

# HAZARD PERCEPTION

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Linde plc

1

Can you read that?

# A,B,C,D,E,F

2

**10, 11, 12, 13, 14**

3



6:00pm and  $-15^{\circ}\text{C}$

Why is there an accident?

4

Accident investigation of fatal accidents:

**Accident Prevention & Insurance Association**  
Chemical Industry 2004 - 2015

Number of fatal accidents: 228

The causes of death and the associated risks were easily visible (N=228)?

Yes

Rate

For the injured person

For the management

Did the fatally injured colleague have a direct influence on the accident (N=228)?

Yes

No

No answer possible

5

### 1. Hazard perception

- Different perception thresholds
- Motivation and experience knowledge

### 2. Risk assessment

- Different assessment of the hazard
- Familiarity with the hazard

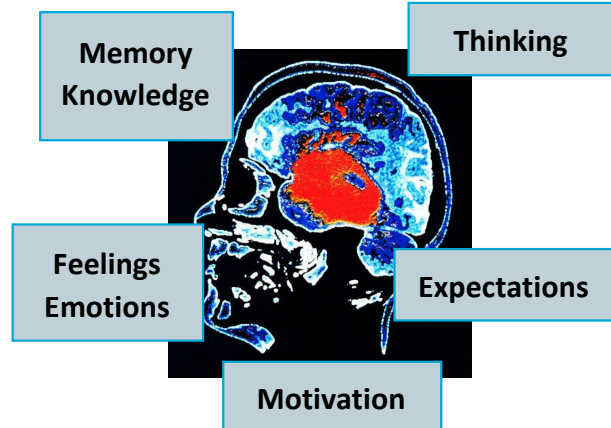
### 3. Decision on the necessary behaviour

6

The word "**perception**" means to pay attention to something

Perception is the mental function that enables the organism to absorb and process information from the inner and outer world with the help of its sensory organs

Perception is dependent on...



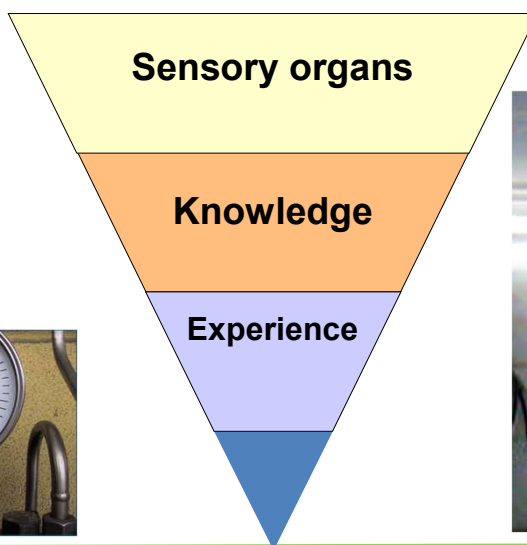
TH3 F4CT TH4T YOU C4N R34D TH15 T3XT  
 PROOV35 TH4T YOUR BR41N 1GNOR35 R34L1TY.  
 1T 1NT3RPR3T5 WH4T YOU 533 45 1T 15 U53D TO DO.  
 45 4 CON53QU3NC3 W3 H4V3 TO  
 ORG4N1Z3 ROUT1N3 WORK 1N 4 54F3 W4Y.  
 4 FORKL1FT TRUCK DR1V3R FOR 1N5T4NC3 M4Y 1GNOR3 4  
 P3D35TR14N WH3N R3V3R51NG B3C4U53 H3 R3V3R535 4  
 THOU54ND T1M35 WH3N NO ON3 15 B3H1ND HIM.

# A, B, C, D, E, F IO, II, I2, B, I4

The interpretive property of perception looks for known matches  
Assumptions made are supported by one-sided perception of confirming facts  
(tendency to confirm)

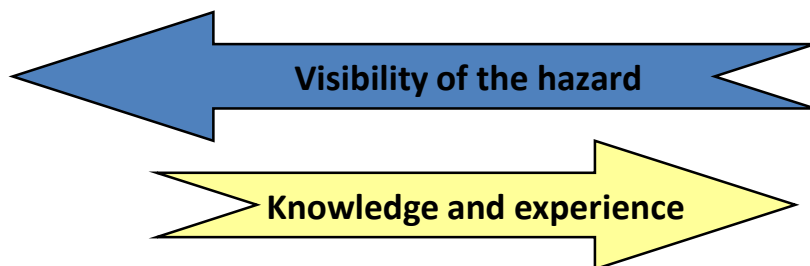
Hazard perception takes place with

- Sensory organs
- Knowledge
- Experience

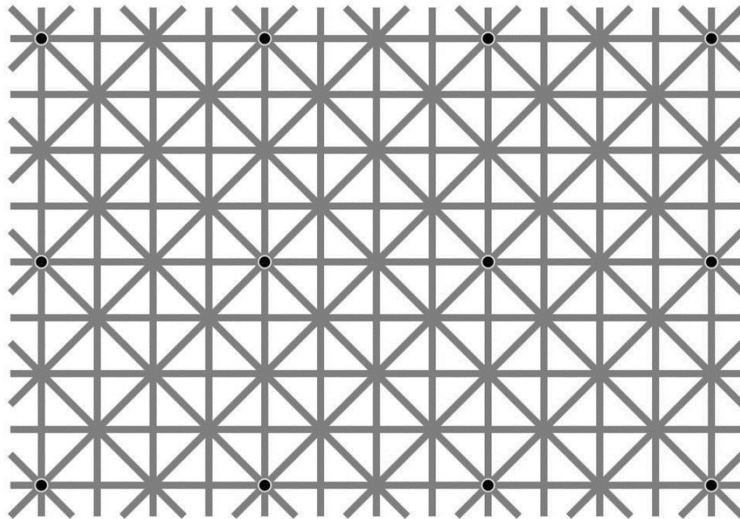


The illustration of hazards can be divided into

- Perception by mere sensation
- Perception and interpretation of special characteristics based on knowledge and experience



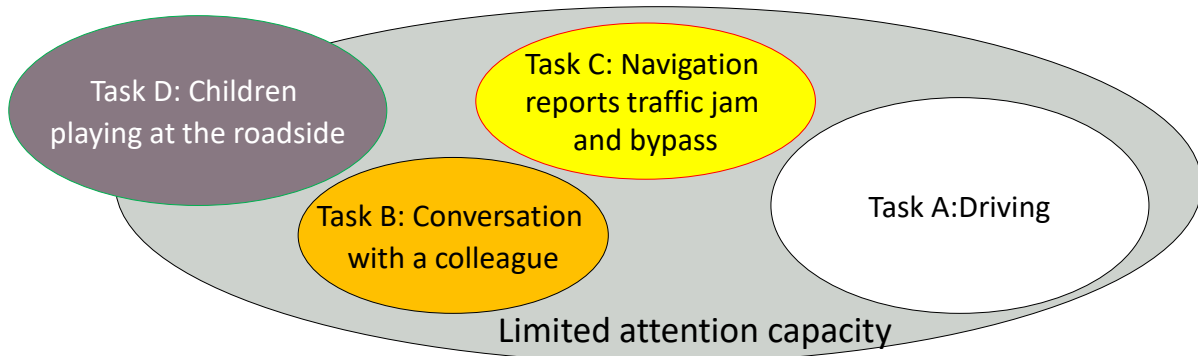
- Perception is an active, information processing procedure; thus the result of perception is basically not a one-to-one copy of reality
- Perception requires attention (recognising/becoming aware)
- Attention is also defined as the distribution of available resources. Attention has a limited capacity – it can be used flexibly, for example to perform simultaneous tasks



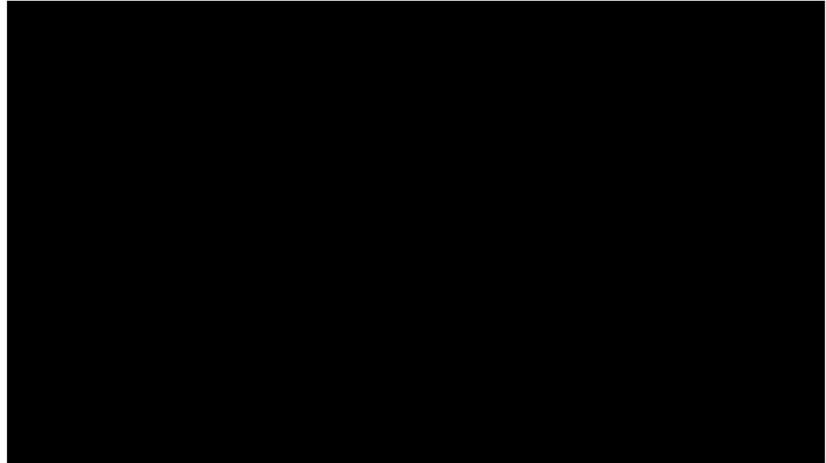
Twelve-point illusion:  
Of the 12 points, we only ever see a maximum of 4 points in a geometric structure

"Magical number seven,, (Miller) says:  
Only about 7 ( $\pm 2$ ) elements can be processed at any one time

We devote our attention to several things. This is usually no problem!  
But the brain isn't able to decide, which task should get attention resources.  
This process doesn't depend on what is the most important thing for us!



- Distraction
- Sensory overload
- Deficient knowledge
- Lack of motivation
- Stress/monotony



- **Technical measures before personal measures**
- **Introduce and implement rule/procedure**
  - Permit procedure
  - Log out and tag out (LOTO)
- **Develop safe habits/routine**
  - Strengthen safe behaviour
  - Preventing unsafe behaviour





People often act irrationally. With the method of nudging people are to be "pushed" in a gentle way to change their behaviour and to make better decisions without resorting to prohibitions, commandments or economic incentives.

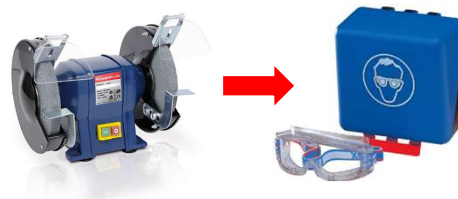
Principles of action are:

- Increase comfort
- Establish clarity
- Reward/feedback
- Group dynamics
- Arouse feelings
- Increase fun/pleasure
- Activate self-portrait
- Favourable default setting



Intuitive thinking provides a spontaneous and often wrong answer

Nudges intervene especially in decisions that are made in intuitive thinking. Therefore, the employees' behaviour can be influenced in a (safe) direction



Employees must know and understand the risks

Risk workshops/safety walks: Employees practice in groups to identify and assess hazards together

