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# Managing Human Factors

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## **In this presentation:**

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- A little bit of psychology (why people behave the way they do)
- Human error
- Performance Influencing Factors (PIFs)
- What HSE is looking for
- Where to get advice & guidance

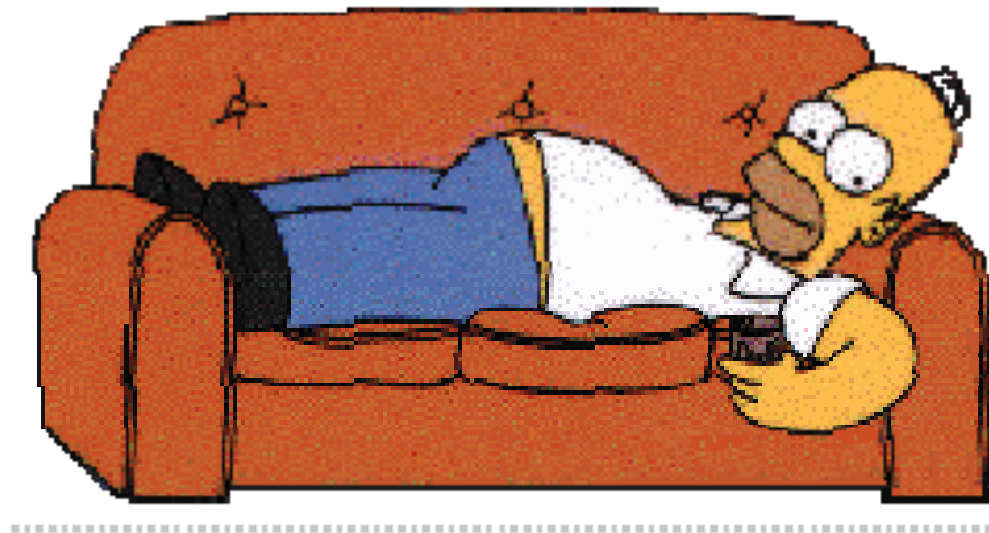
# Adaptable

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# Designed to avoid effort

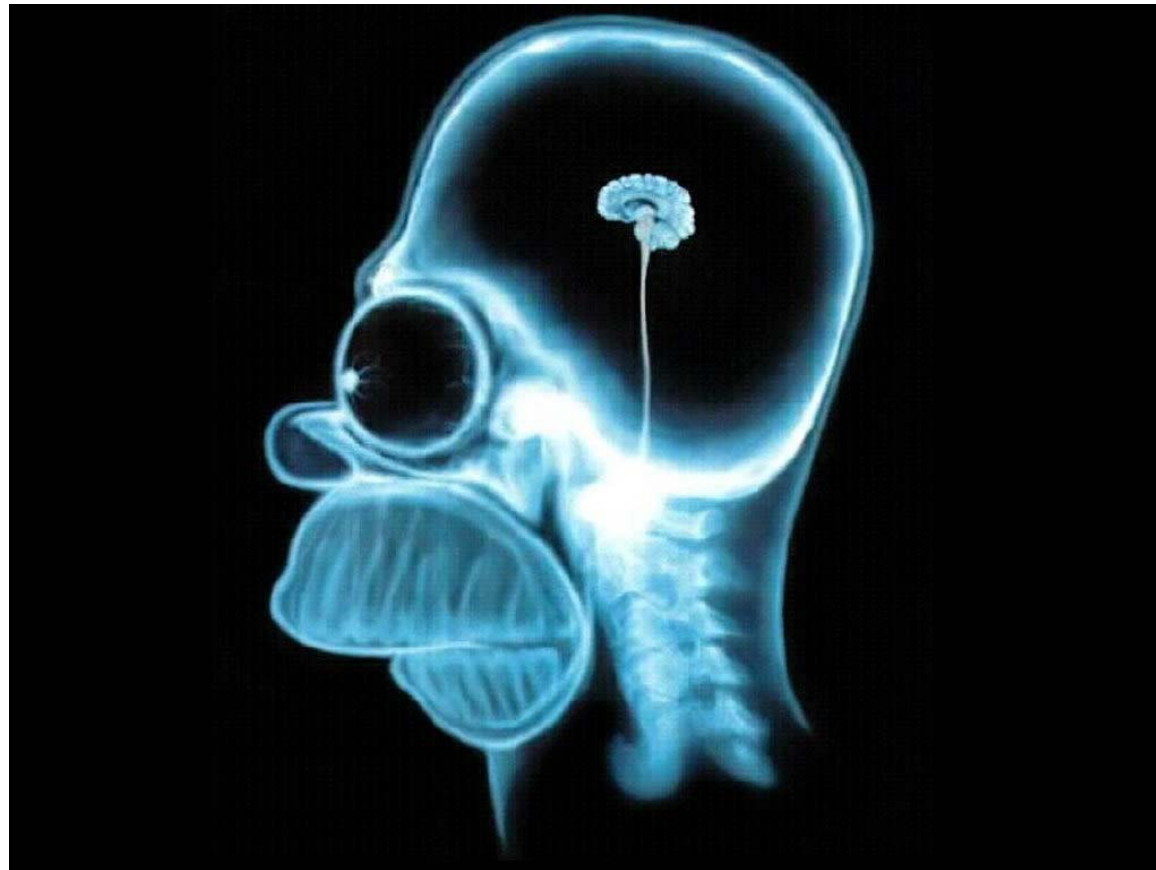
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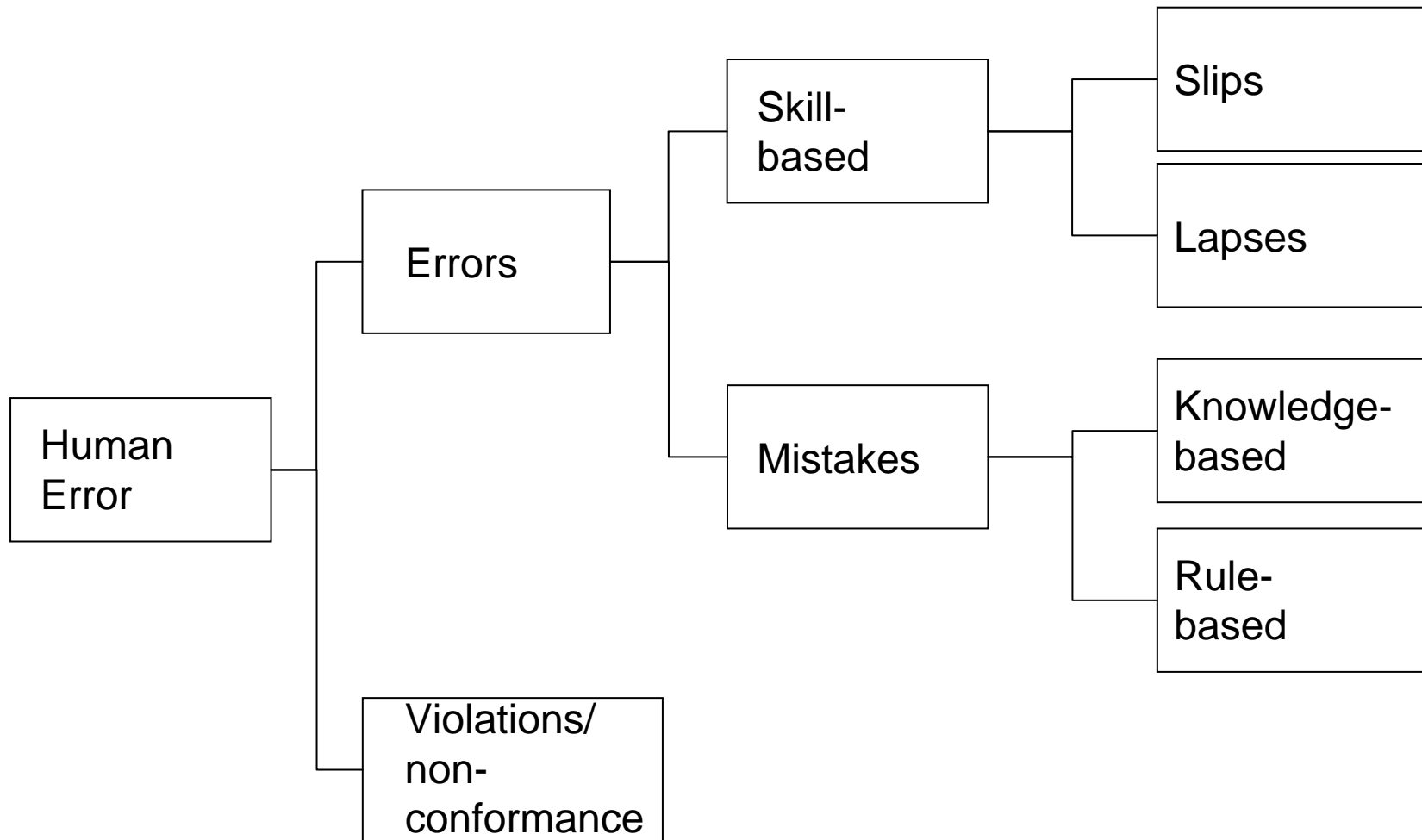
A strong basic motivation for taking short cuts

# A limited capacity processor

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# Error Taxonomy



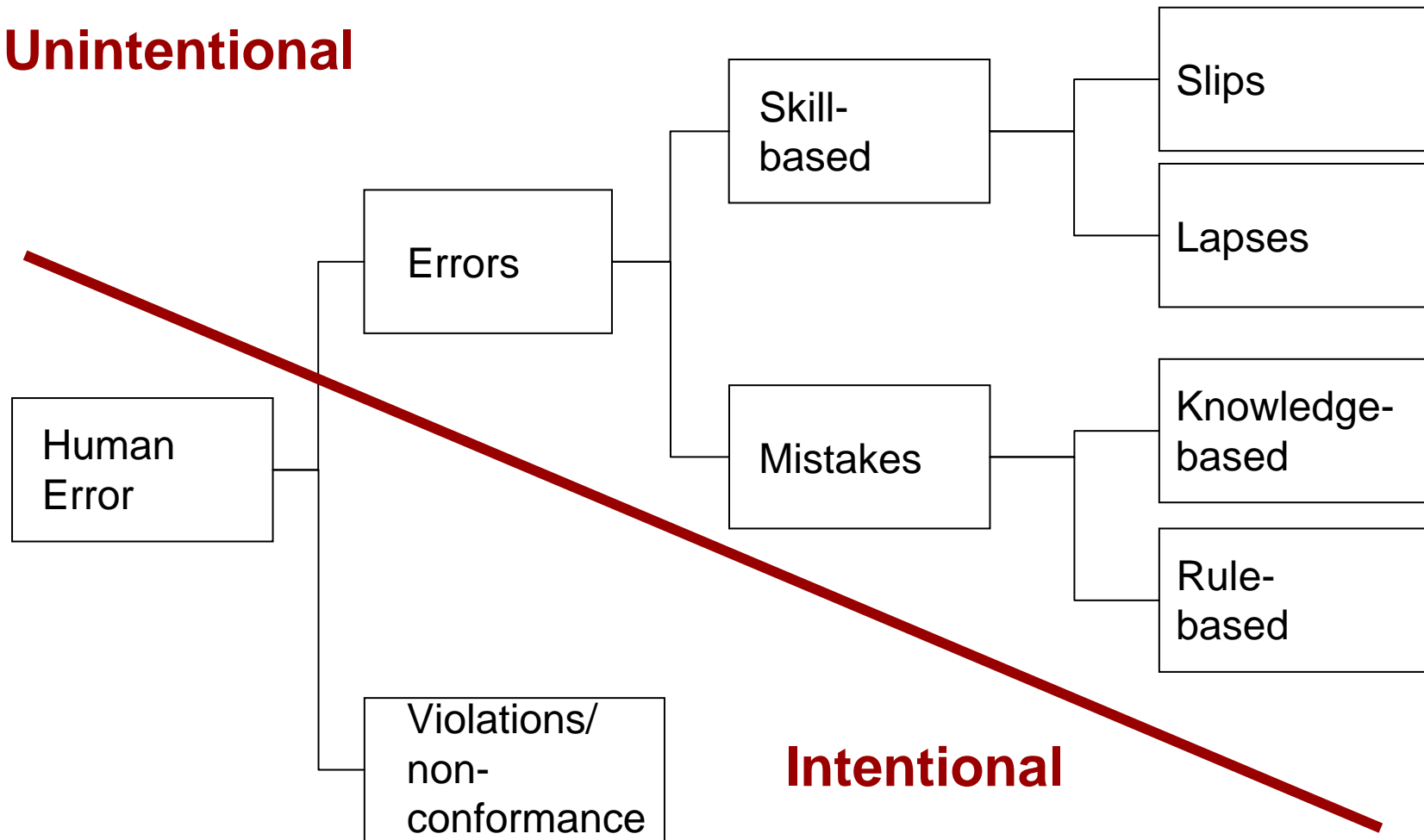
We cannot easily avoid errors we do not intend to make



# Error Taxonomy



**Unintentional**



**Intentional**



# Violations

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- Because we can
- Because everybody does
- Because it's culturally approved
- Because it's quicker/more efficient
  - Poor planning
  - Pressure to perform on time
  - Boredom/discomfort
- Because we get away with it
- Because we don't see the risk

# Performance Influencing Factors (PIFS)

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# PIFS



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- Culture
  - Organisational change
  - Shift work/Fatigue
  - Work/Rest scheduling
  - Competency
  - Risk Perception/Acceptance
  - Supervision
  - Communications
  - Design of:
    - Tasks
    - Procedures
    - Environment
    - Equipment
  - Time pressure
  - Distractions
  - Conspicuity
  - Individual capabilities (selection of personnel)

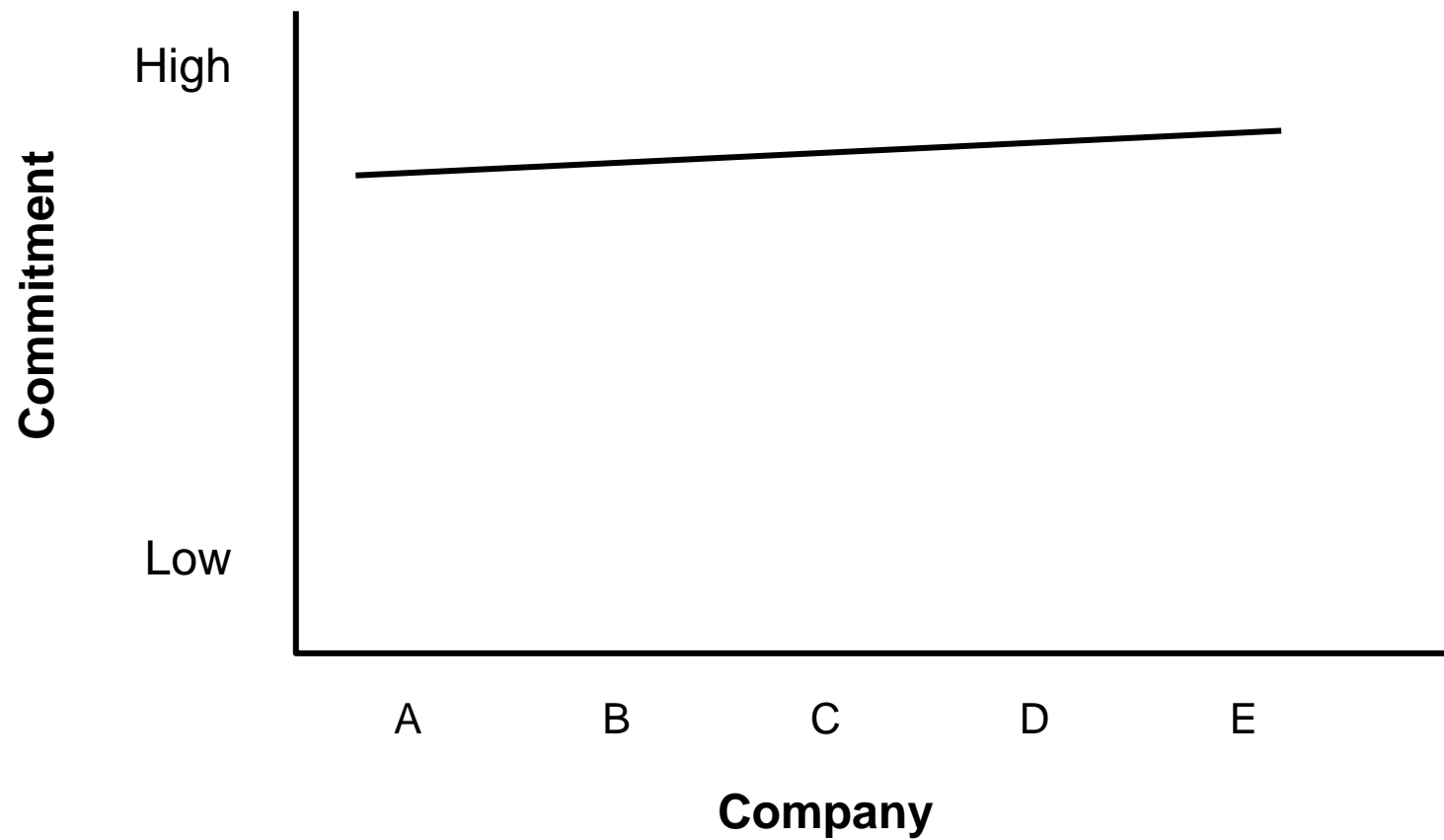
# Culture

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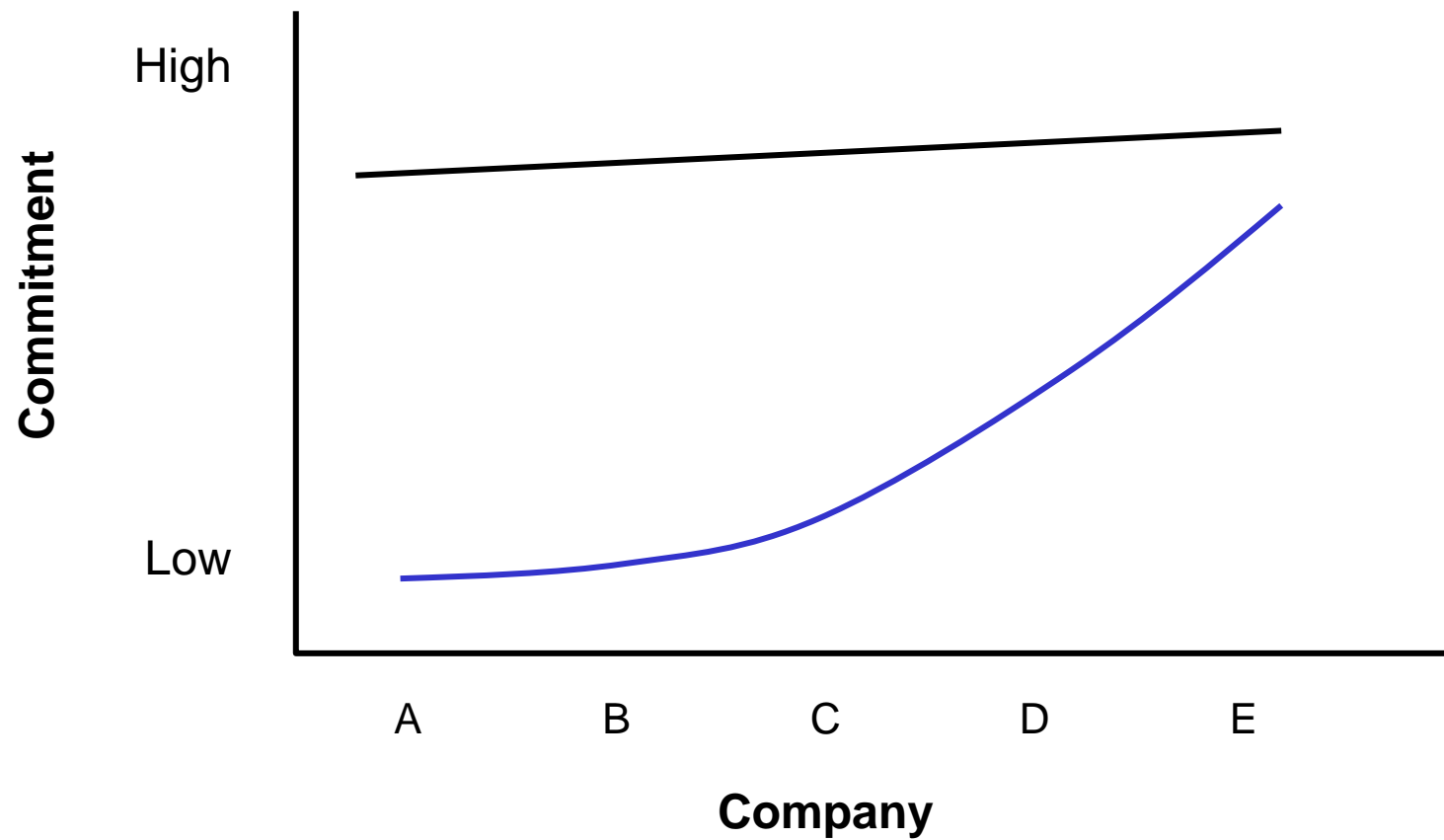


- **Leadership (visible commitment)**
- **Employee Involvement**
- Communication
- Training & Competence
- Motivation
- Learning Organisation
- **Compliance with procedures**

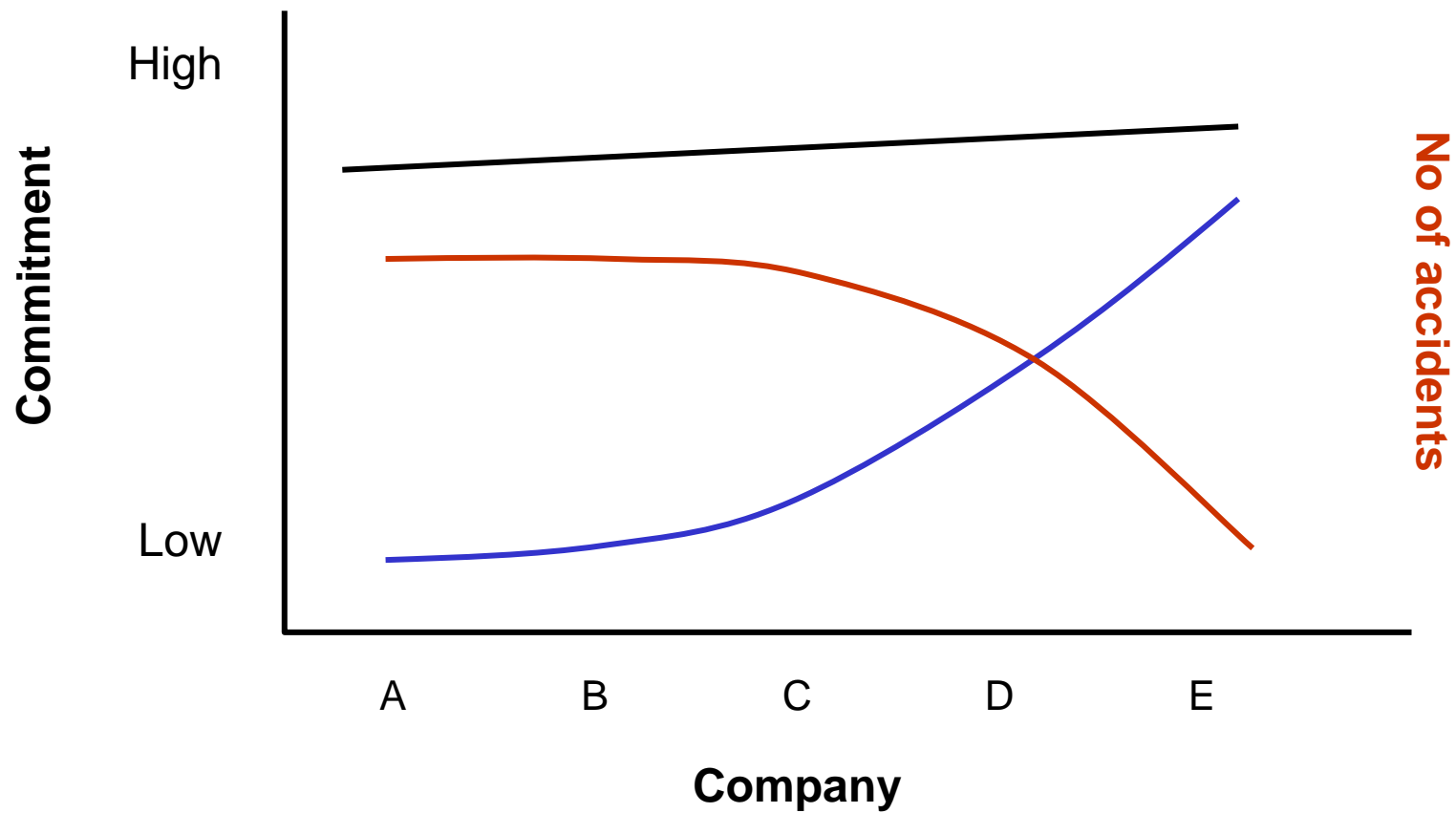
# Leadership – what the managers said



# Leadership – what the employees believed



# Leadership - How the company performed



# Shift-work & Fatigue



- Decrement to coordination, decision-making, reaction times, microsleeps
- WTR insufficient to manage fatigue
- HSG256



# Time Pressure

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- Production deadlines
- End of shift/breaks
- Manning levels
  
- Taking shortcuts
- Making do vs appropriate maintenance
- Availability



# Communications



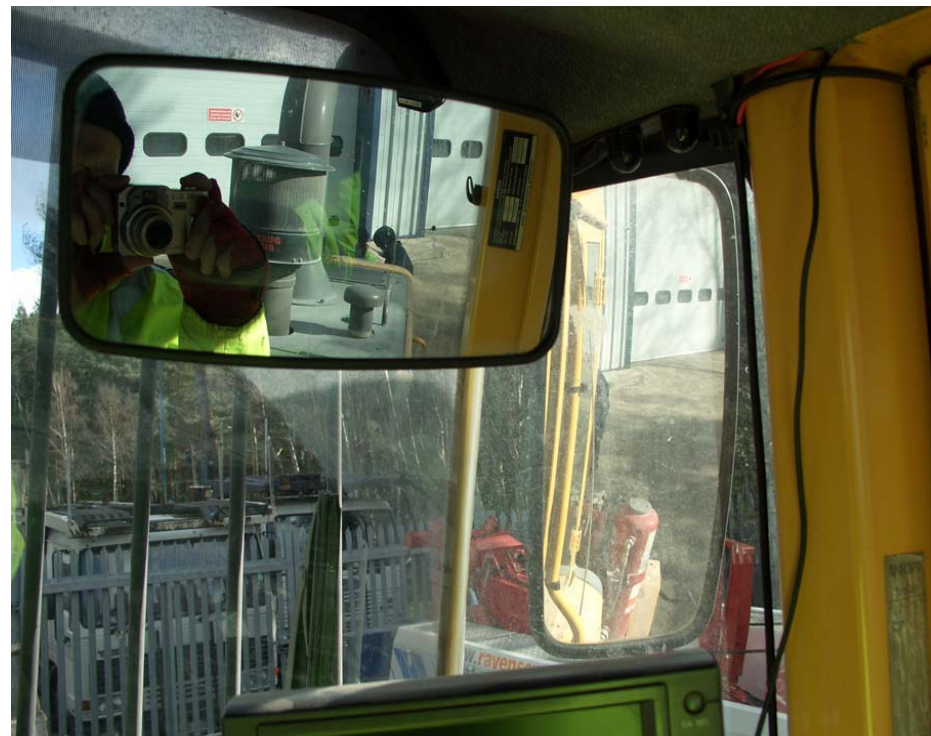
- The right information
- At the right time
- Two way process

# Human-centred design

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Design of controls, instruments and displays



# Managing Human Performance (1)

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- Identify safety critical tasks (risk assessment)
- Analyse task steps (walk-through/talk-through)
- Identify type of error that could occur (slip, lapse, mistake, non-conformance)
- Identify PIFs

# Clearing a blockage in a baler



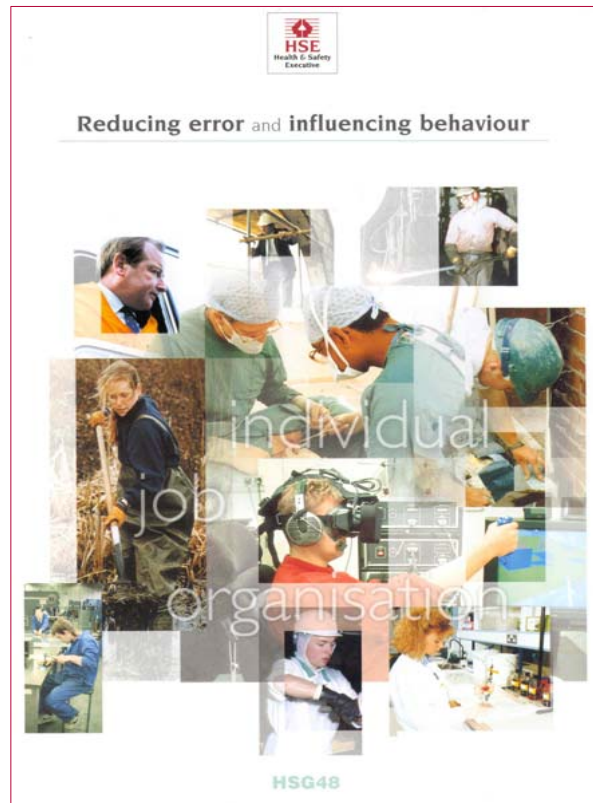
# Managing Human Performance (2)

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- Apply hierarchy of control measures
  - Prevent
  - Recover
  - Mitigate
- Training/procedures won't stop slips/lapses

# Advice & Guidance



HSG48

Reducing Error and  
Influencing Behaviour

<http://www.hse.gov.uk/humanfactors/index.htm>

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