"The influence of leader's behaviours in preventing Safety Incidents"

Research into 'as close as we can get'

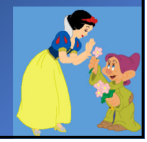
Presentation based on PhD research by Victor Roggeveen
Faculty Governance and Global Affairs (FGGA)
Leiden University, The Netherlands

My professional history

What we believe….

(or: How we perceive safety)

The Titanic is unsinkable



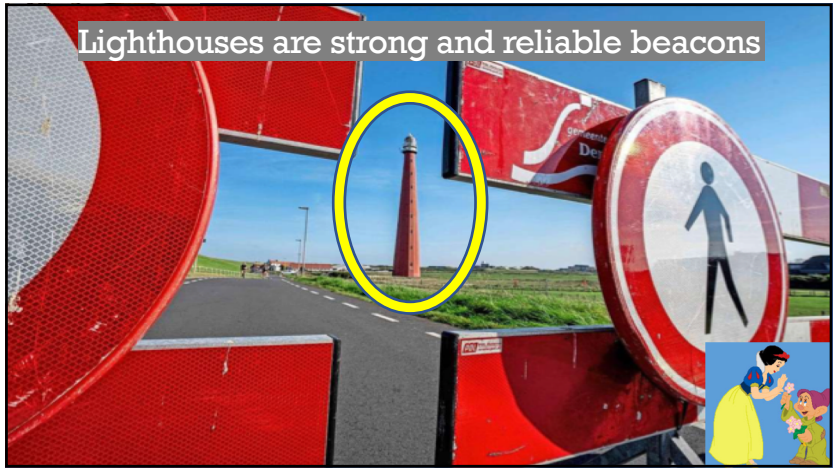
Groningen is a safe place to live

A stadium is a safe place to be

Our chemical industry is perfectly in control

…Pollution of waterways is no issue anymore

Remote operation of bridges is a safe process

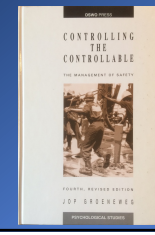

Lighthouses are strong and reliable beacons

I don't believe in fairy tales!

…so I made this presentation.

Behaviour and safety

- Human behaviour is a causal factor in many process upsets.
- However, this does not necessarily mean that those involved were:
  - dumb
  - ignorant
  - reckless
  - not motivated or
  - insufficient 'safety aware'!

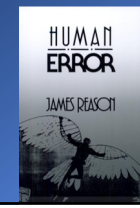


Source: "Controlling the Controllable", Groeneweg (1992).

How do we err?

- **Unintended** behaviours:
  - Slips (OOPS!)
  - Lapses (Forgetting)
- **Intended** behaviours:
  - Mistakes (intended action in unknowm context)
  - Violations

>95 % !



"Human Error", Reason (1990).

Our behaviours are seriously induced by our situational **CONTEXT**!

Physical climate
Communication
Housekeeping
Procedures
Work pressure
Useability of tools
etc.

And on top of that there is NOISE !

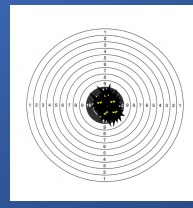
'Undesired variability in judging our context.'

(or: measuring, using the human brain as measurement instrument.)

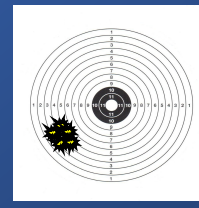
Source: "NOISE", Kahneman et al. (2021).

Effective, bias (systematic deviation) and noise

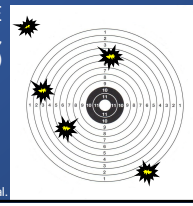
BULL's EYE!
(Effective)



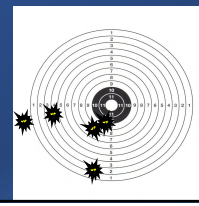
BIAS
(5 mistakes: identical cause)



NOISE
(5 mistakes: infrequent, random causes)

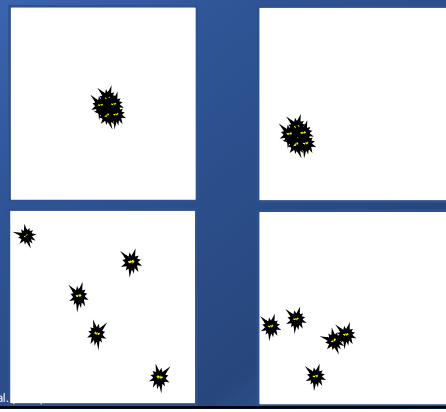


BIAS + NOISE
(5 mistakes: infrequent random causes in 1 quadrant)



Bron: "RUIS", Kahneman et al.

Non referenced observations are **meaningless**

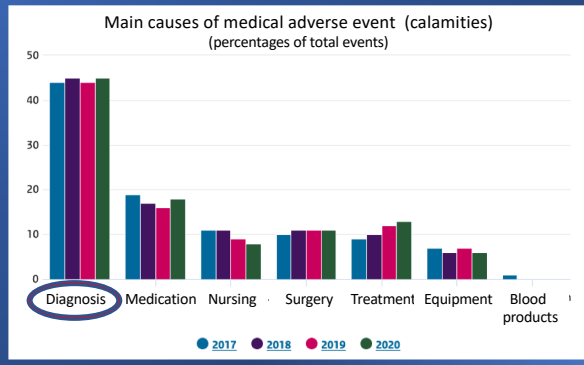


Bron: "RUIS", Kahneman et al.

Symptoms of noise

- Objective vs subjective ignorance
  - Unknowns nobody could have known vs unknowns one could have known
- Intuition, gut feeling, judging
  - The higher positioned, the more self confident
- *Respect* experts vs *real* experts
  - If *he* says so, it must be true!

If the doctor says so…



Source: Dutch Health Care Inspectorate (IGJ)

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- Experts vs *respect* experts
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- Ignoring or violating procedures/rules/agreements
  - Often based on sincere, but noise induced reasons.

WHY DO PEOPLE VIOLATE?

WE VIOLATE BECAUSE:

WE CAN'T UNDERSTAND THE NECESSITY OF COMPLIANCE,

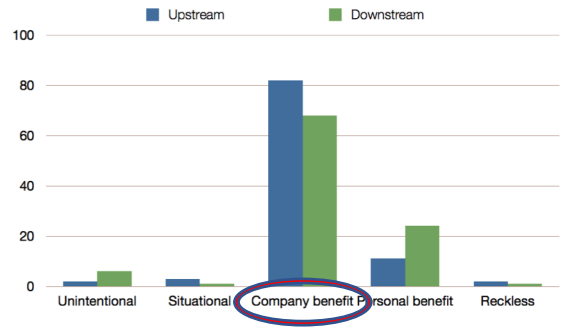
RULES ETC. SOMETIMES OBSTRUCT 'SMOOTH OPERATIONS' ,

AND, SIMPLY, BECAUSE WE LIKE TO TAKE THE FASTEST WAY,

AND… **EVERYONE** VIOLATES,

BUT ALWAYS '**FOR THE CLUB**'!

Motives for violating procedures in the oil/gas industry



Hudson, 2010

Symptoms of noise

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- Ignoring or violating procedures/rules/agreeements
  - Often based on sincere, but noise induced reasons.
- Causal reasoning
  - When a plausible scenario feels good, *the* cause has been found!

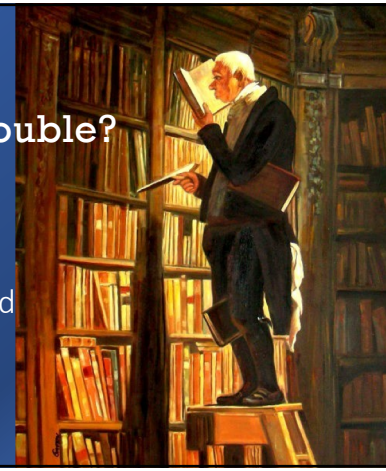
Causal reasoning stimulates noise

- An intense desire to 'clarify' an event leads to the construct of p*lausible stories*.
- Who knew the 'knowable unknowns' and why didn't the people involved know?
- The occurrence of an event is selfexplanatory, but only afterwards...
- The sense of explainability induces the illusion of predictability.
- Retrospective knowledge (hindsight bias) is a vicious seducer!

Bron: "RUIS", Kahneman et al. (2021).

How do we prevent trouble?

After 40+ years of operational practice, this question triggered me to undertake my research project.

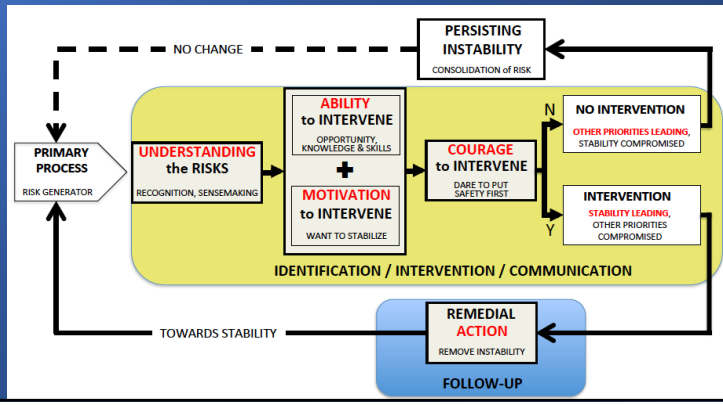


Do leaders influence the prevention of safety incidents?

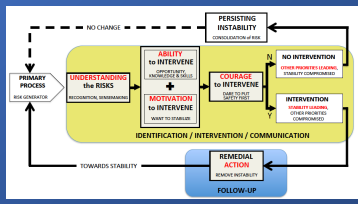
About leaders and their risk reducing role.

PhD research 2013 – 2021
3332 respondents, 33 organisations, 7 sectors
Faculty Governance and Global Affairs (FGGA)
Dual PhD Centre, Leiden University

Risk reduction cycle



Effectiveness of Risk Reduction process
(research results)



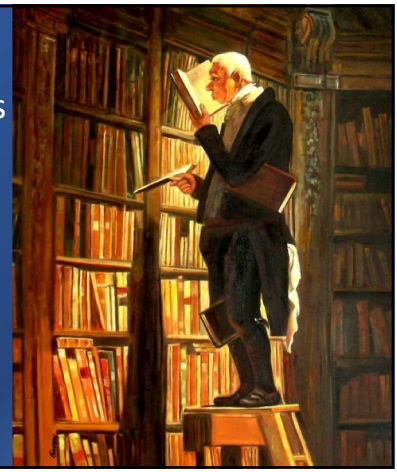
1. UNDERSTANDING (strong!)
2. MOTIVATION
3. ABILITY
4. COURAGE
5. ACTION (weak!)

- Employees think they KNOW the risks (incident analyses tell otherwise).
- Employees WANT to intervene.
- Employees also CAN intervene.
- Employees DARE to intervene a little less.
- Organizations take no (or late) corrective action. (ACTION)

And... Risk Reduction strongly correlates with incident prevention/safety

But are leaders' behaviours *really* of influence on incident prevention?

And, if so:
How is a **safe leader** characterized???



4 LEADERSCHIP MINDSETS

- RELATION oriented
  (Sheep)

- SELF oriented
  (Wolf)

- PRODUCTION oriented
  (Wolf in sheep clothing)

- BUSINESS PROCESS oriented
  (Sheep dog)

CHARACTERISTICS of these MINDSETS

RELATION

Listens well;
Is compassionate and helpful;
Creactes a positive atmosphere;
Stimulates education.

SELF

Is status conscious;
Is individualistic;
Sometimes behave hostile;
Abuses others' good will.

PRODUCTION

Often intuition steers his/her leadership;
Has guts, does what he/she deems right,
even if procedures prescribe otherwise;
Production rules!

PROCESS

Works towards optimal production,
but gives priority to safety;
Stimulates interventions;
Ensures that necessary improvements
are implemented;
Shows understanding for mistakes.

Which leader influences safety, in what way?

What is the **effect** of leaders' **behaviours** on safety?

The 'SAFE' LEADER IS…

BUSINESS PROCESS ORIENTED

PROCESS
Works towards optimal production, but gives priority to safety;
Stimulates interventions;
Ensures that necessary improvements are implemented;
Shows understanding for mistakes.

Recommendations:
Business Process oriented Safety Leadership Principles

1. Don't skimp on safety
2. Assure a sufficient number of competent staff
3. Enable all employees to perform their duties in a safe way
4. Empower employees to refuse to work under unsafe conditions
5. Arrange professional safety leadership training for all leaders at all levels
6. Allocate sufficient time for dialogues with workforce at their workplaces
7. Actively encourage identification and communication of safety hazards
8. Monitor implementation and achieved effects of risk reducing measures

Thank You!