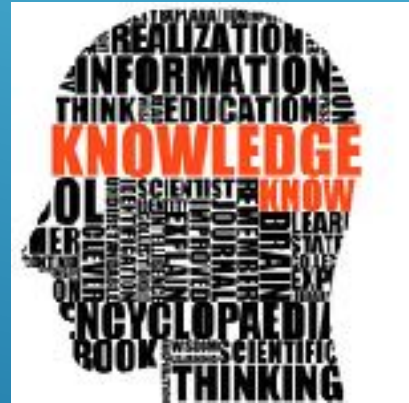


LIMITS OF VOCATIONAL TRAINING DEMONSTRATED BY MODELING OF PERCEPTION

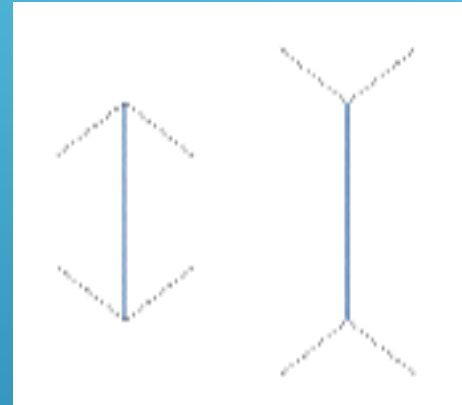
Hanspeter Zehnder
CH-8536 Hüttwilen
hp.zehnder@me.com



LEARNING



KNOW HOW



PERCEPTION

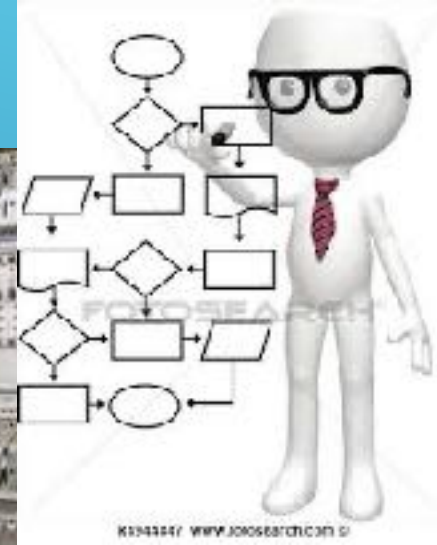
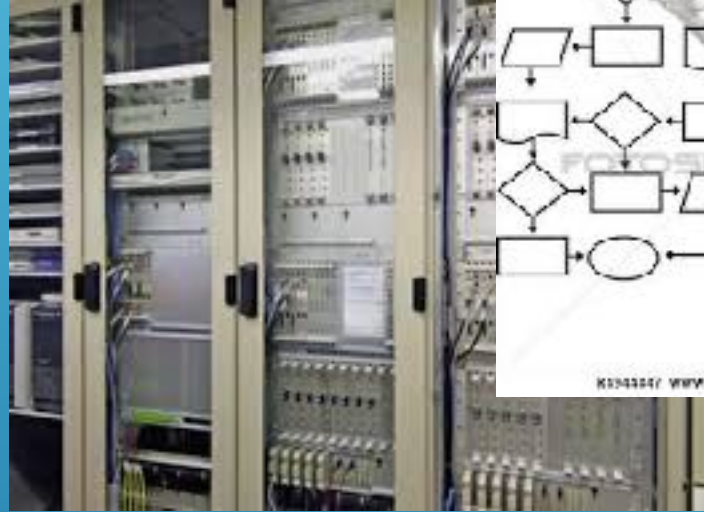


ACTION
(RIGHT OR WRONG)

correlation

A TRUE STORY

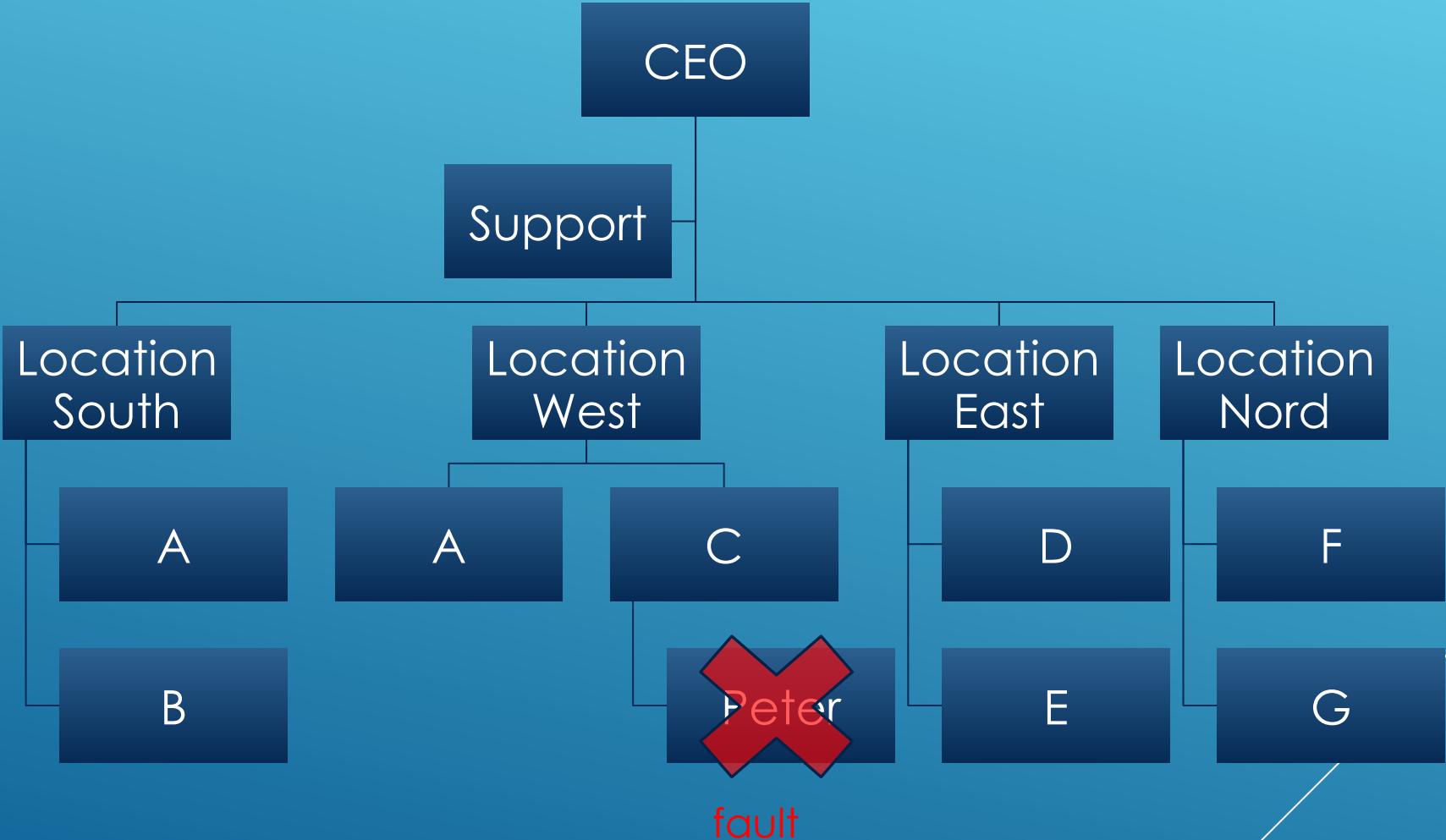
TRAINING IN SERBIA



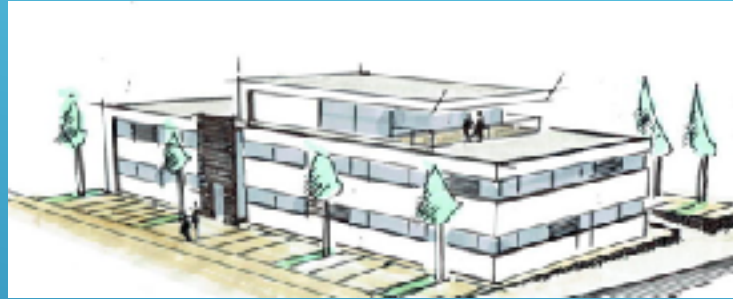
train control system

CASE STUDY

THE ORGANIZATION AS A LINEAR SYSTEM

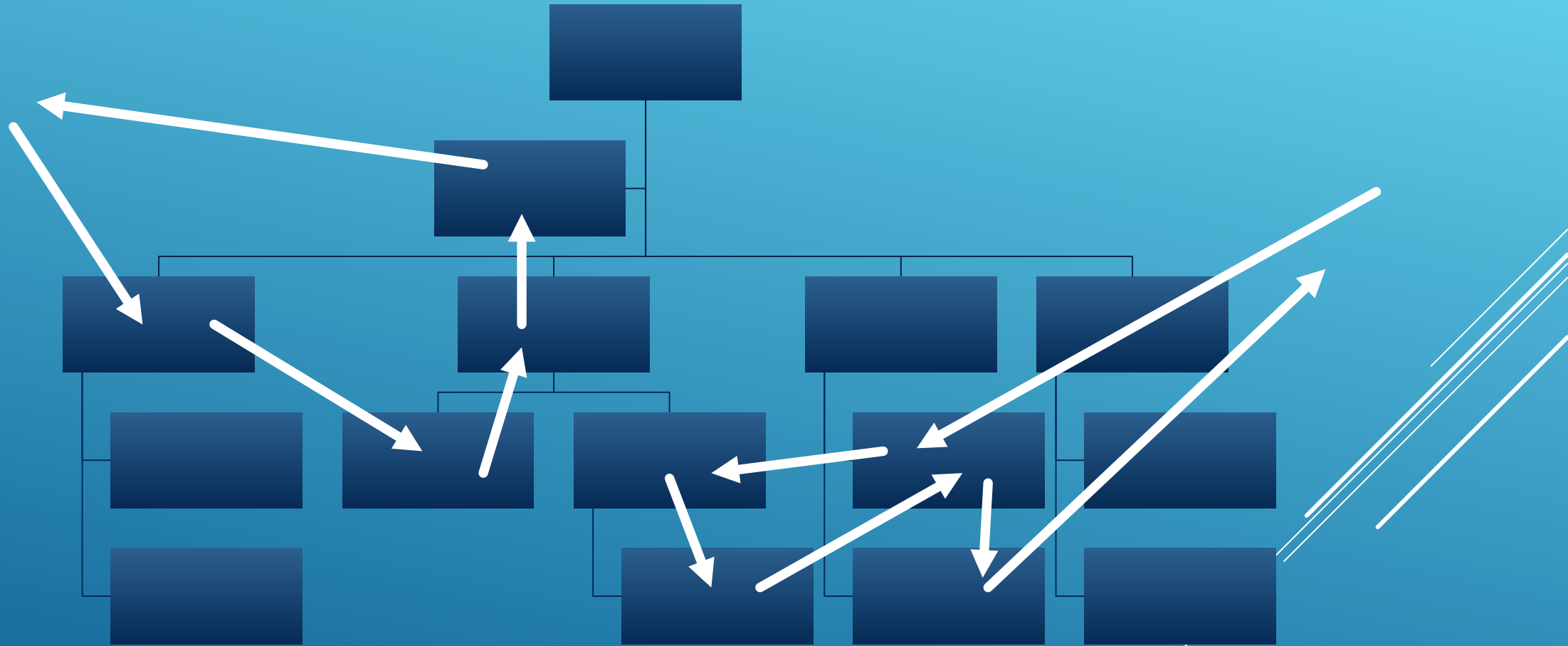


CASE STUDY

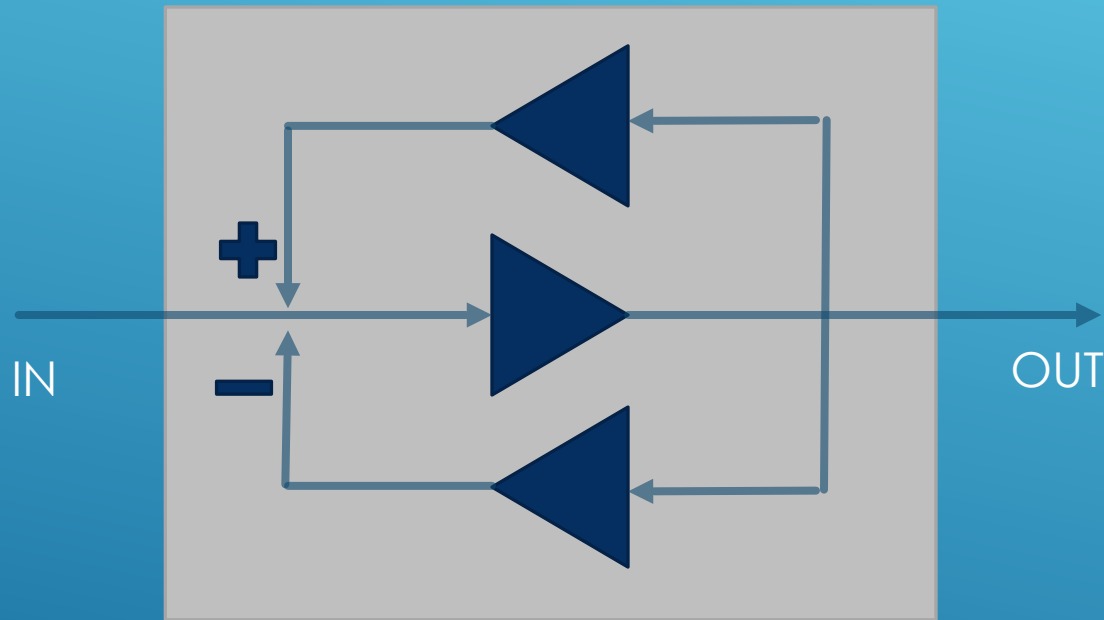


TECHNICAL VIEW

THE ORGANIZATION AS A NON LINEAR SYSTEM



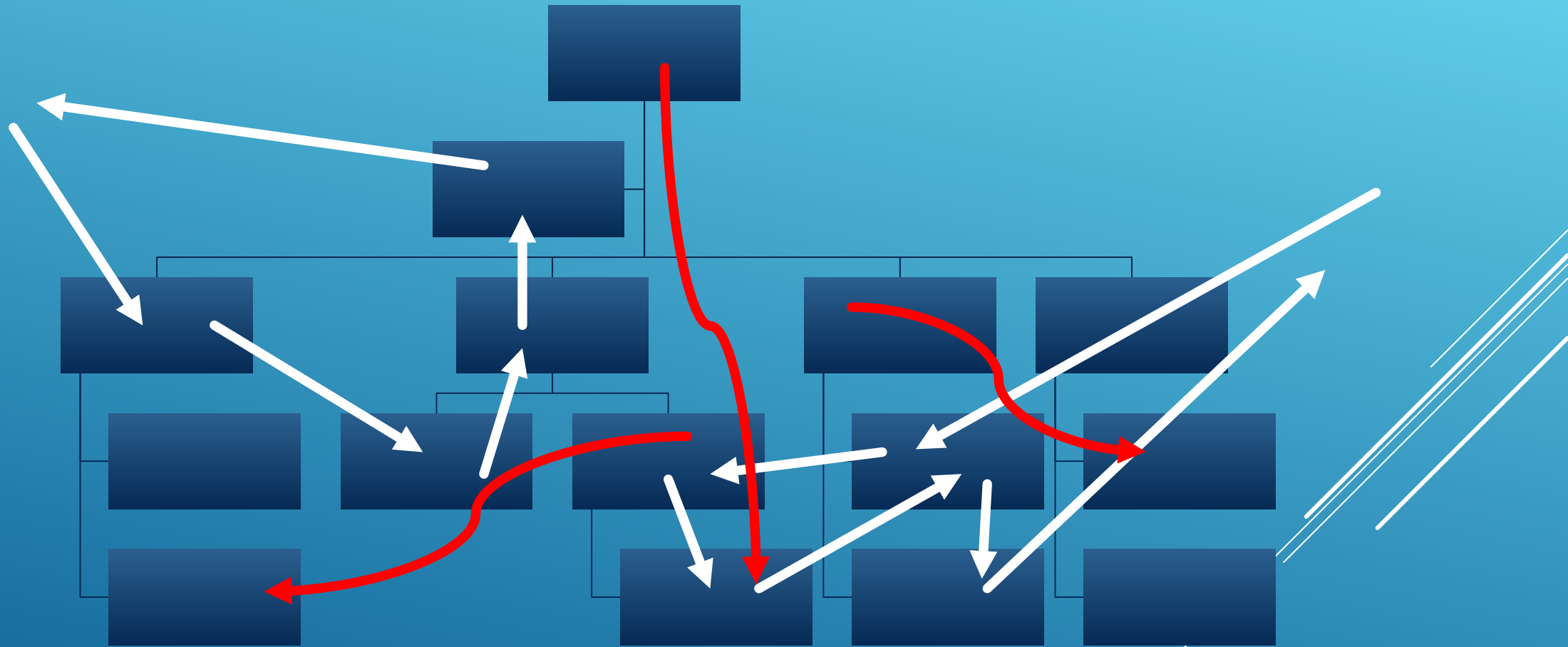
ONLY TWO LOOPS TO CREATE A CHAOTIC SYSTEM



example: double pendulum

A LIVING SYSTEM

THE ORGANIZATION AS A DYNAMIC NON LINEAR SYSTEM



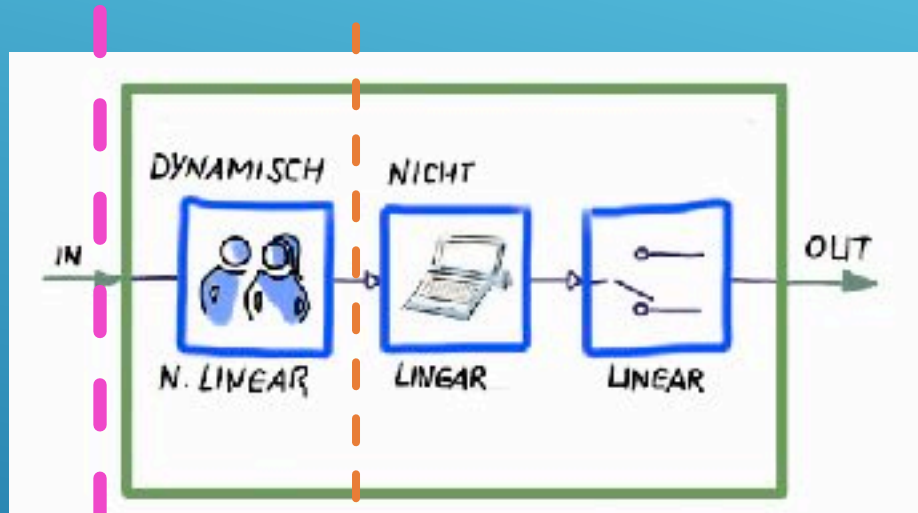
THE SYSTEMIC APPROACH

PATTERN RECOGNITION



- Typical behavior (human, team or organization)
- change management
 - optical illusions, perceptual illusion
 - Kinektose (motion sickness / Landkrankheit)

FAULT RECOGNITION SIMULATION APPROACH



technical filter

human
error filter

Black list filter

Labelling of illegal
inputs

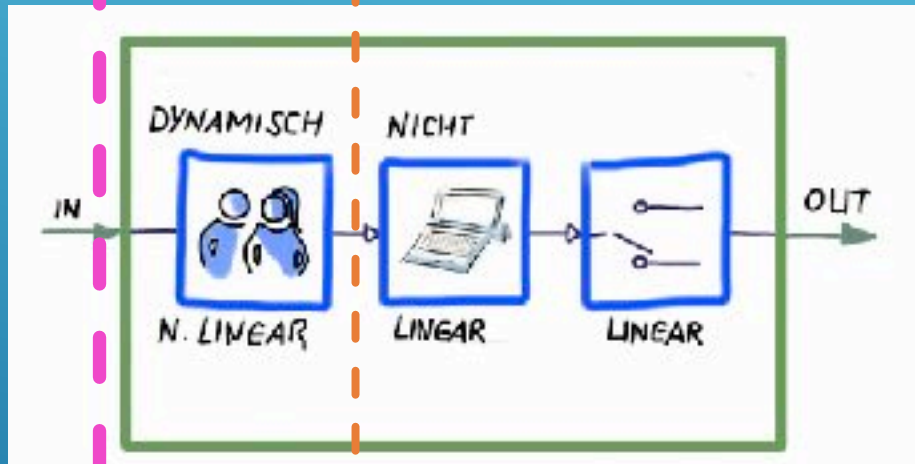
filtering of
labelled inputs

White list filter

Labelling of
permitted inputs

non filtering
of labelled inputs

FAULT RECOGNITION SIMULATION APPROACH



technical filter

PATTERN RECOGNITION & MODELING

Pattern recognition

pattern A
pattern B
pattern C
pattern D
....

cookbook

partial access

Modeling

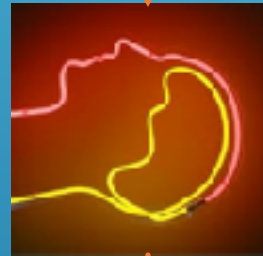
Simulation of
typical
behavior

Potential:

general
understanding

AFTERSIGHT PHENOMENON (NACHBILDPHÄNOMEN) (OPTICAL ILLUSION)

Input
(light)



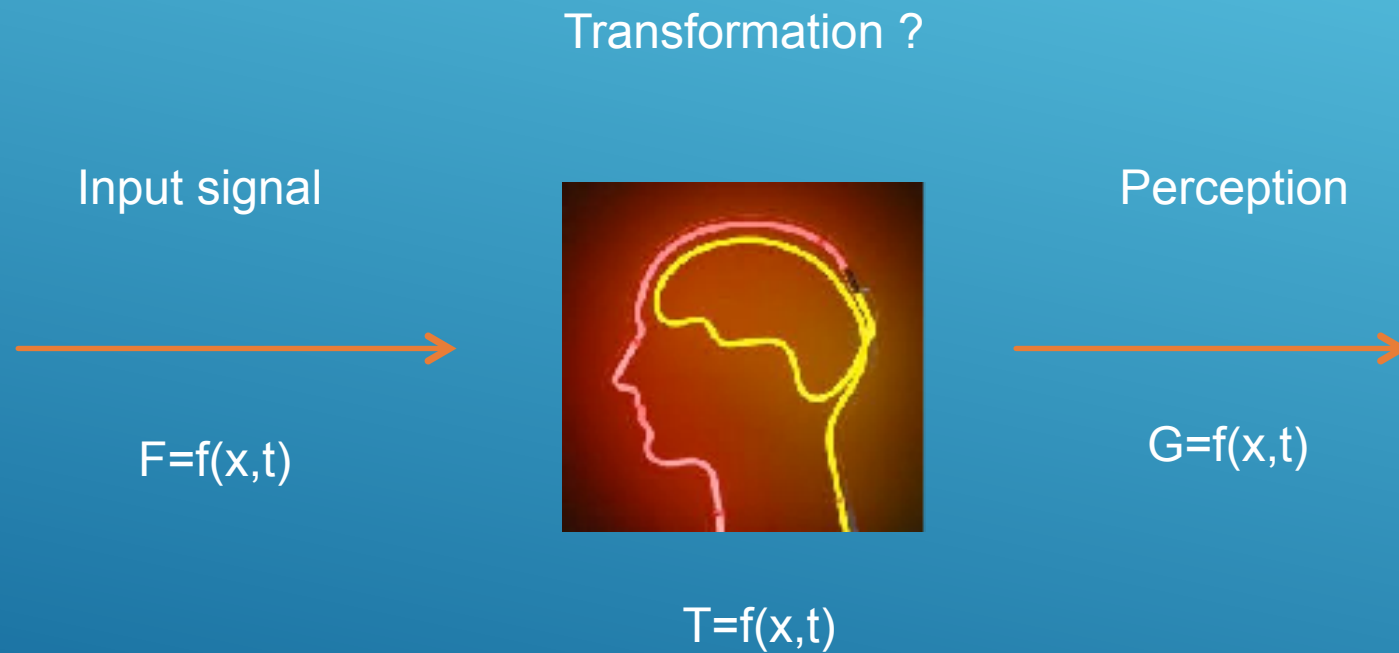
Fault:
Deviation of expectation

Output
(perception)



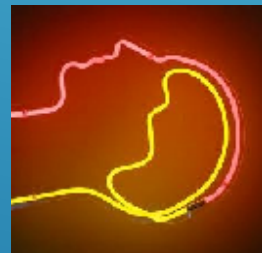
time

APPROACH TO UNDERSTANDING



APPROACH TO UNDERSTANDING

Input



transfer function

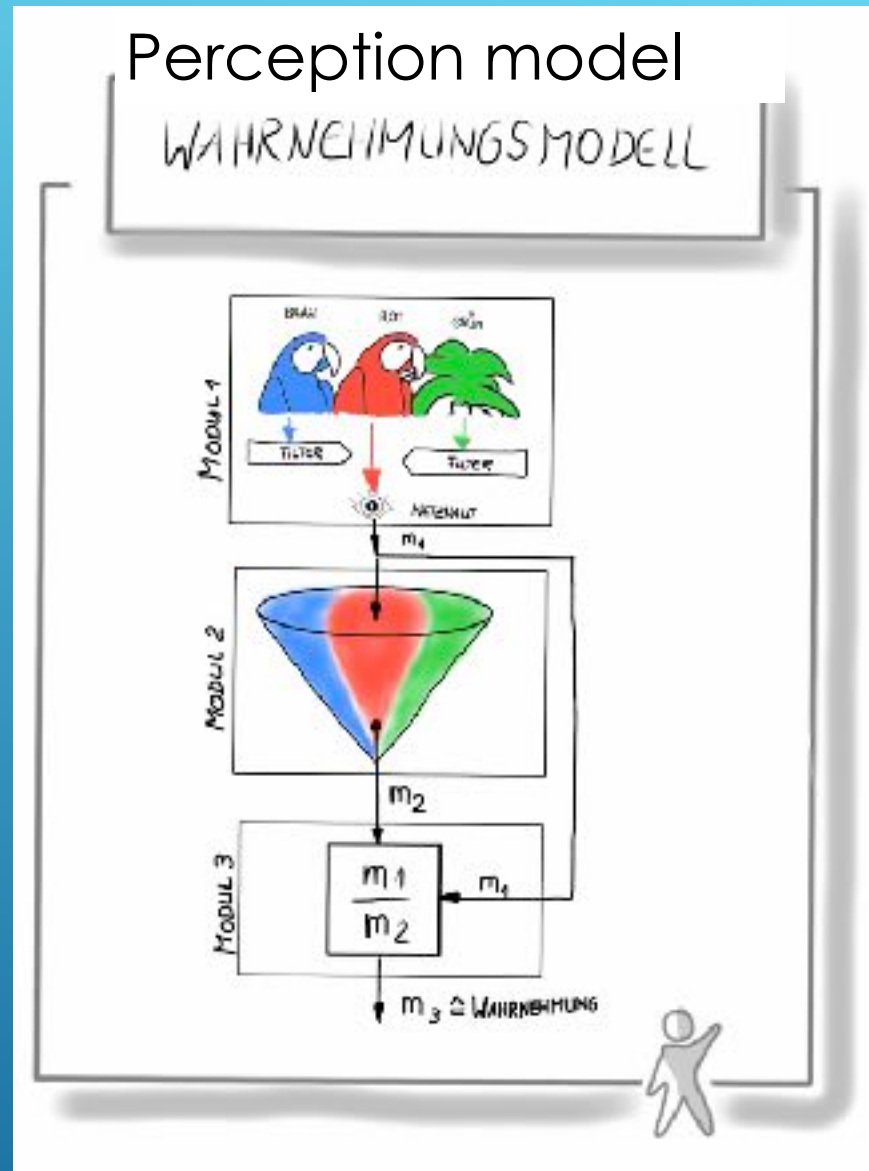
$$T \approx f(x) \cdot e^{ax^2} / \frac{1}{\sqrt{2}} \int_{-\infty}^{\infty} f(t) e^{-ixt} dt$$

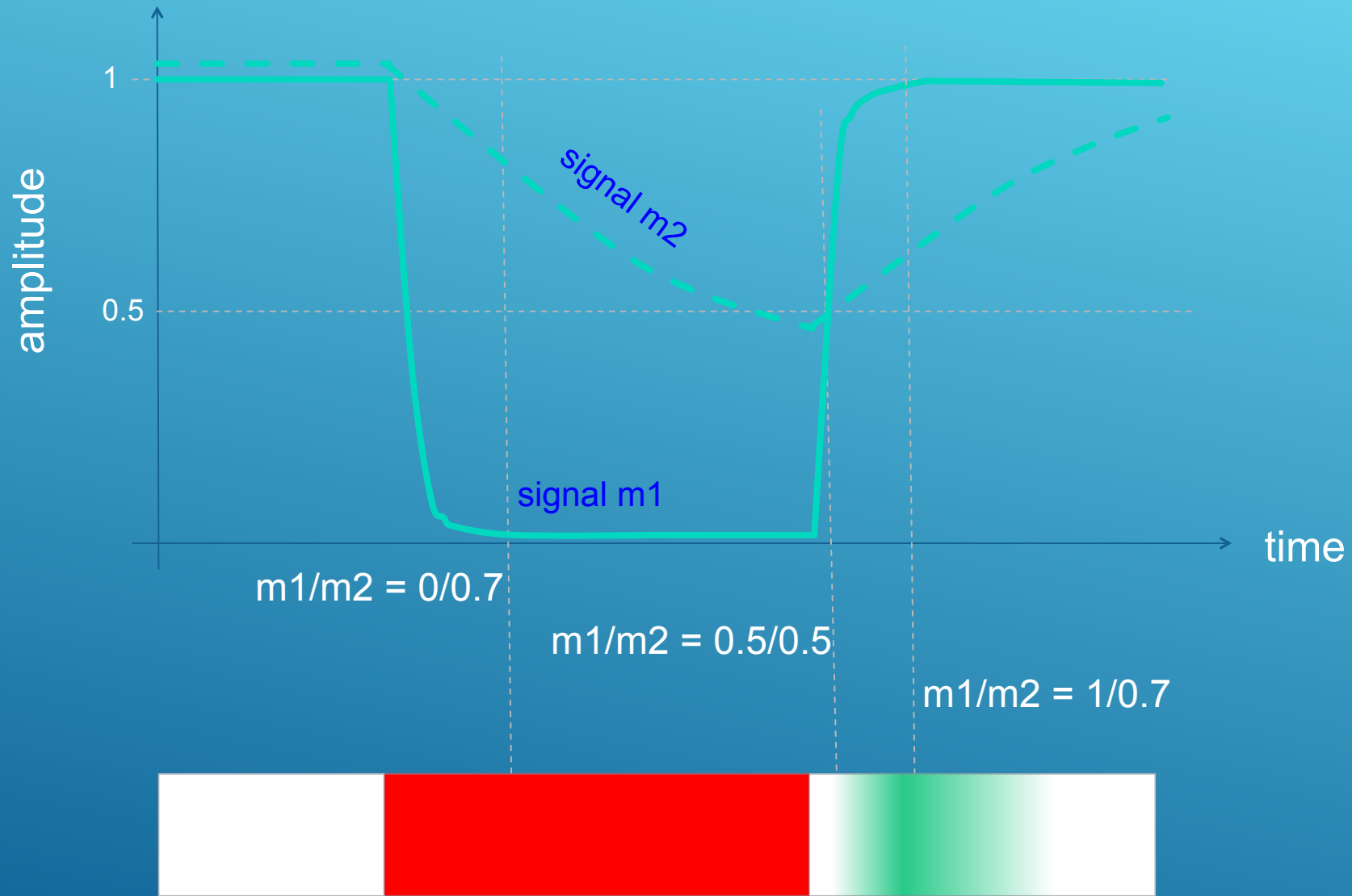
Output



Analysing the math function

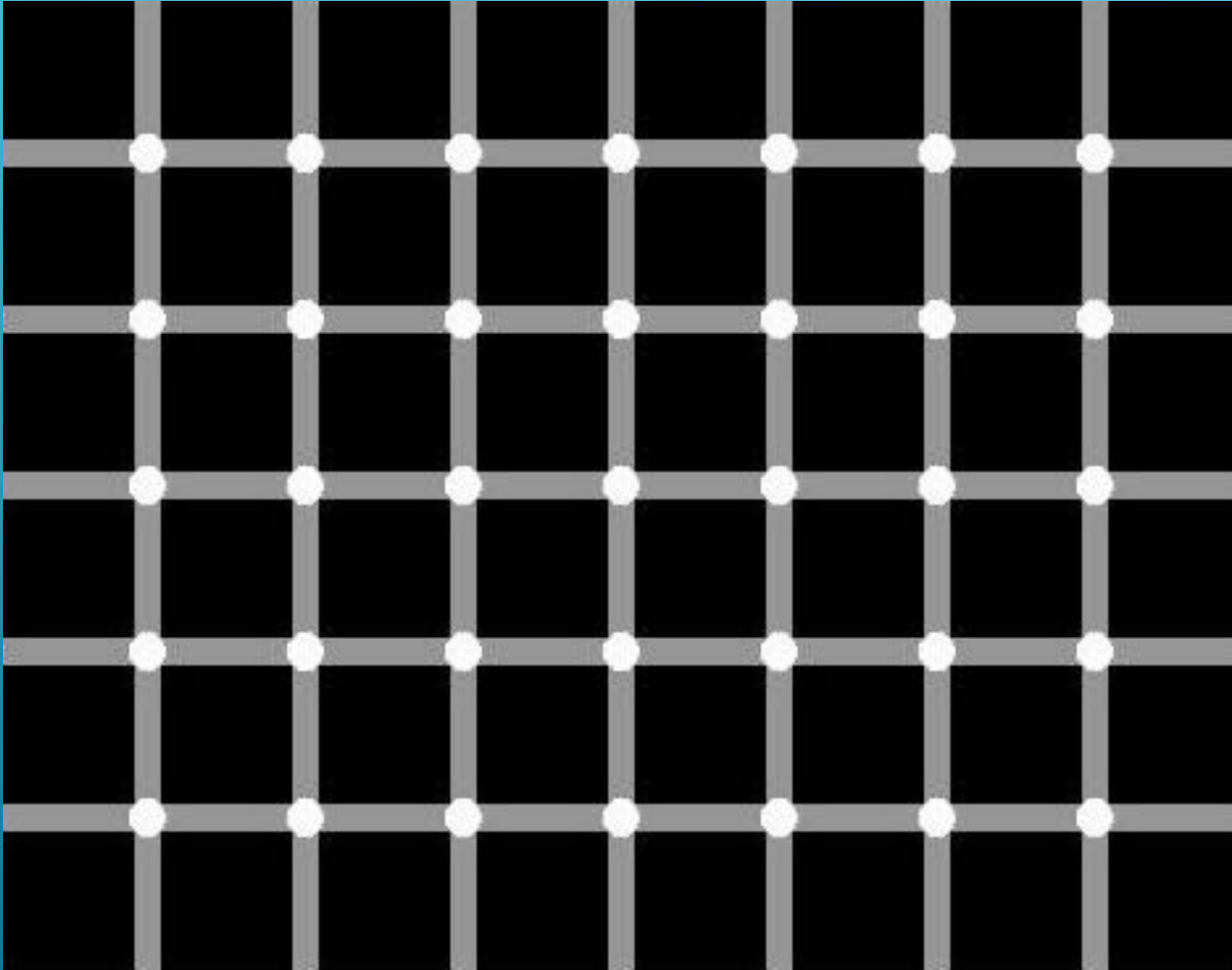
$$T=f(x,t)$$

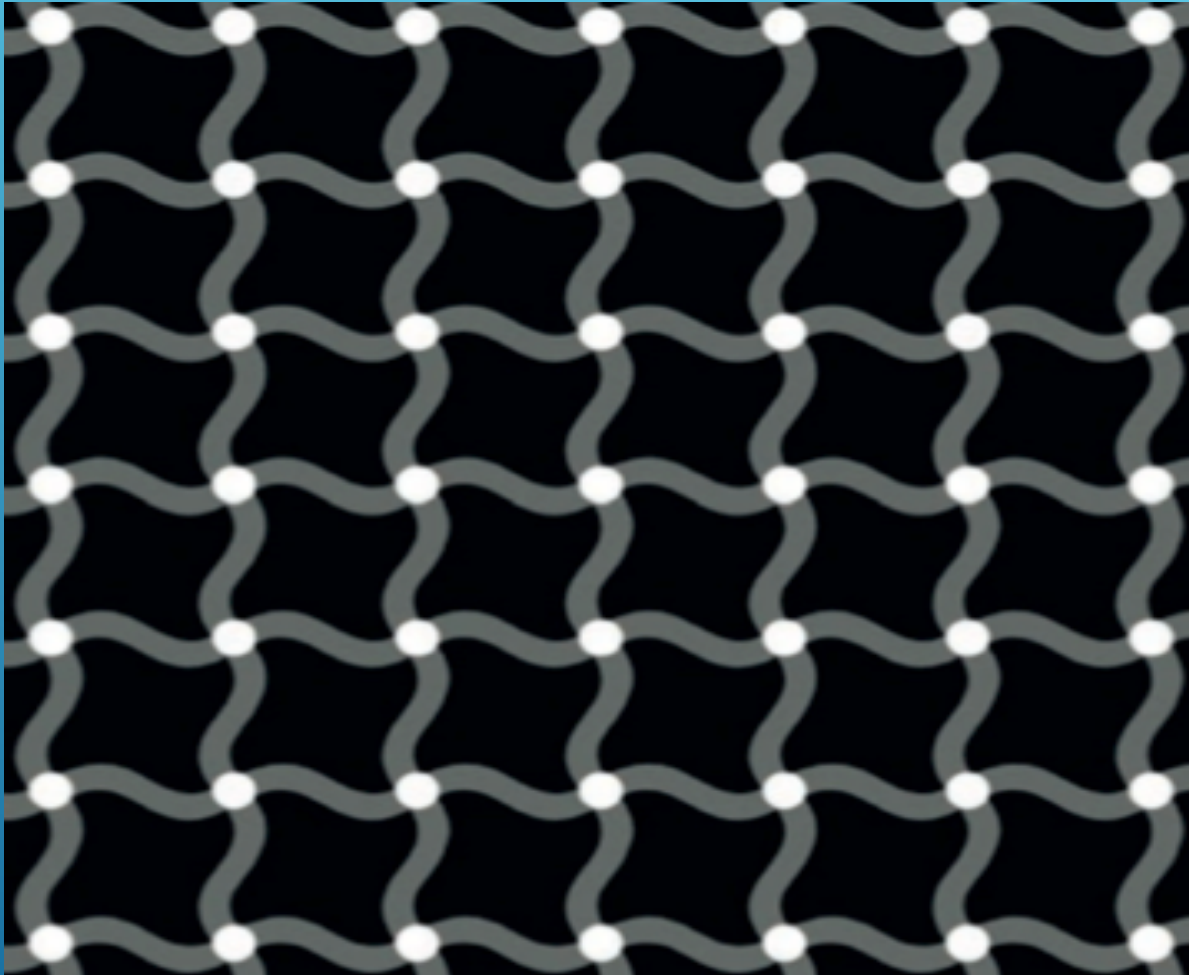






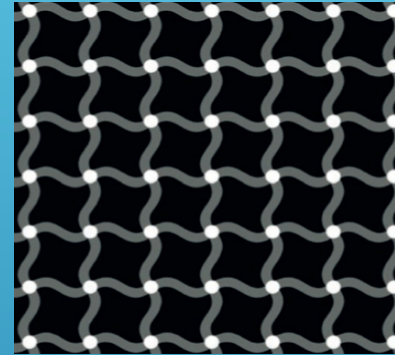






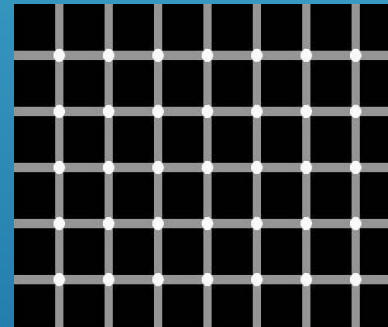
General view (Manager):

limited resolution
no visible amplitude distortion
out of focused range

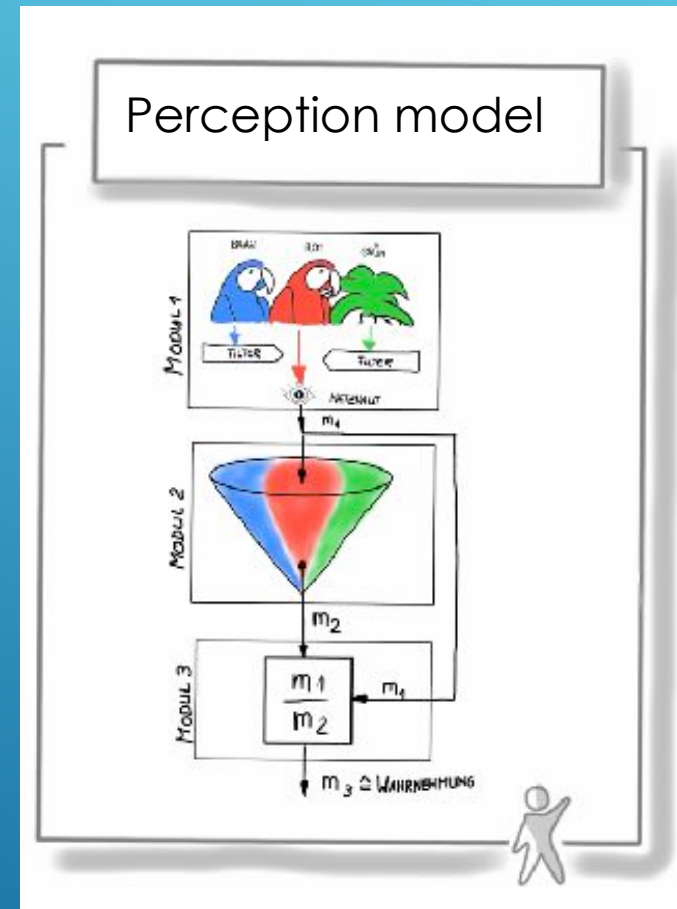


Focused view (Expert):

high resolution but amplitude
distortion out of focused range

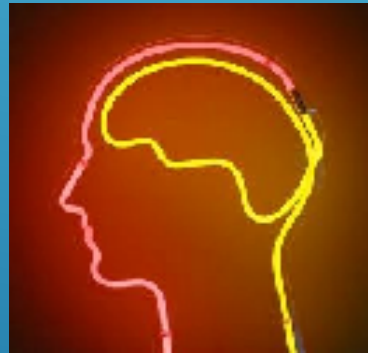


ANIMAL EXPERIMENT (BLIND CAT)



Input:
image

$$F=f(x,t)$$



perception:
saturated output
signal

$T=f(x,t)$
Baby:
time integral ≈ 0

Perception without reminder

SEHEN OHNE ERINNERUNG

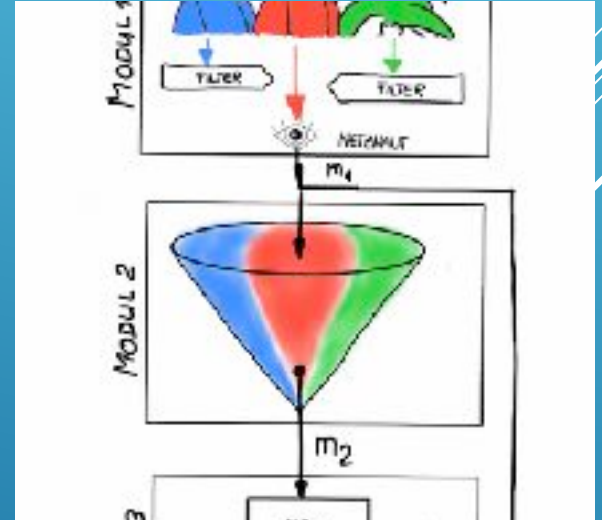
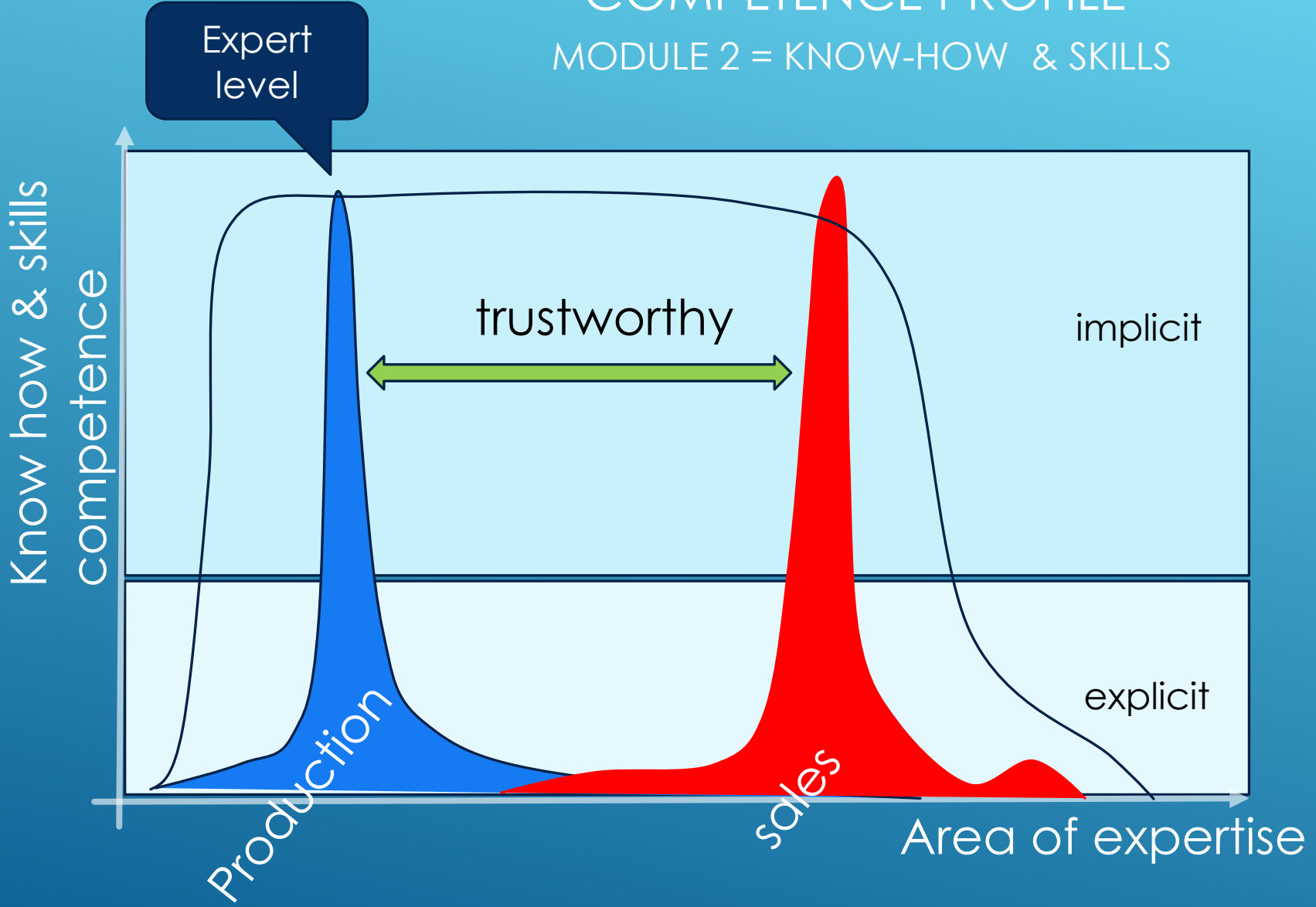


$$G=f(x,t)$$

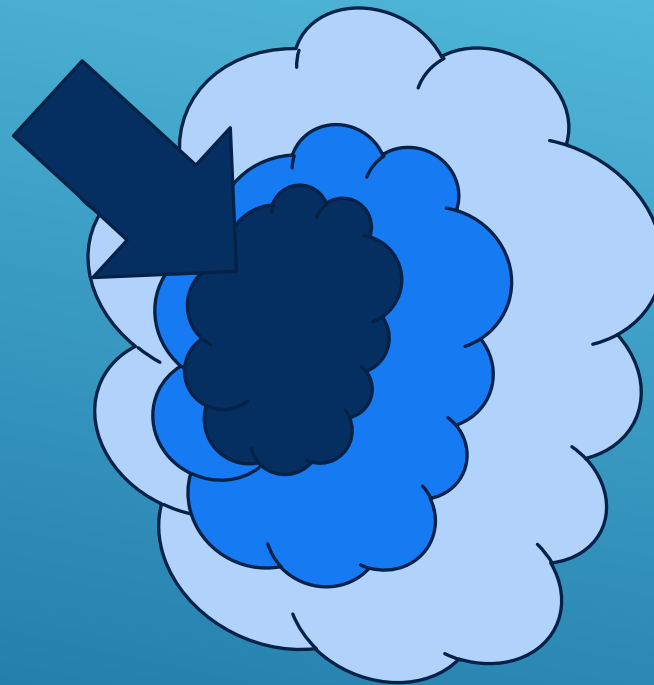


COMPETENCE PROFILE

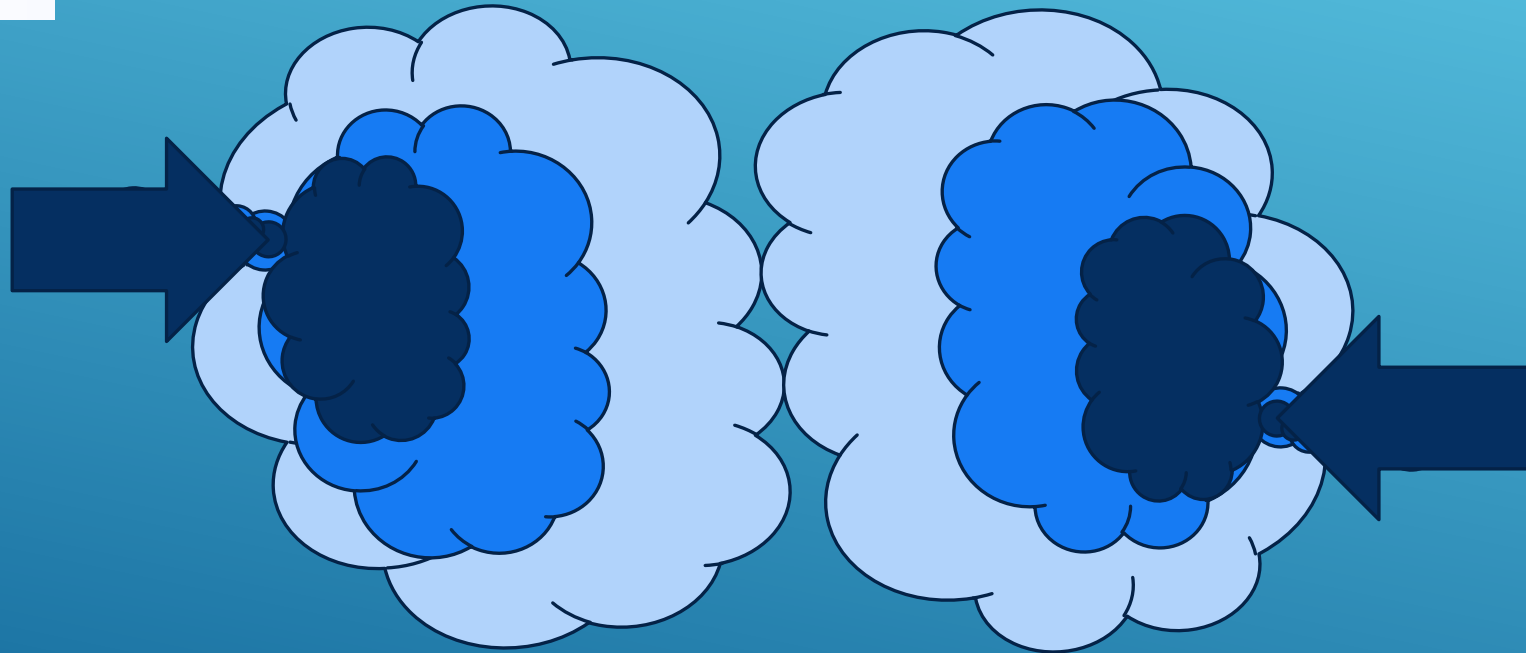
MODULE 2 = KNOW-HOW & SKILLS



ANT TRAIL

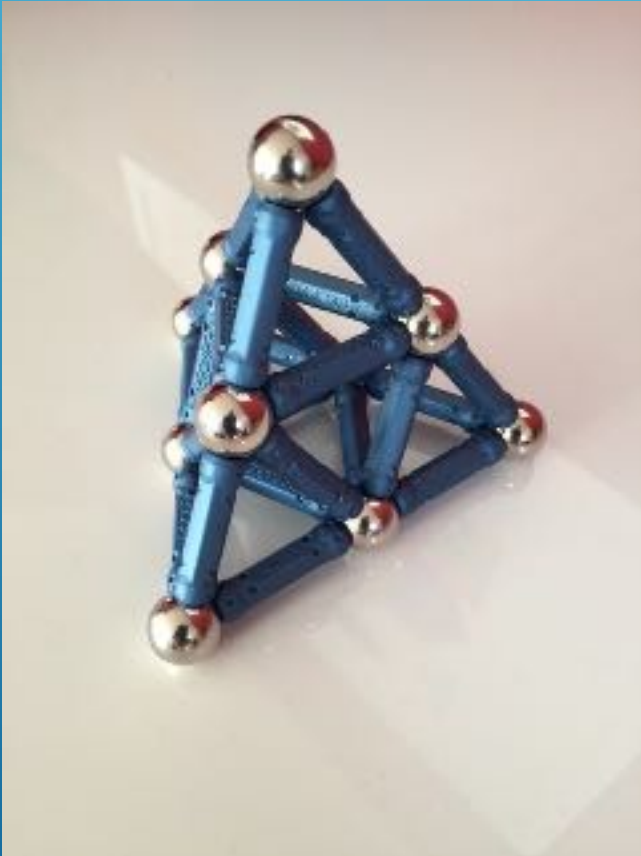


ANT TRAIL



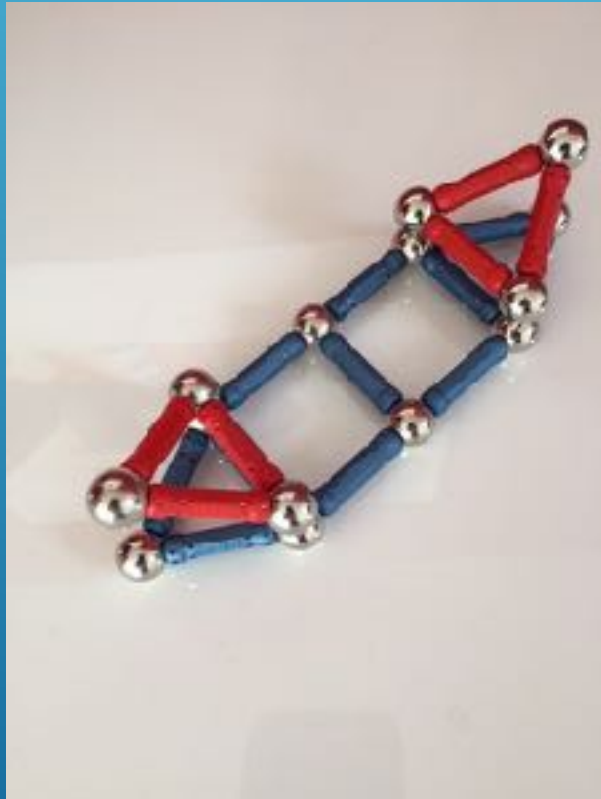
BENCH TEST WITH STUDENTS

GAME BASED LEARNING



	Team B	Team C	Team D
1. Run (8 min)	1.5	2	1
Learning session			
2. Run (8 min)	9	6.5	7
3. Run (8 min)	12	10.5	13

BENCH TEST WITH STUDENTS GAME BASED LEARNING



	Team B	Team C	Team D
1. Run (8 min)	1.5	2	1
Learning session			
2. Run (8 min)	9	6.5	7
3. Run (8 min)	12	10.5	13
New element			
4. Run (8 min)	1.5	1	2

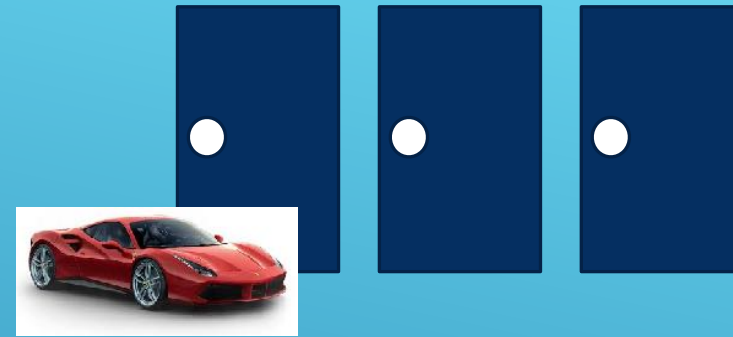
Conclusion: we use equal methods as ants

MENTAL BLACK OUT

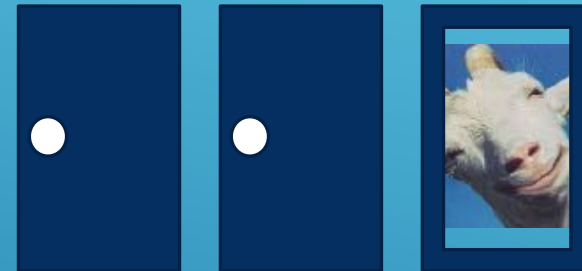
(IMAGINATION WITHOUT EXPERIENCE (EMPTY MEMORY))



1. Choose a door: probability 33%

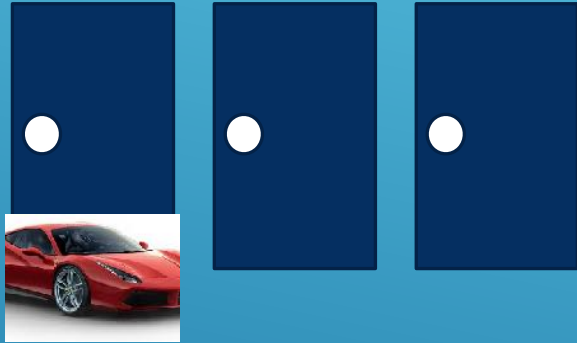


2. Show master opens a door

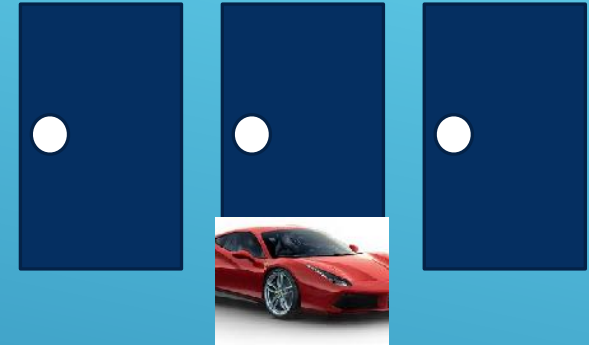


3. Question: Do you want to change your choice?
a) change is not beneficial
b) change is beneficial

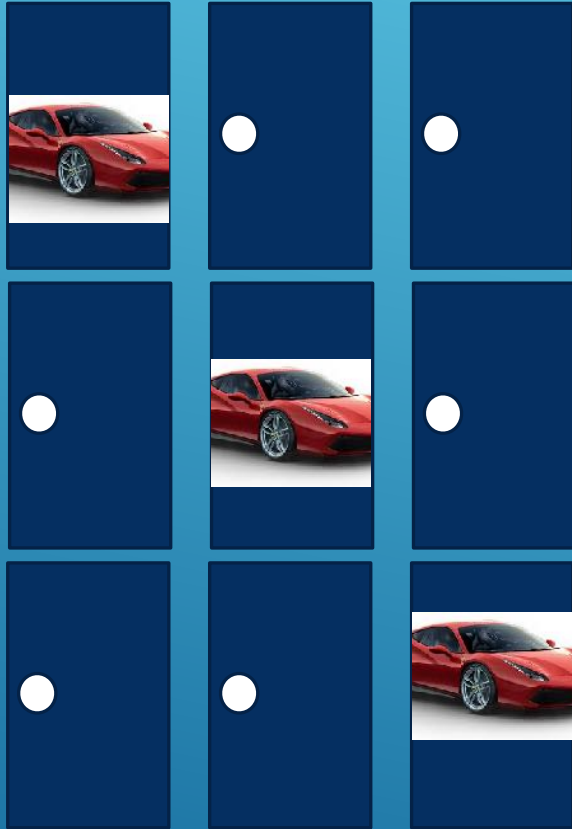
Usual feedback



no benefit



Change is beneficial



No change	change
winner	loser
loser	winner
loser	winner
Chance: 33%	Chance: 66%