

Halifax 5, Calgary, October 20-22 2005

## *Advancing the Culture of Safety*

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## *Westrum's classification of three types of safety culture*

- Generative
- Calculative
- Pathological

Main differences lie in the way organisations treat safety-related information. Some deny it, others are bothered by it, yet others actively seek it out and reward the messenger.

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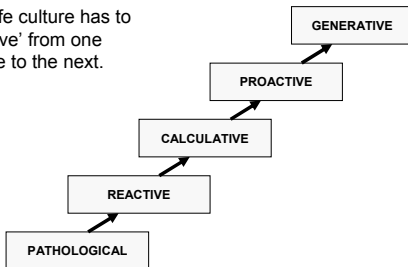
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## *Hudson: An evolutionary progression*

A safe culture has to 'evolve' from one stage to the next.



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## *Cultural 'strata'*

|              |   |
|--------------|---|
| GENERATIVE   | Respects, anticipates and responds to risks. A just, learning, flexible, adaptive, prepared & informed culture. Strives for resilience. |
| PROACTIVE    | Aware that 'latent pathogens' and 'error traps' lurk in system. Seeks to eliminate them beforehand. Listens to 'sharp enders'.          |
| CALCULATIVE  | Systems to manage safety, often in response to external pressures. Data harvested rather than used. 'By the book'.                      |
| REACTIVE     | Safety given attention after an event. Concern about adverse publicity and ranking. Establishes an incident reporting system.           |
| PATHOLOGICAL | Blame, denial and the blinkered pursuit of excellence (Vulnerable System Syndrome). Non-clinical targets prevail: cheaper/faster.       |

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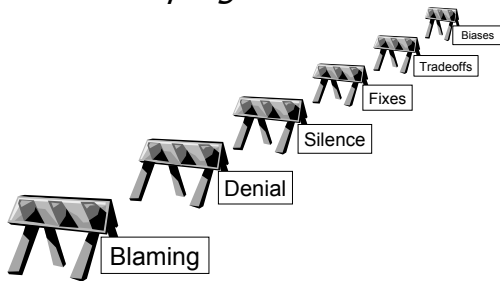
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## *Some barriers to cultural progression*




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## *Barriers to improvement* *Leape & Berwick (2005)*

- HC technology more complex and diverse than in other domains (e.g., aviation).
- Commitment to individual professional autonomy.
- Fear of malpractice liability stifles discussion.
- Leadership: few CEOs committed to safety.
- Paucity of measures and change indices.
- Current reimbursement system: subsidises unsafe care, and does not encourage safe care.

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## *Conflicting sub-cultures*

Nurses expect and receive more severe sanctions for behaviours that may be explained away in senior clinicians or managers. (NPSA study 2004)



Wide differences between professional groups as to what constitutes safe clinical practice and correct conduct.

Many doctors reject written rules. Seen as stifling. Nurses see rule compliance as synonymous with professionalism. View doctors as rule-breakers. (McDonald et al 2005)

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## *Pressures to blame*

- Causal perceptions
- Counterfactual fallacy
- Fundamental attribution error
- Illusion of free will
- Just world hypothesis
- Inappropriate error models
  - Plague model
  - Person model
  - Legal model

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## *Penalties of blaming individuals*

- Failure to discover latent conditions
- Failure to identify error traps
- Management having its eye on the wrong ball
- A blame culture and a reporting culture cannot co-exist

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### *Dynamics of denial*

- Everyday experience: one patient per US hospital every two months (Berwick)
- Not seeing the problem: 'We treat the sick and the injured, so safety is a naturally emergent product of our core business'
- Entrapment: the Bristol Royal Infirmary pathology (Weick & Sutcliffe)
- The 'normalization of deviance'
- Forgetting to be afraid

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### *Organizational silence* *(Morrison & Milliken)*

- People unwilling to communicate problems upwards.
- Silence most evident when . . .
  - Leaders have a business background
  - A stable and mature organization
  - Demographic dissimilarity
  - Heavy reliance on contingent workers (e.g., agency nurses and locum physicians)

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### *Penalties of silence*

- Little challenging of ideas leads to poor decision making.
- Lack of negative internal feedback leads to poor error detection and correction.
- Employees feel undervalued and powerless:
  - Low trust, low commitment & low job satisfaction
  - Greater job-related stress
  - Higher rates of withdrawal & turnover

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*Fixes & workarounds  
(Tucker & Edmondson)*

- Observed 26 nurses at nine hospitals for 239 hours.
- Problems: missing information, broken equipment, delays, missing supplies, etc.
- Short-term fixes for 93% of problems.
- Management not informed, underlying causes not dealt with.
- Nurses burn out early, leave profession.

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*Protection & Production:  
A delicate balance*

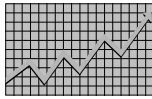
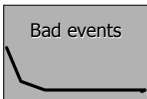
Protection data

- delayed
- intermittent
- ambiguous
- unreliable



Production data

- immediate
- continuous
- unambiguous
- reliable



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*The production-protection  
tension creates some pathologies*

- Trading off improved defences for increased production.
- Attempting too much with too little: the 'can-do' syndrome.
- Believing that past non-events predict future non-events.
- The blinkered pursuit of non-clinical targets.

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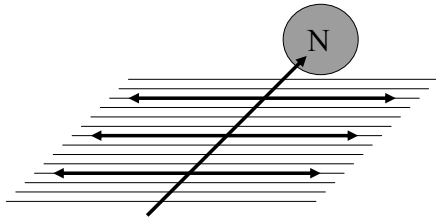
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*Thinking in causal series rather than causal networks*



Unaware of side-effects

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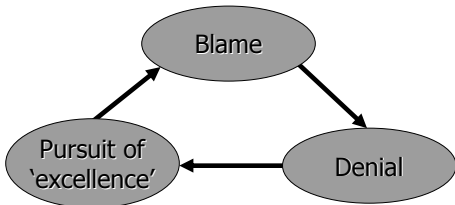
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*Vulnerable System Syndrome  
A self-perpetuating cycle*



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*Applying the 'logic' of VSS*

- **Blame:** There may be a few bad apples, but the barrel is OK
- **Denial:** If the barrel's OK, then anyone who says differently is either stupid or malicious—anyway, when did we last have a widely publicised bad event?
- **Pursuit of 'excellence':** Now we've sanctioned the bad apples and gagged the whistleblowers, we can focus on meeting our targets

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*Investigative biases that impede learning from past adverse events*

- Hindsight bias
- Symmetry bias
- Outcome bias
- Counterfactual fallacy

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*Hindsight bias*

- 'Creeping determinism': Observers of past events exaggerate what other people should have been able to anticipate in foresight.
- In retrospect, the lines of causality appear to converge on the event. No such obvious convergence existed at the time.
- A warning is only a warning if you know what kind of bad event you're going to have.

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*Symmetry bias*

- Sir Francis Bacon (1620): *'The human mind is prone to suppose the existence of more order and regularity in the world than it finds'*
- One way of simplifying the world is to presume a symmetry of magnitude between cause and consequences.

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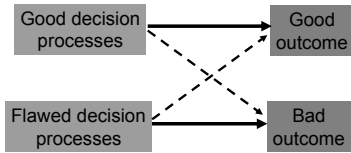
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## *Outcome bias*

Relates to the influence of outcome knowledge upon evaluations of prior decision quality.



We naturally assume there is correspondence. (But history teaches us otherwise.) Leads to revamping good decision processes.

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## *Flight Readiness Review & Mission Management Team (Columbia)*

- The context:
  - STS-107 was a low-orbit, low-priority science flight.
  - All 100+ prior flights had sustained foam damage.
  - In 22 years all but one had landed safely.
  - The *Challenger* tragedy had other causes.
  - Strong schedule pressure from Feb 19 2004 deadline.
  - Engineering concerns not really heard during mission.
- Communication failed and the outcome was bad, but was the decision making process really flawed?

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## *Counterfactual fallacy* *(Evident in the CAIB Report)*

- All accident investigations reveal systemic shortcomings.
- They are present in all organizations.
- It is then a short step to argue that these latent 'pathogens' caused the accident.
- There are always organizational interventions that could have thwarted the accident sequence.

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*More on counterfactuals*

- But their absence does not demonstrate a causal connection.
- The fallacy: If things had been different, then the accident would not have happened; *ergo*, the absence of such differences caused the accident.
- Organizational factors are conditions rather than causes.

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*Some ways to go*

- Break free of the myth of medical infallibility.
- Cease treating errors as a moral issue. Fallibility is the norm not the exception.
- Recognise that you can't change the human condition, but you can change the conditions under which people work.
- Reconcile conflicting sub-cultures.
- Chronic unease and requisite imagination.

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