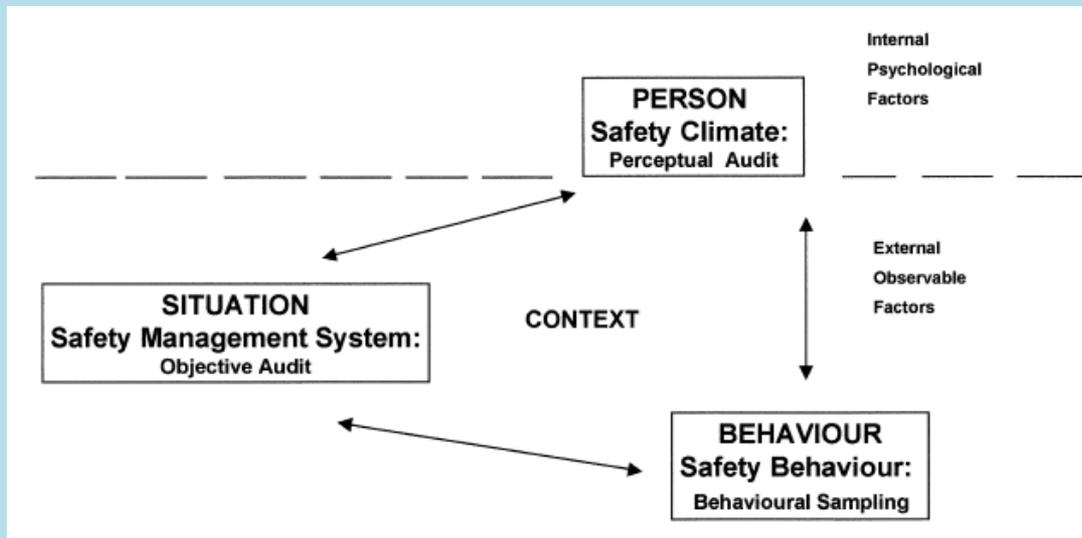
## Safety Program

- Safety mgmt systems
- Safety audits
- Hierarchy of controls
- JHA
- Safety performance
- Root cause investigation
- Safety training





Divergent attributions of causality and responsibility for adverse events can undermine an organization's ability to manage safety- DeJoy 2005



“It is fashionable to claim that human error is implicated in 80-90 percent of all major accidents. While probably close to the truth, this statement adds very little to our understanding of how and why organizational accidents happen.”

Reason, *Managing the Risks of Organizational Accidents*, 1997

# Safety Culture and Behavior Based Safety (BBS)

- It's fair to say that safety culture research and practice frequently drew on BBS, e.g. Geller, Krause
- Strong presence of psychological approach in safety climate research
- Overemphasis on the sharp end (front line worker) rather than the blunt end (organization/management)?

“Although invocation of safety culture seems to recognize and acknowledge systemic processes and effects, it is often conceptualized to be measurable and malleable in terms of the attitudes and behaviors of individual actors, often the lowest-level actors, with least authority, in the organizational hierarchy.”

(Silbey 2009)

# Can Behavioral and Cultural Approaches be Complementary?

- Strengths and weaknesses of each approach complement each other
  - BBS is bottom up; culture is top down
  - BBS overemphasizes immediate causes; cultural looks at systems
  - BBS is quantitative; culture is qualitative, more vague
- Is there an integrative model?

# Critique of DeJoy

- Rarely are BBS programs initiated by workers
- Ignores power differentials
- Doesn't account for multiple cultures with different, perhaps competing, beliefs and perceptions
- Development of a safety culture should not be a “quest for organization-wide agreement and harmony”  
(Antonsen 2008)
- However. . . if negotiated constructively conflicting views and interpretations can produce learning and improved safety (Tharaldson & Haukelid 2009)

If you too are now feeling like this . . .



# Here are a couple of additional perspectives that might help

## A positive and effective safety culture

- Propels toward maximum safety and health despite external pressures and specific leaders
- Respects all that can go wrong; “doesn’t forget to be afraid”
- Is an **informed** culture
- Is a **reporting** culture
- Is a **just** culture
- Is a **flexible** culture
- Is a **learning** culture

*(Reason, Managing the Risks of  
Organizational Accidents, 1997)*

# And . . .

- Human Error
  - Errors and behaviors are symptoms and consequences, not causes or the “problem” in themselves
  - Safety climate/culture should encourage looking at errors as data, not as cause for blame
  - Spend our time looking for error-prone situations, not just error-prone individuals
- Accountability is what we’re really looking for...**at all levels**

# Summary and Takeaways

- Hazards are real and organizations must eliminate or control them
- Safety culture and climate are measurable constructs
  - Done well they have value as leading indicators
- Errors and behaviors are symptoms and data, not causes or triggers for blame-finding

# Summary and Takeaways

- A just culture balances safety and accountability
- Information and how its used may be the most critical factor of all.

# Safety (like culture) is a process

- Not separable from production
  - “Quality of production and protection is dependent on the same underlying organizational processes”
  - “Risk management, like life, is ‘one damn thing after another’ ”

(Reason, *Managing the Risks of Organizational Accidents*, 1997)