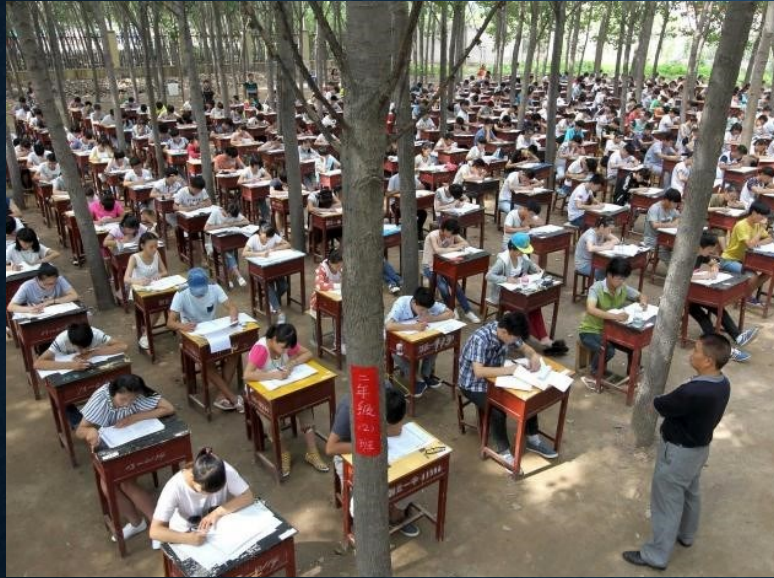


LEARNING IN FIRE SAFETY



Pavel Danihelka

Skilled to be a fire expert, Ostrava, 8.9.2022

FIRST INSIGHT: EVERYTHING IS CLEAR

- Fire safety is taught for many decades
- We are used to do it, we did it thousand times
- It is natural for us
- We understand it well
- We know, what we are doing, are well-trained and exerting it maybe all the life
- NOTHING CAN GO WRONG, RIGHT?



THINK AGAIN !



„LEARNING IN FIRE SAFETY“:

**DO WE REALLY UNDERSTAND IT WELL?
LET US START WITH TERMINOLOGY...**

LEARNING

- Transfer of information?
- Transfer of knowledge?
- Transfer of skill?
- Capacity building? What capacity? – firefighting? Prevention? Science? Regulation?
- Creativity in fire safety?

FIRE

- What is it „fire“? Is it clear? Example: is catalytic oxidation at 250°C fire?

SAFETY

- This is the most interesting and then I will shortly focus to the phenomena of safety, science and education

LOOKING AT SAFETY – CAN WE SEE CLEAR PICTURE?



AND I LOVE SCIENCE, INDEED. YOU TOO?

What I see when looking at safety and love?

Many similarities



We are scientists – what about a short insight to „safety science“ ?

WHAT ARE SIMILARITIES OF SAFETY AND LOVE?



LOVE AND SAFETY ARE HIGH IN THE VALUE SCALE OF HUMAN BEINGS



SIMILARITY OF

LOVE



SAFETY

- Guided by emotions
- Feeling – it is clear to individual, what it means, but not collectively
- Very difficult to speak exactly about
- High uncertainty
- „soft science“
- Cannot be the subject of direct measurement
- Complex, complicated, difficult

- Emotions are important part of it
- Feeling – it is clear to individual, what it means, but not collectively
- Not easy to speak exactly about
- High uncertainty
- Large part of it is „soft science“
- Cannot be the subject of direct measurement
- Complex, complicated, difficult

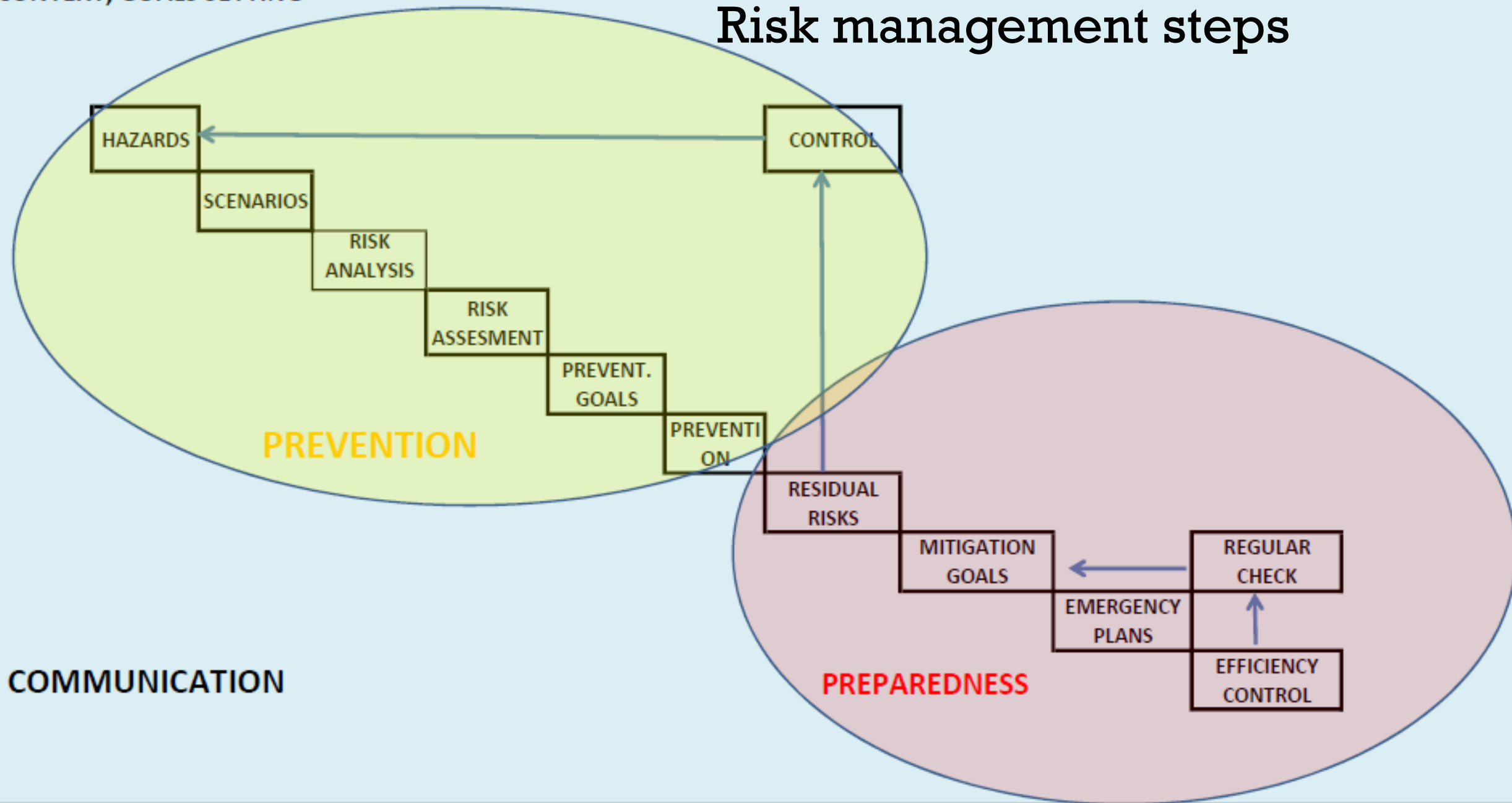
WEL-KNOWN CONCLUSION:

**SAFETY, EXCEPT OF THE PSYCHOLOGICAL
PART OF IT, IS NOT SCIENTIFIC TERM
BECAUSE IT IS THE IDEAL (PLATONIC)
CONCEPT, NEGATIVELY DEFINED**

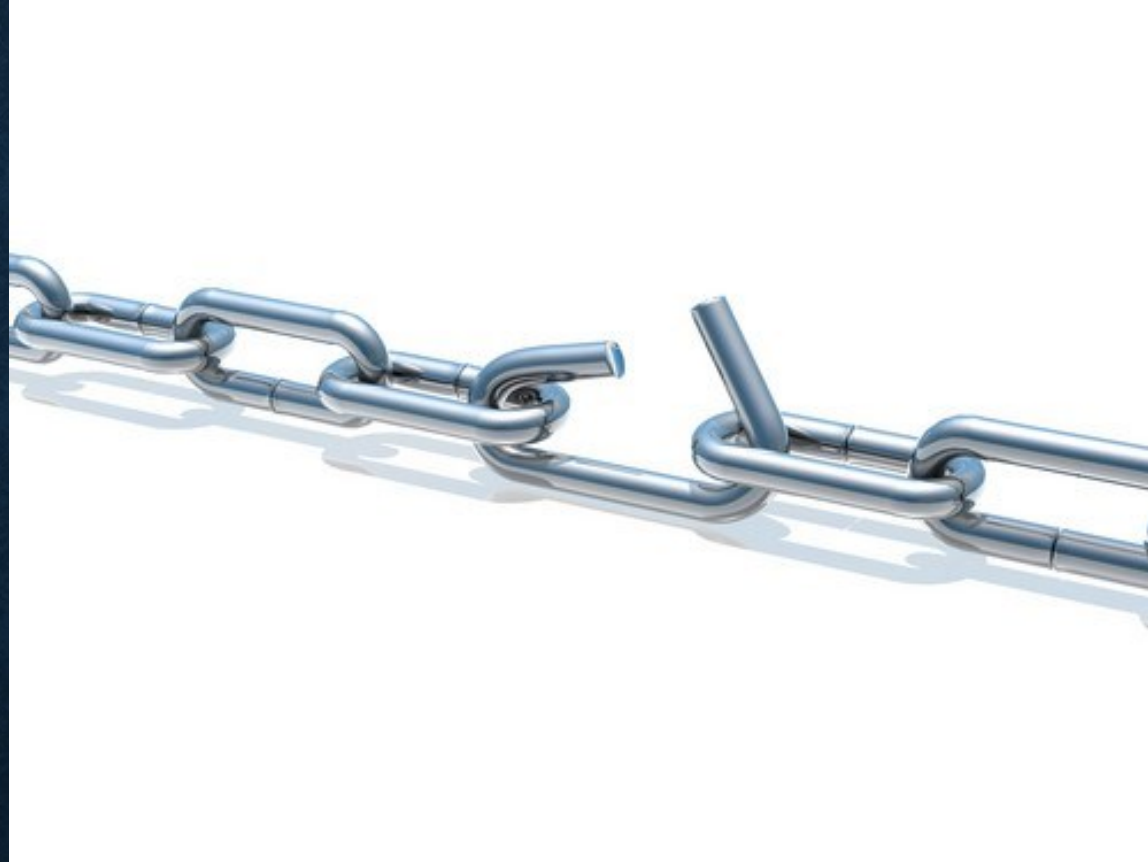
**BY EXACT SCIENCE, WE CAN STUDY RISK
OR HAZARD ONLY, NOT SAFETY**

CONTEXT, GOALS SETTING

Risk management steps

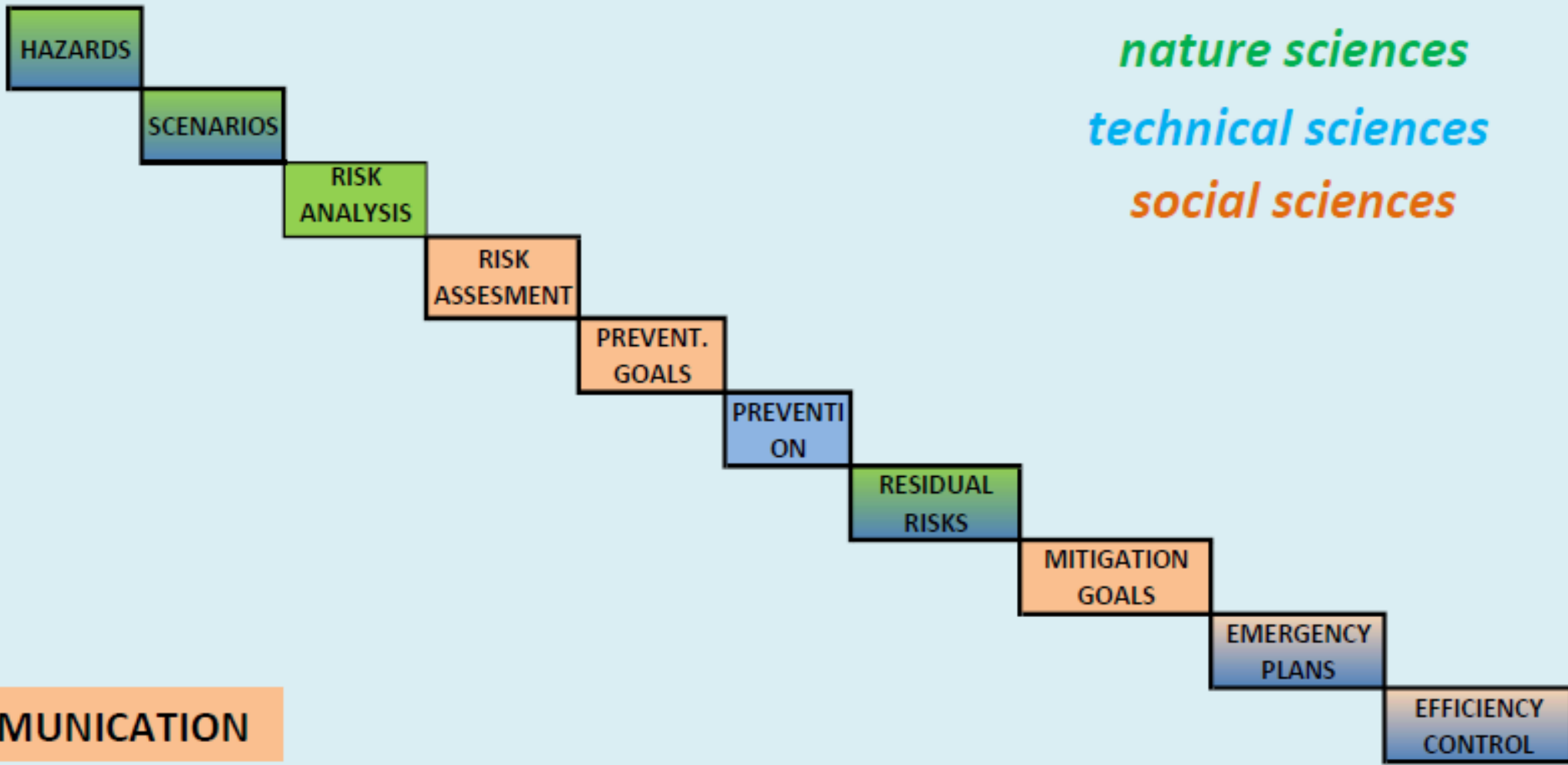


RISK MANAGEMENT PROCES IS THE CHAIN.



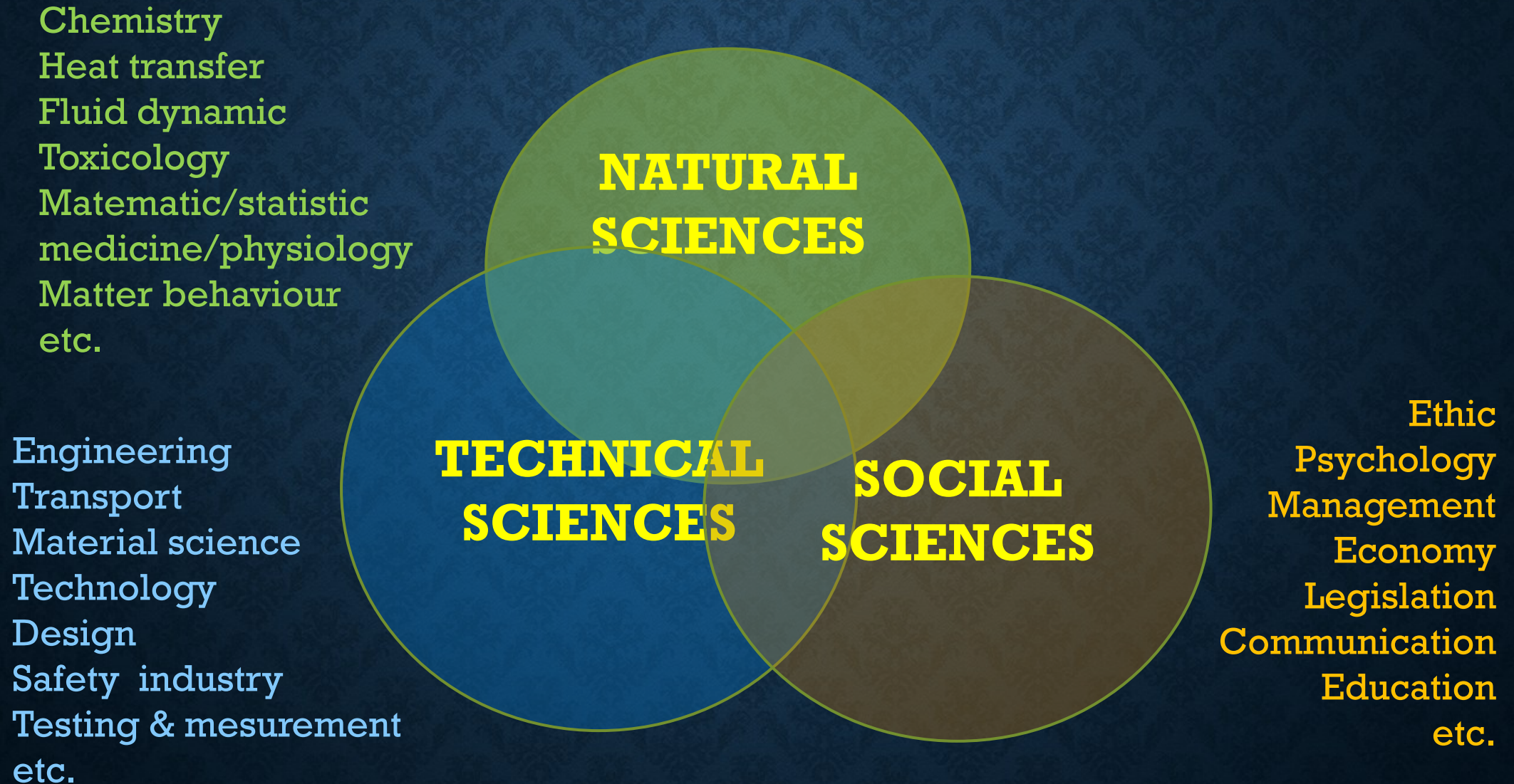
**STRENGHT OF THE CHAIN IS EQUEAL TO
THE STRENGHT OF THE WEAKEST LINK**

CONTEXT, GOALS SETTING



COMMUNICATION

SCIENCES IN RISK MANAGEMENT



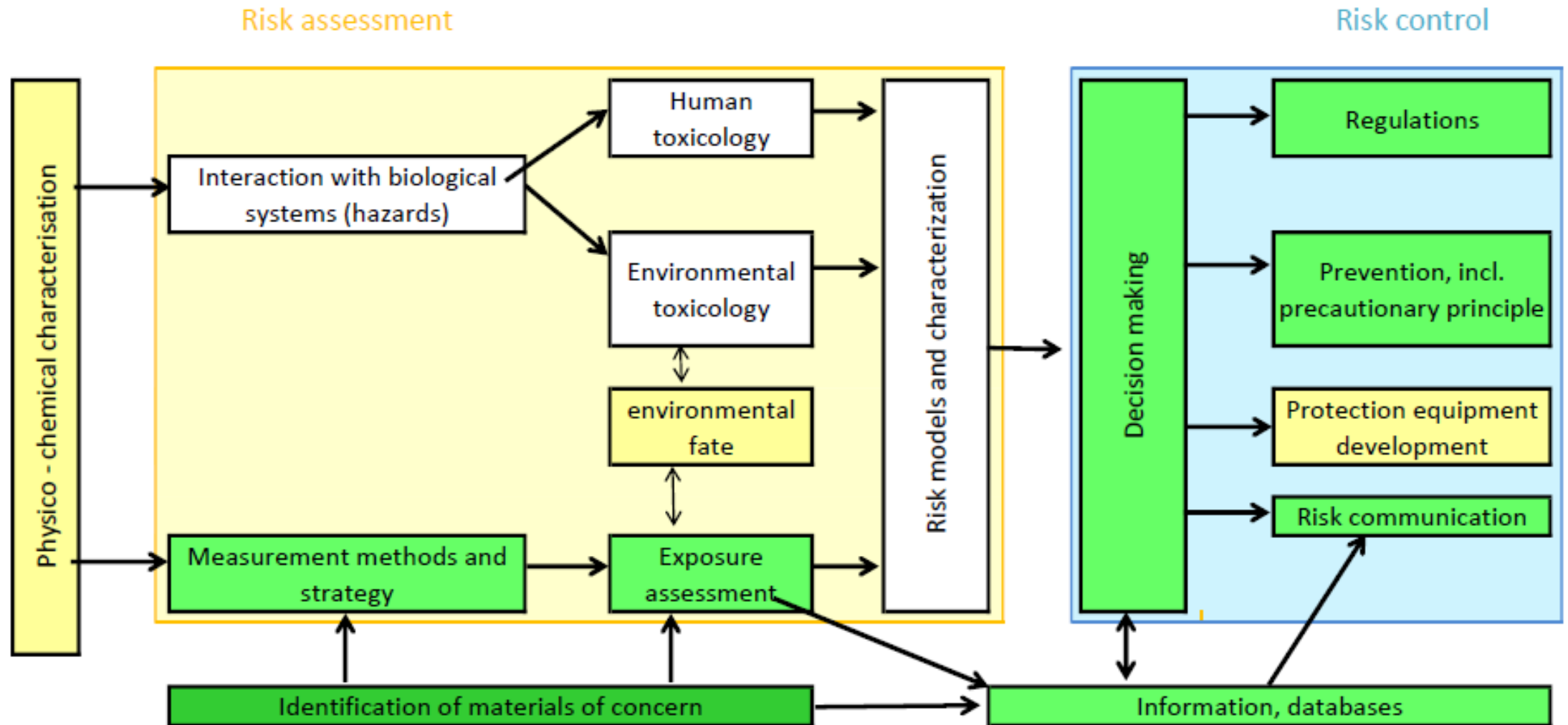
SOME „BUZZWORDS“ OF SAFETY (RISK MANAGEMENT)

- **...complex...**
- **...systemic...**
- **... total ...**

All of them contain interactions and feedbacks. How they are realized in the research practice and in education?

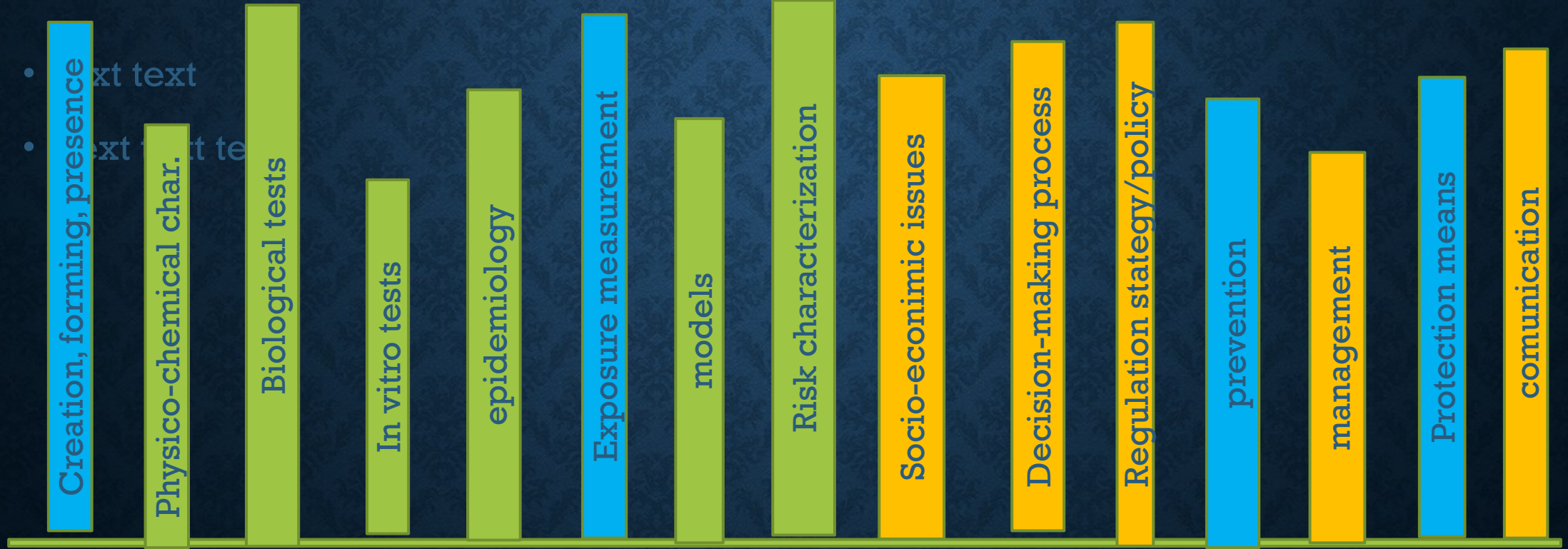
The main problem is the lack of interactions - „non-consumed marriage“ of disciplines

EXAMPLE: MANAGEMENT OF TOXICITY RISKS



IDEAL COMPLEX SOLUTION

Continue..



MISSING PART? - COMPLEXITY

Continue..

- text text

- text text text

Production and use

Physico-chemical char.

Biological tests

In vitro tests

epidemiology

Exposure measurement

models

Risk characterization

Socio-economic issues

Decision-making process

Regulation, state policy

Prevention

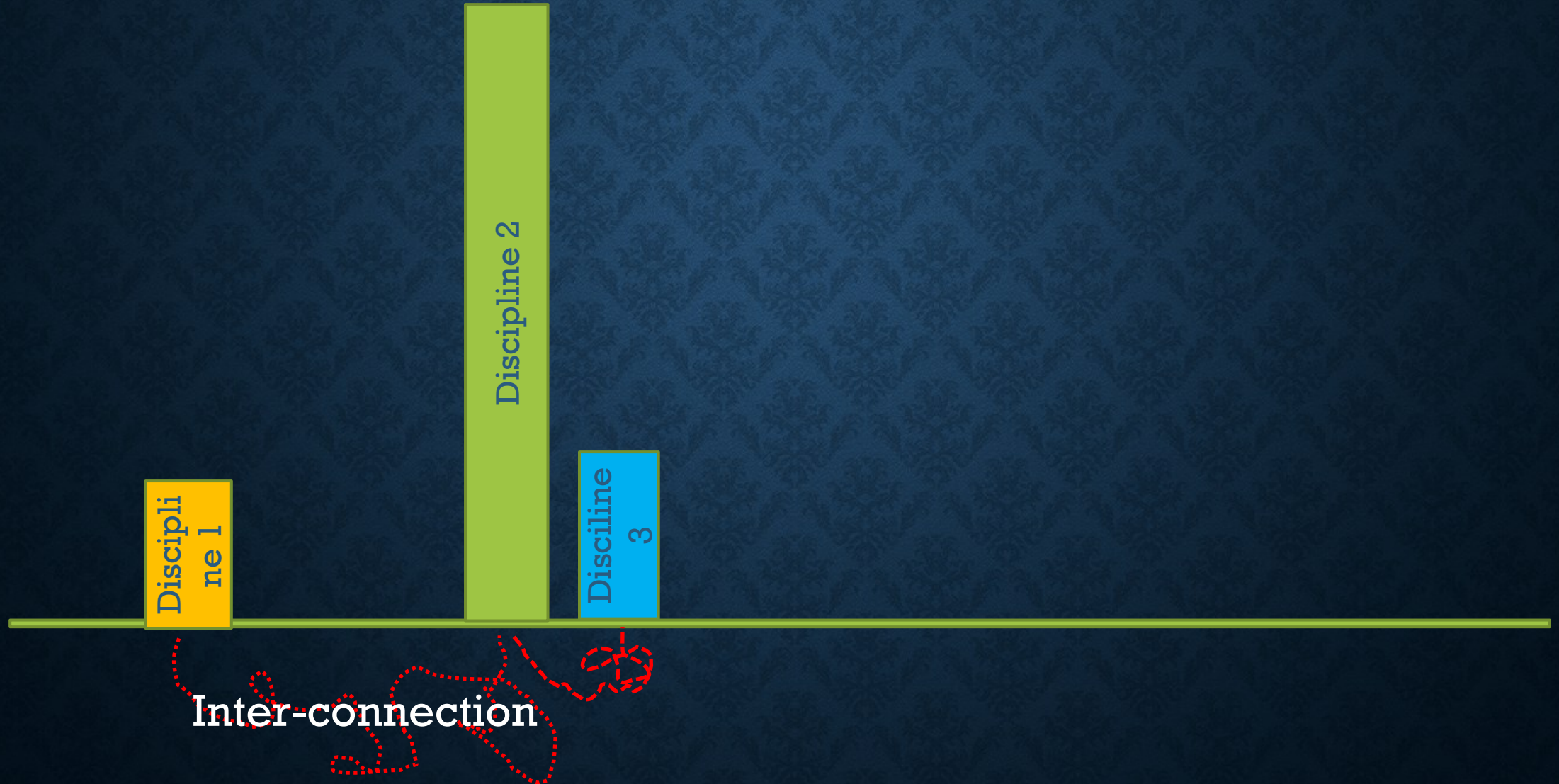
management

Protection means

communication

Interaction between disciplines, common solutions, cooperation

REALITY OF RESEARCH AND EDUCATION



WHY IS THE COOPERATION INSUFFICIENT?

Two main problems – motivation and lack of communication among disciplines

Motivation:

fire-fighters: only firefighting is important

scientists: „nice“ results, publications

managers: „money, power, money, power...“, but avoiding responsibility

administration: „if I can hide behind the paragraph, I am happy“

And communication?

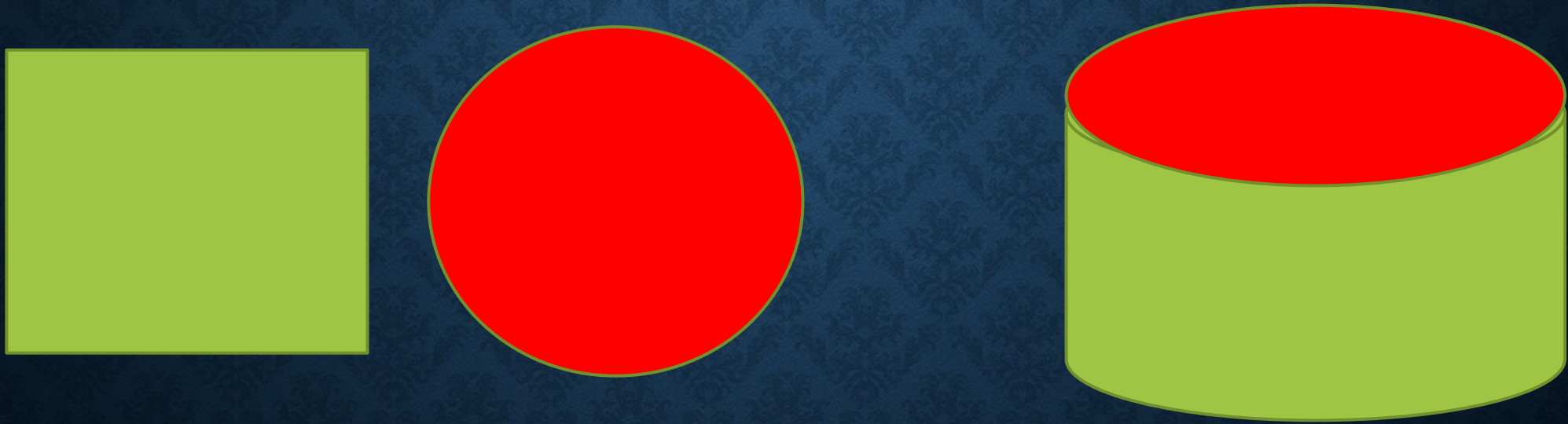
Communication should be clear, true and comprehensible



EC50 = 0.0035 mg/l
AETL 3 = 4 ppm



WHEN LOOKING FROM DIFFERENT ANGLES



Exchange between disciplines and common effort to understand the view, needs and possibilities of others is crucial

DOMAINS OF EXPERTISE & EDUCATION NEEDED



CHALLENGES

- New discipline – generalist of fire safety
- New paradigms?
- Will history of classic physic repeate?

CONCLUSION:

- I love safety, and I see new horizons in education



THANK YOU FOR YOUR ATTENTION!

