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# Behavior Based Safety BPS 2323

## Human Barriers to Safety (Cognitive Failure)

by

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Human Cognitive Failure by Sukadarin E.H

# ACKNOWLEDGEMENT

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# Chapter Description

At the end of this chapter, student should be able to explain the fundamentals of elements in human cognitive failure and human interpersonal factors

## Expected Outcomes

Students able to explain:

- 4 types of human cognitive failures
- Interpersonal factors that may influence workers' action , thought and behavior towards occupational safety and health

References:

1. Geller, E. Scott (2001). "Working Safe, 2<sup>nd</sup> ed". Lewis Publishers.
2. Geller, E. Scoot (2005). Behavior-Based Safety and Occupational Risk Management. *Behavior Modification*. 29(3):539-561.
3. McLeod, S. A. (2015). Cognitive Psychology. Retrieved from [www.simplypsychology.org/cognitive.html](http://www.simplypsychology.org/cognitive.html) [11 Sept 2017]



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# Content

- ❑ Introduction
- ❑ Four types of human cognitive failure
- ❑ Human interpersonal factors



*.Arab poet..*

*“He is only called man (insaan) because of his forgetfulness (nasiyaan), and it is only called the heart (al-qalb) because it changes so rapidly (yataqallib).”*



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# Introduction

Unintentional

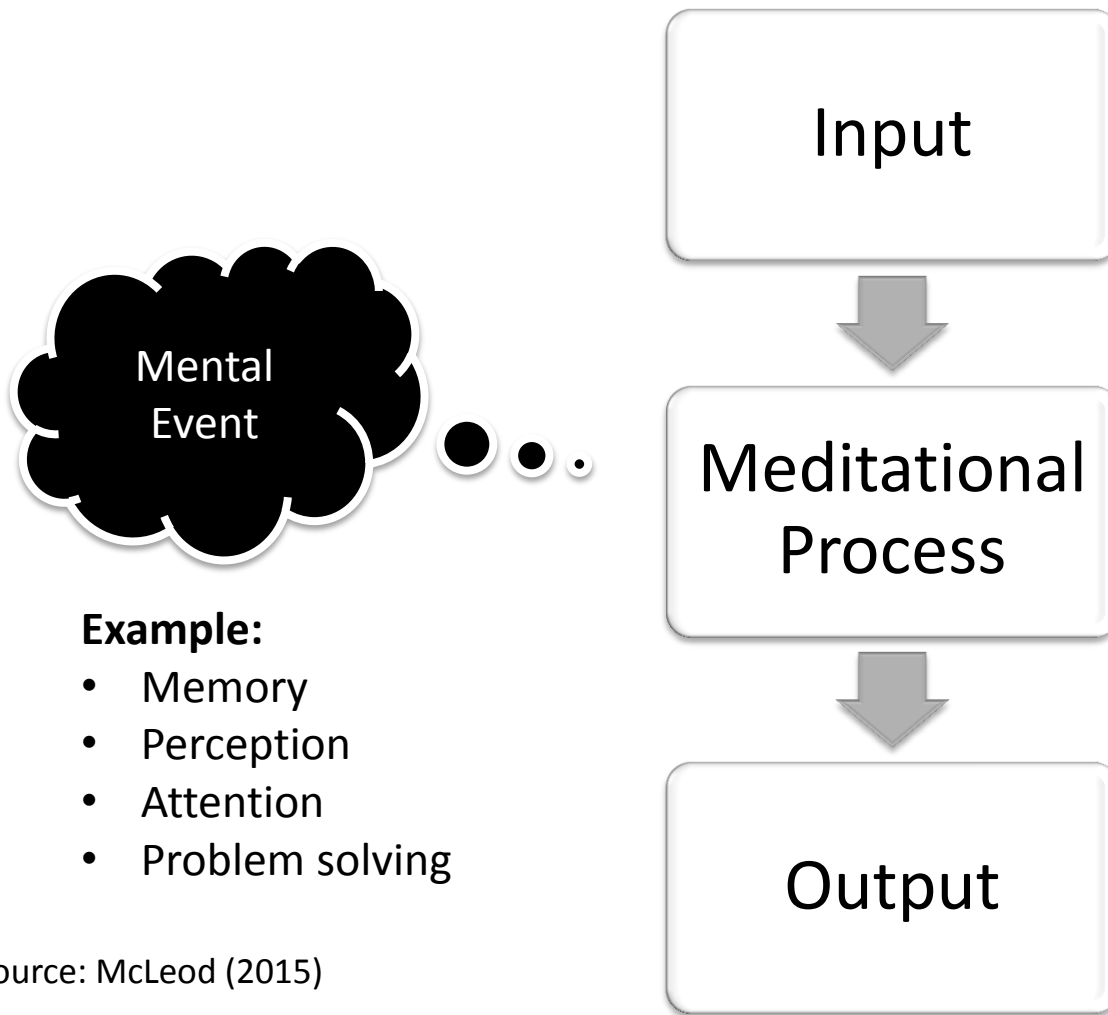
```
graph TD; A[Unintentional] --> B[The person meant well]; B --> C[The plan was good, but the execution was unintentionally flawed];
```

The person meant well

The plan was good, but the execution was unintentionally flawed



# Cognitive Model



## Example:

- Memory
- Perception
- Attention
- Problem solving

Source: McLeod (2015)



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# Cognitive Failure

## Cognitive Failure

- Capture Errors
- Description Errors
- Loss of Activation Errors
- Mode Errors



# Cognitive Failure...

## Type of Cognitive Failure

## Description

### Capture errors

Your routine captures you and take over an unfamiliar activity.

#### **Example:**

At home, your door to enter living need to be pushed. However, at workplace the door needs to be pulled.

You will pushing the door at the workplace couple of times .

Routine activity will capture the execution of new work process –lead to error and injuries





# Cognitive Failure...

Type of  
Cognitive Failure

Description

Description errors

## ***Brain cramps***

Due to the descriptions or locator of two different things are similar.

### **Example:**

Similar switches that located nearby each other but the switches control different function. Errors will happen by clicking on the wrong switch.

*Can you imagine if you want to switch on down light but you unintentionally switch on the hazardous machine.. ?*



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# Cognitive Failure...

Type of  
Cognitive Failure

Description

Loss of  
activation errors

**Forgetting.**

**Example:**

Have plan to collect book “A” in a room, suddenly after got into that room, the plan to collect book “A” is suddenly disappear in the mind.

What commonly happen; people will just get out from that room, and do something else.. However, after sometimes they will remember what actually they wanted to do.



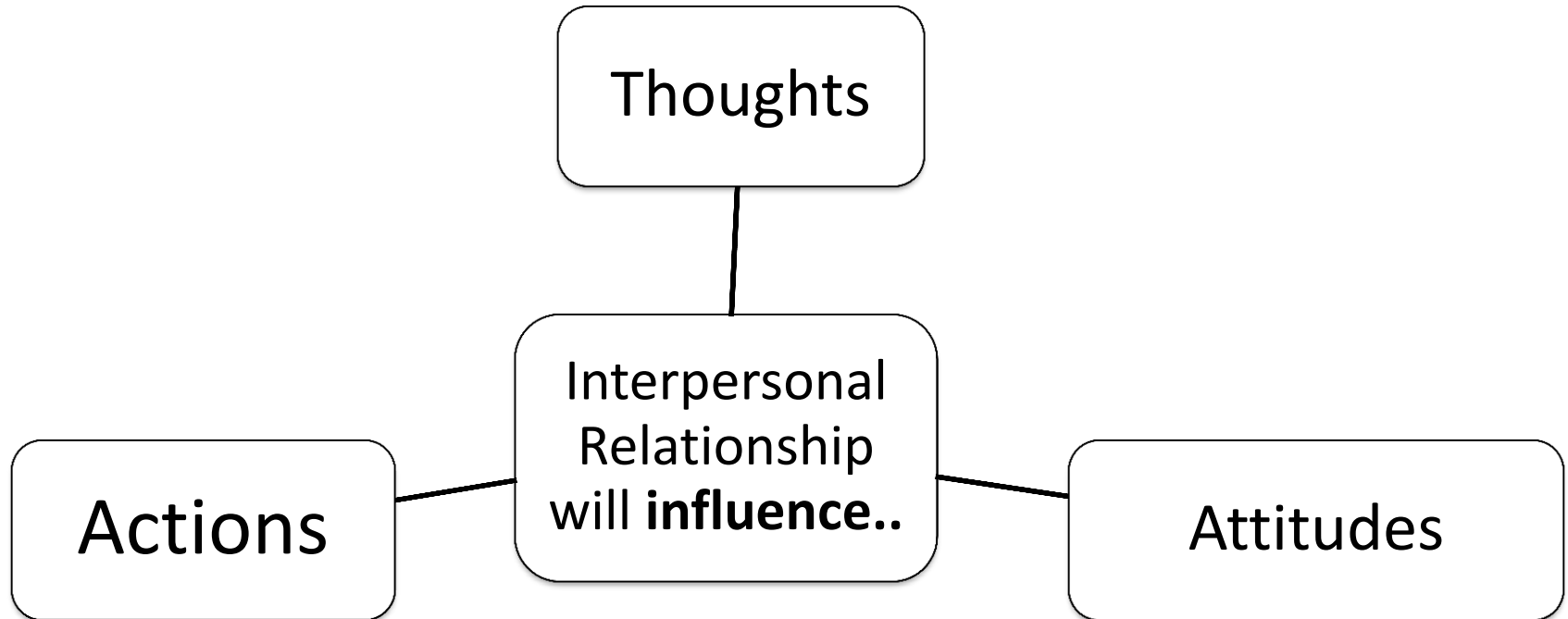
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# Cognitive Failure...

Type of Cognitive Failure	Description
<b>Mode errors</b>	<p>One functions such as button control multiple mode of operation.</p> <p>Tend to have problem by clicking wrong button for wrong of operation.</p>



# Interpersonal Factors



Let's think the different between...

Working to **avoid** failure or disapproval

Working to **achieve** success or approval

*These differences of motivation will cause different behavior.*

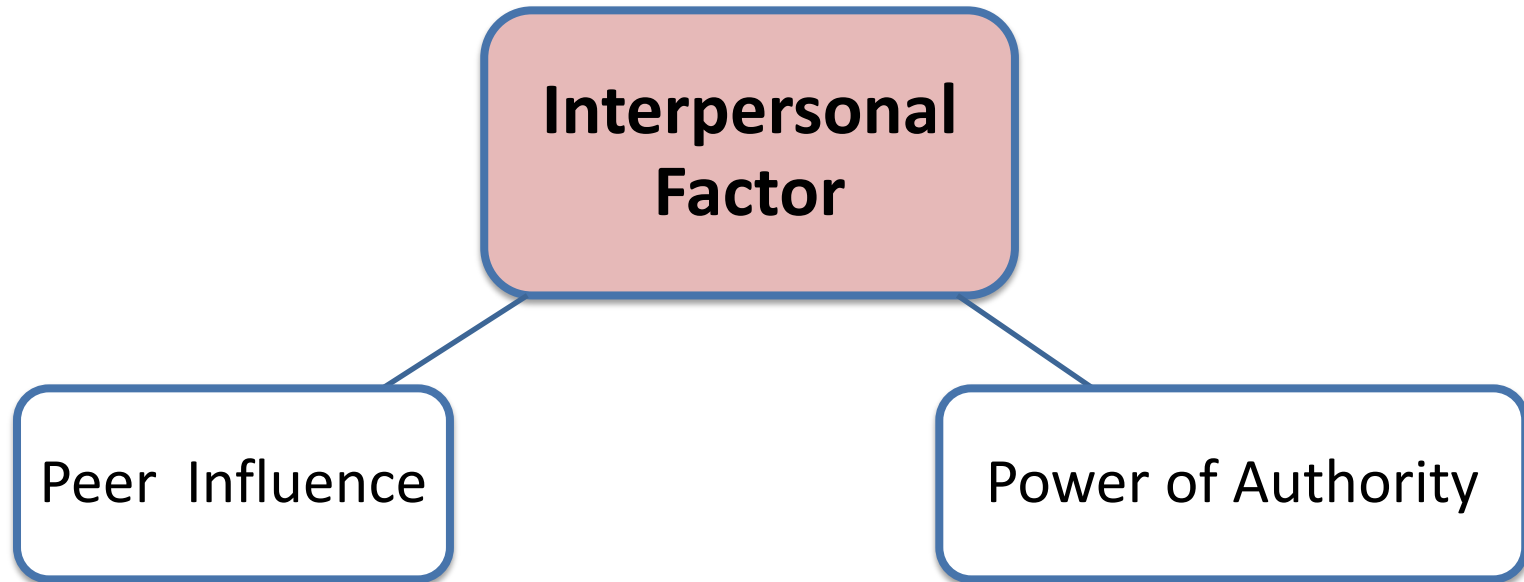
*Let's discuss...*



# People Tend to Impress Others

- Do what other do
- Do what other can't
- Follow superior's orders blindly

# Interpersonal Factors



# Peer Influence

Interpersonal factor

Peer Influence

**Power of conformity**

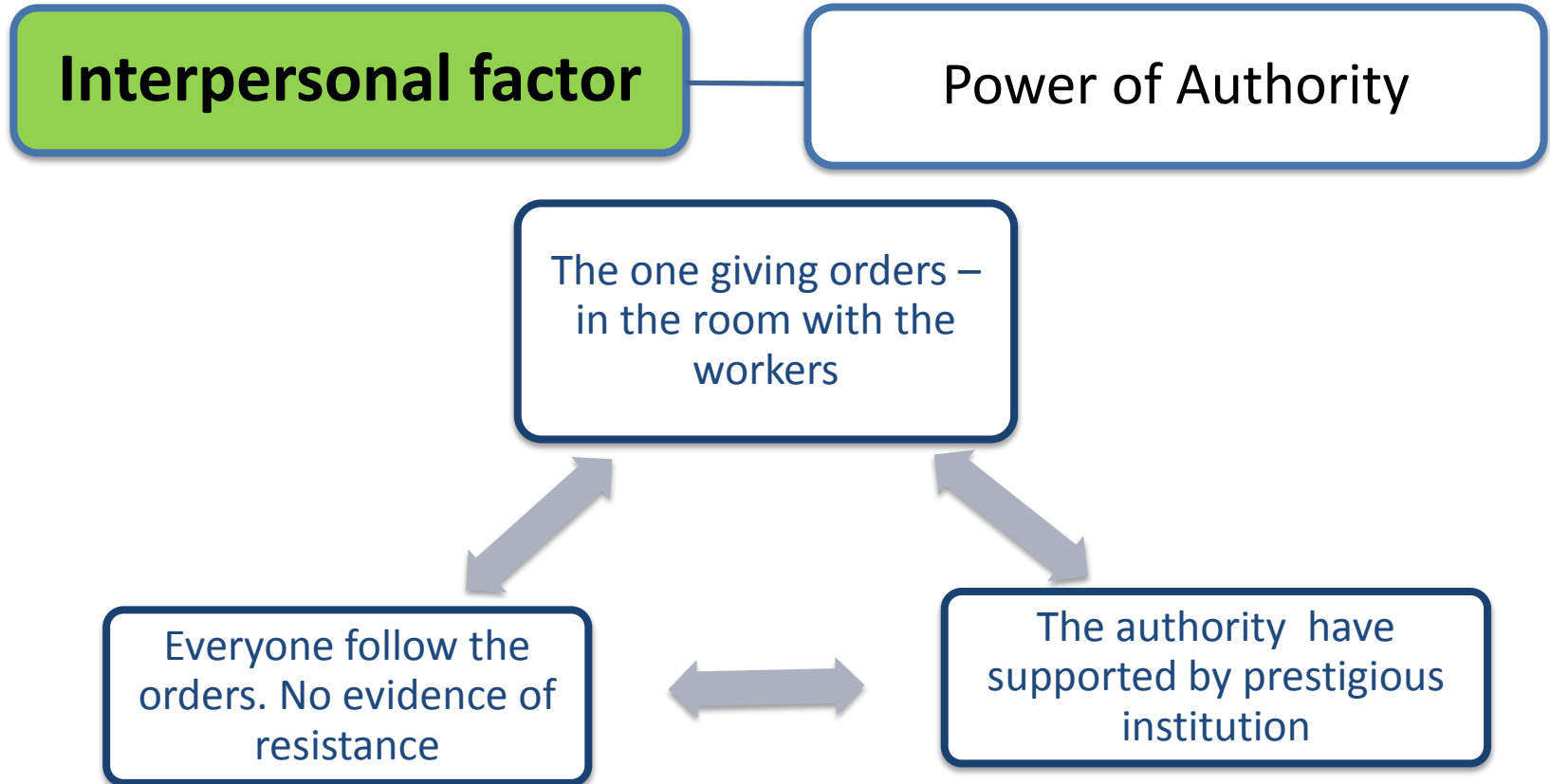
*influence*

**At – risk behavior**





# Power of Authority



# Conclusion

Human makes failure due to many reasons.

Failure in behavior is basically coming from human “mental event”

Fully understand about human interpersonal factors, may help to manipulate human “mental event”.



# Thank You