

Uncertainty, Risk and Cognitive Biases in Decision Processes

Lauquin Pierre

Risk, BCM and Crisis Manager

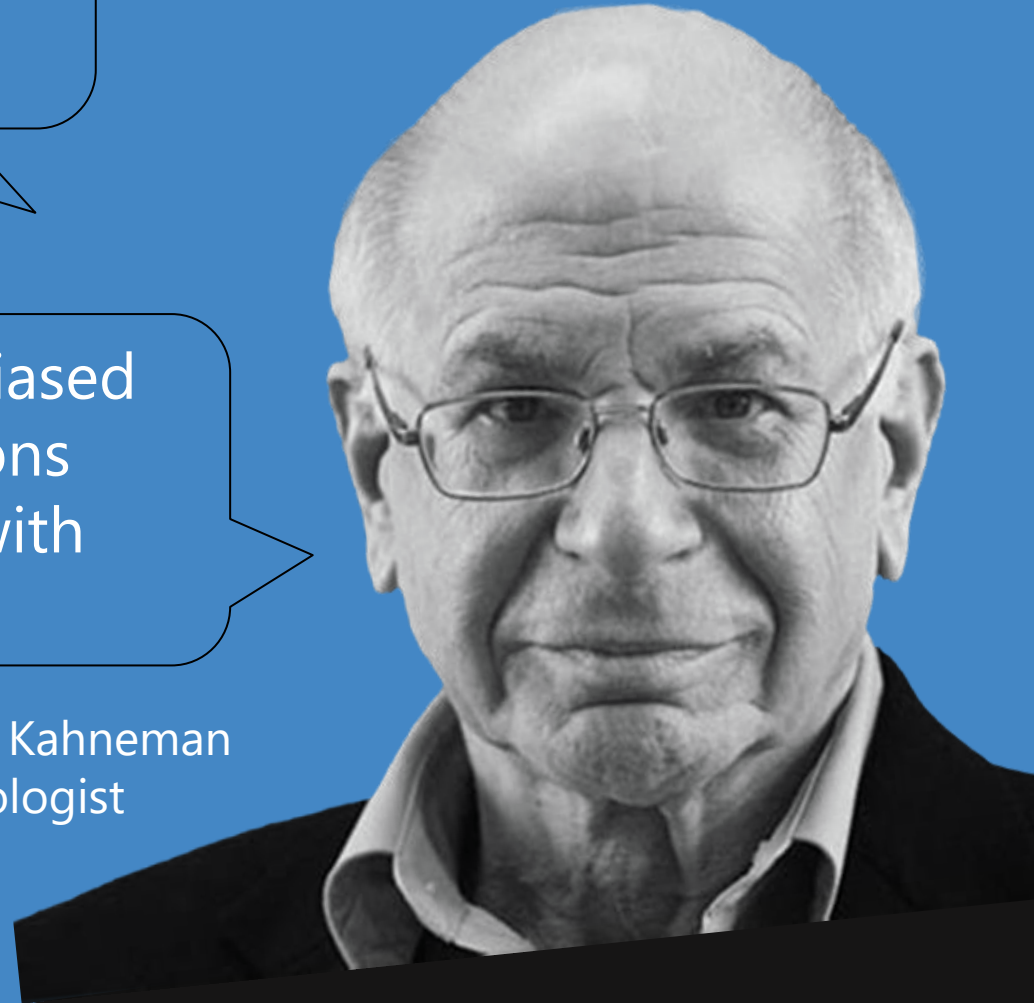
Central Compensation Office, 1st pillar

Swiss Confederation

« We don't think the way we think we think ».

« Our mind is strongly biased toward causal explanations and does not deal well with "mere statistics." ».

Daniel Kahneman
Psychologist



Mission – Vision - Values

Today

Mission:

Why the organisation exists

Qualitative

Future

Vision:

What the Organisation wants to become

Some quantification

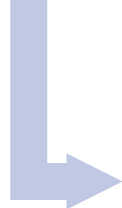


Values



Vision

Picture of the future, direction



Strategy

Operational plan, measurable goals, high-level initiatives, dynamic



Objectives

SMART: Specific, Measurable, Achievable, Realistic, Time-bound

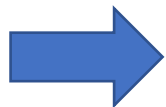


Projects

Armed wing of the strategy



Company's results depend on the success of the projects



Lot of pressure top-down on Project Managers!

What Managers want ?



- Success of the project
- Faster
- Less costly
- Fits in Cash flow / investment politics
- Possibility to change scope
- ... Ok for some level of uncertainty

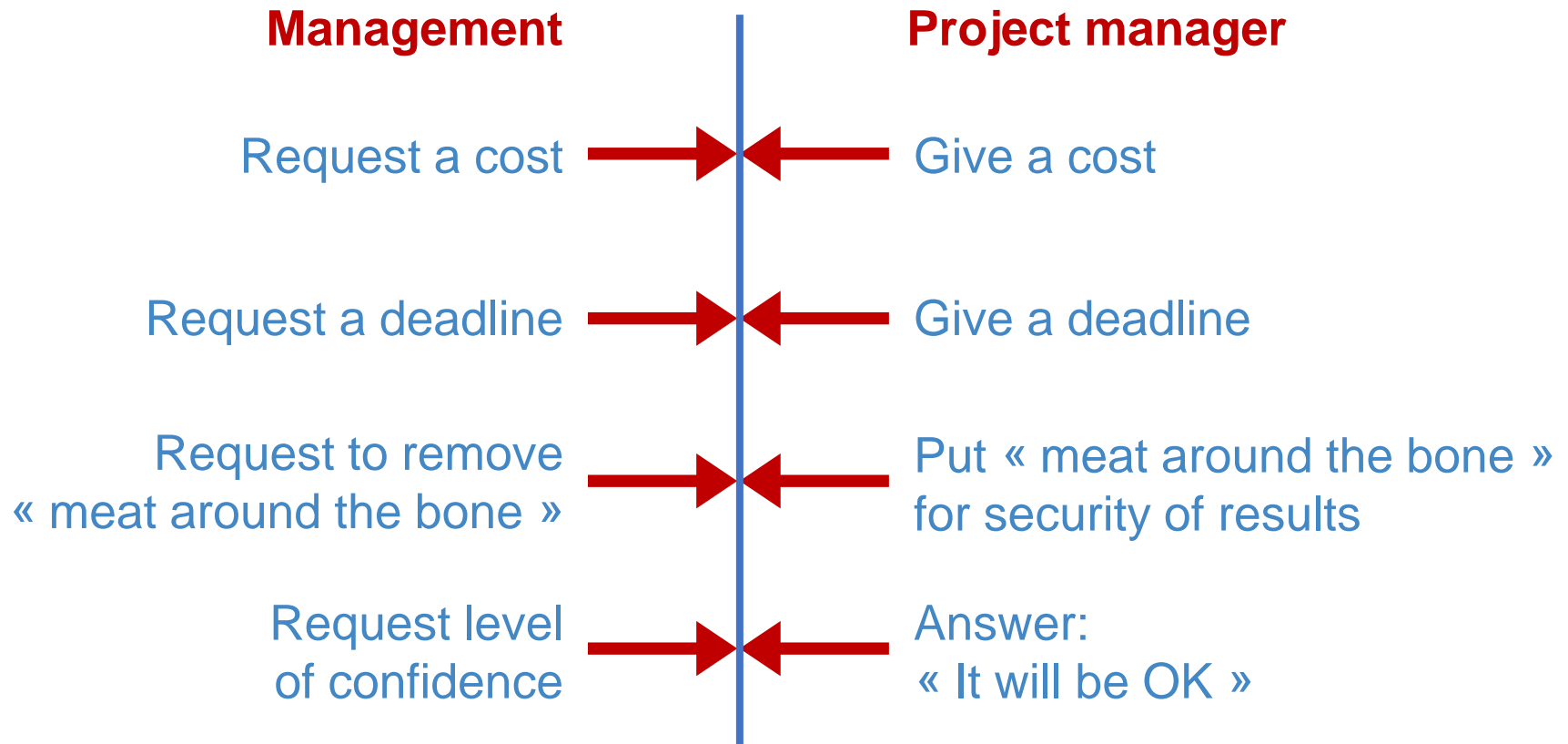
What PM does



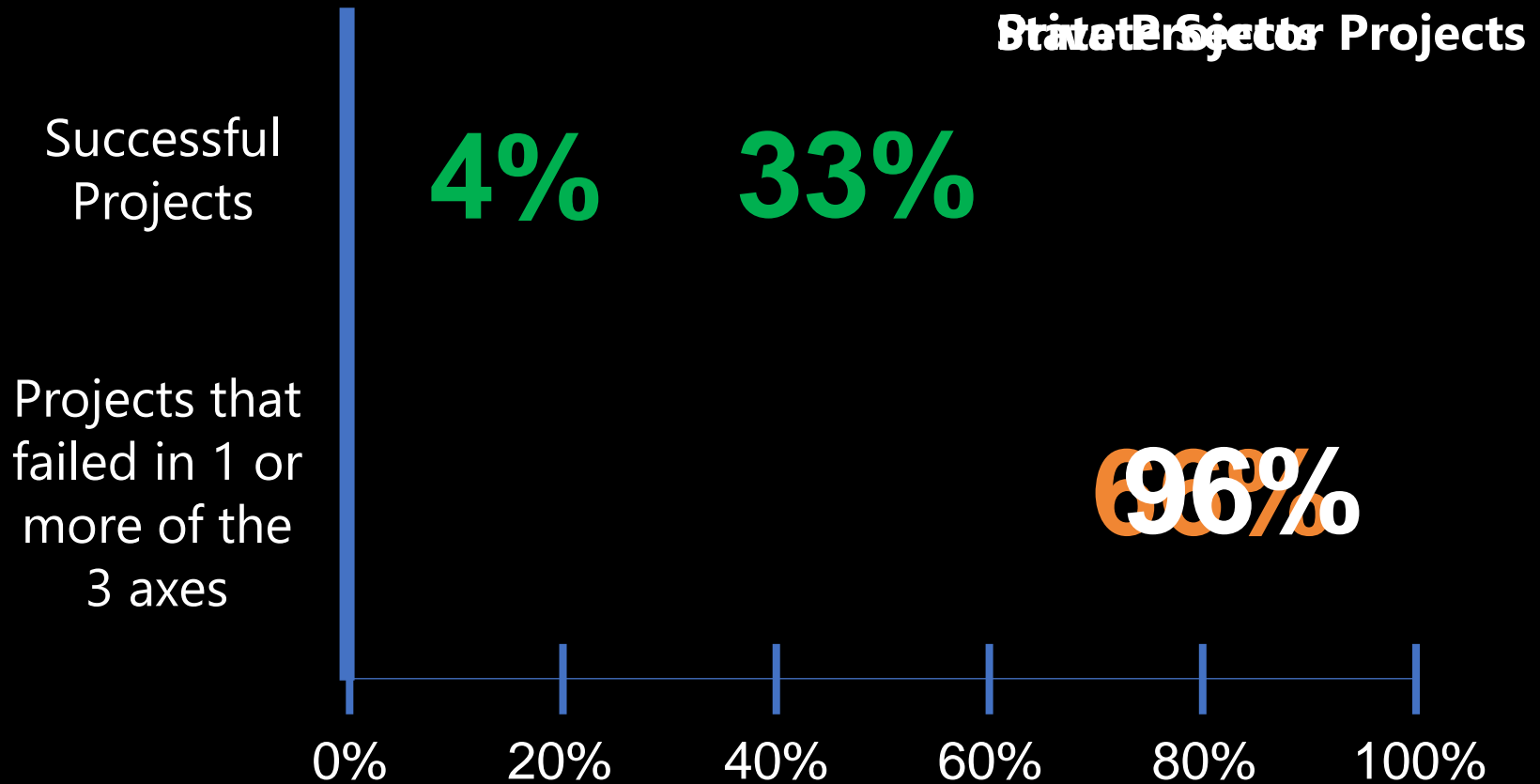
- Create steps of the project
- Evaluate with specialists 2-3 scenarios
- Evaluate available resources
- Evaluate costs / duration (mostly qualitative)
- Understand quality level requested
- Add margins to compensate perception of uncertainty
- Deliver a final date, and a price.

EVERYTHING
WILL BE OK

Here starts the challenges



Projects fail...too often



Philharmony of Hambourg (Elphi)

- Bu
- Pla
- 18

Resu

- Lac
cos
- Arc



ons (!!!)

!!)

ed

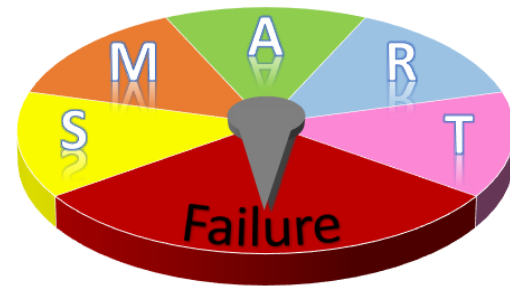
3 Main reasons of failure

1. Poor estimates / missed deadlines



2. Lack of stakeholder involvement, lack of support from executive sponsors

3. Poor definition of objectives

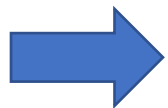


The third global survey on the current state of project management; PwC 2013

Poor estimates?



- Estimates are done by humans, generally in qualitative form
- Humans are subject to cognitive biases*
- One of the most common bias is **Overconfidence**



Difficulty to measure uncertainty (our judgement is often based on « experience », and « gut feeling »)

*Definition of cognitive bias:

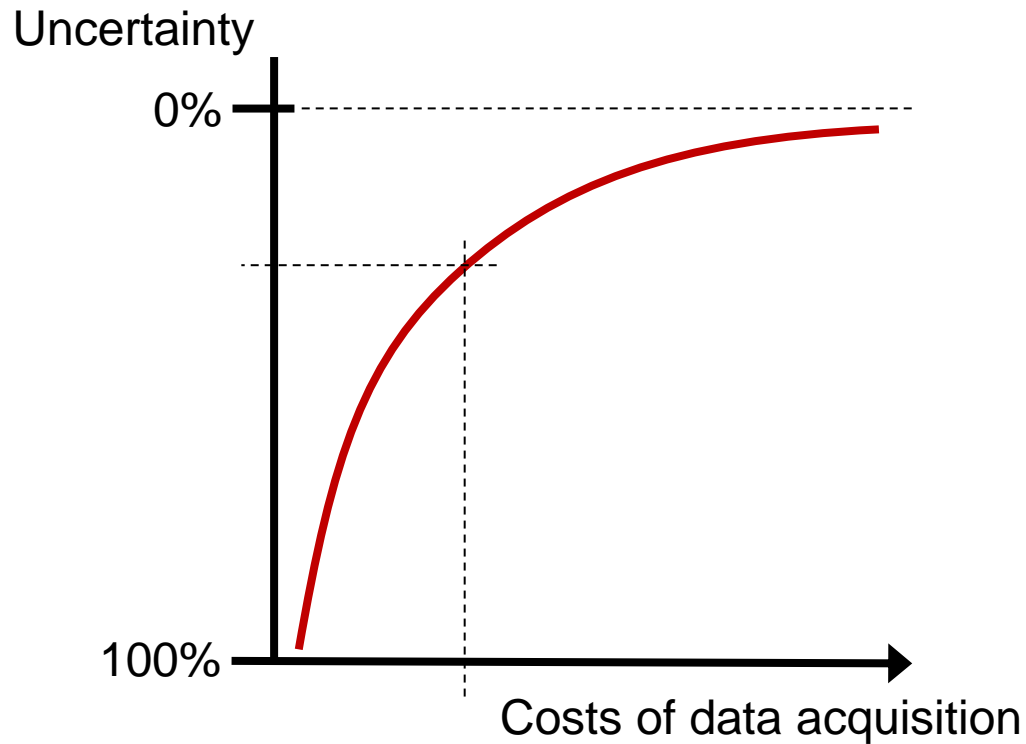
A mechanism of thought that causes a deviation in judgment.

Reference to a systematic deviation from reality.

Uncertainty? → MESURABLE !

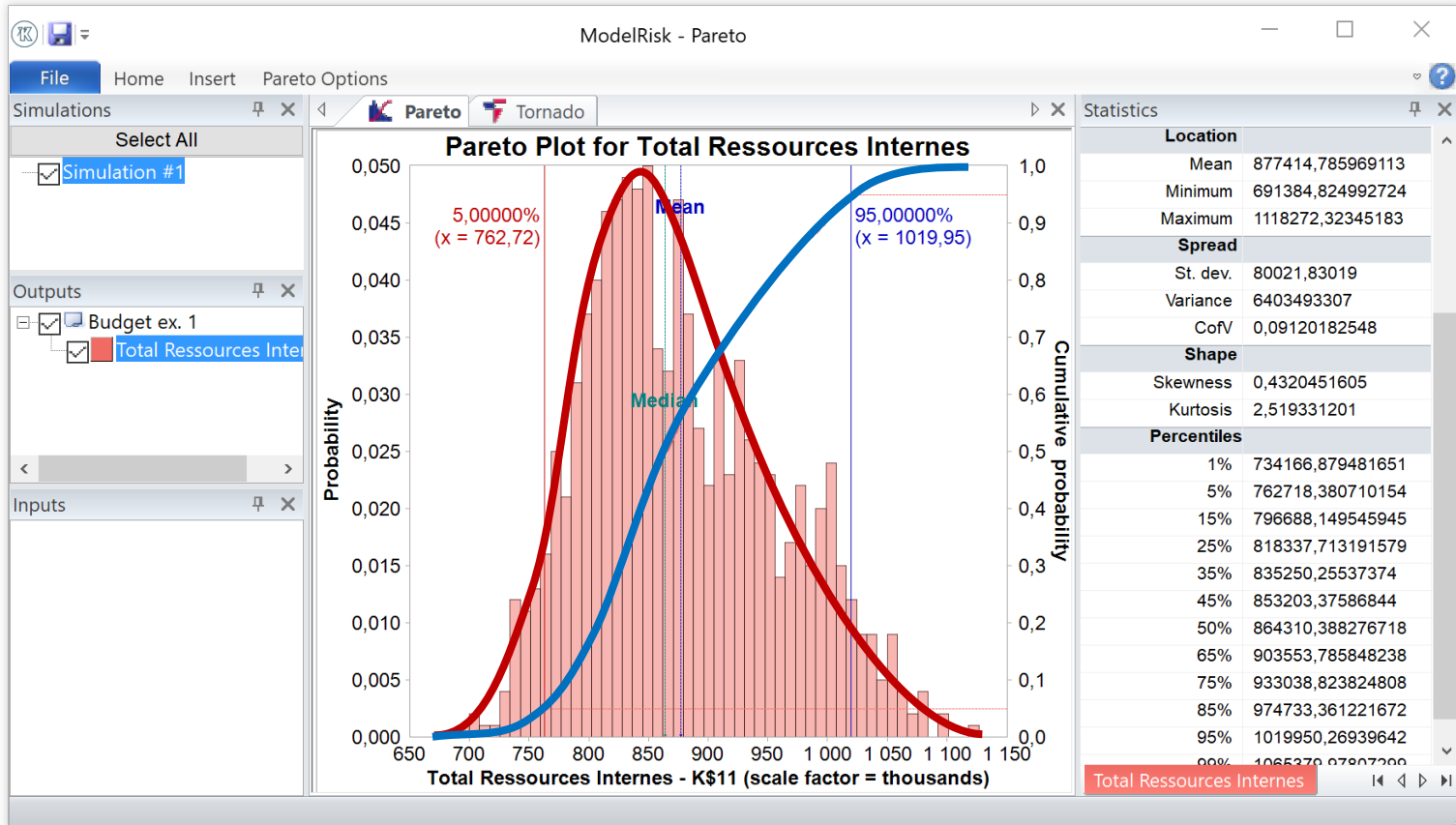


Costs of data acquisition

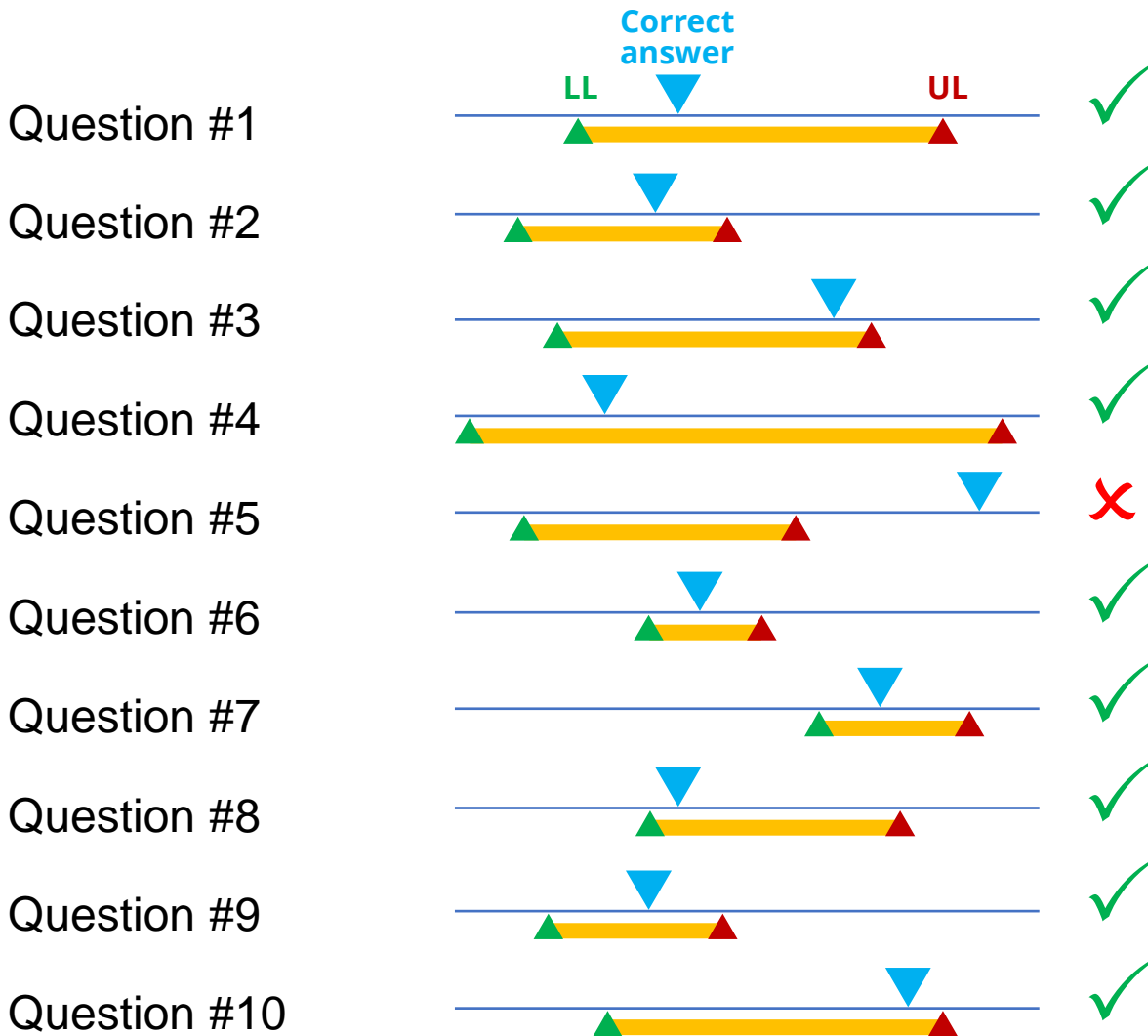


Solution? Quantification !

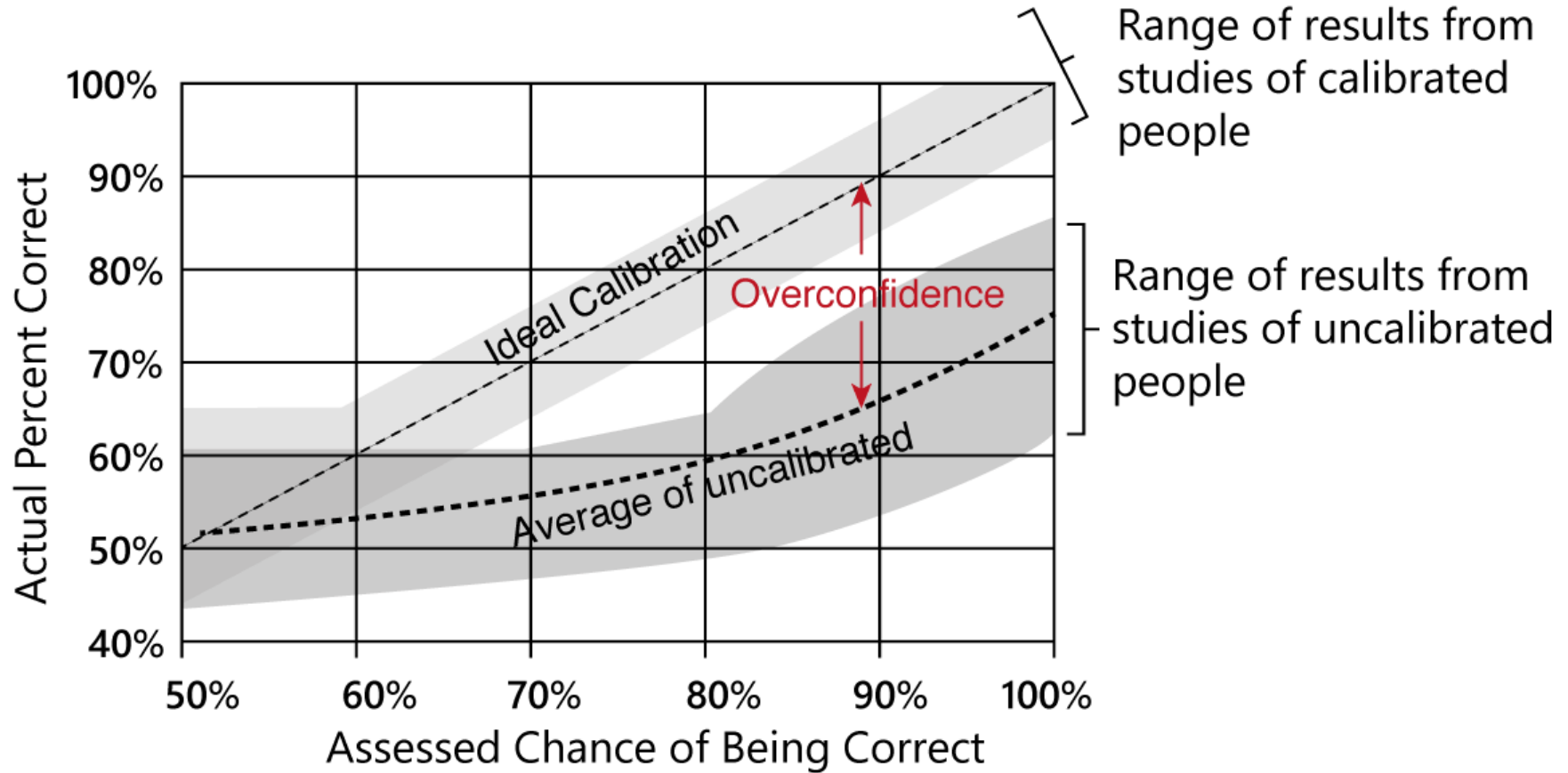
Ressources internes	tarif/jour	Nb. Jours optimiste	Nb. Jours attendus	Nb. Jours pessimiste	Total Optimiste	Total Attendu	total Pessimiste	Simulation Monte Carlo
Pilotage du projet	1'000	400	500	750	400'000	500'000	750'000	472'938
Spécialistes-développeurs	1'000	120	150	200	120'000	150'000	200'000	173'251
Tests	1'000	70	80	100	70'000	80'000	100'000	82'619
Exploitation	1'000	60	80	120	60'000	80'000	120'000	76'741
TOTAL					650'000	810'000	1'170'000	805'549



Qualibrated?

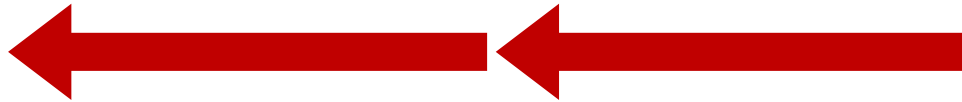


Uncalibrated



D. Hubbard, The failure of Risk management

How to improve?



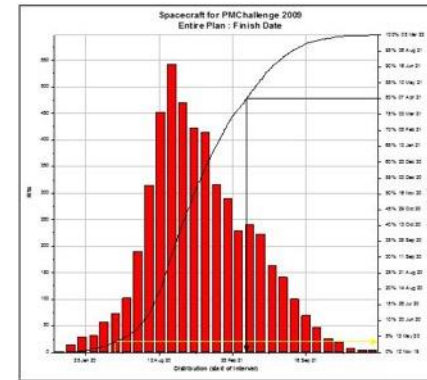
Cognitive
biases
awareness

③



Personal
calibration

②



Monte Carlo

①

Conclusion?



Responsibilities at the right place !

- Monte Carlo gives to Management the level of uncertainty of the PM Team at a specific time
- Monte Carlo gives a probability to reach a certain amount / duration

The Management can then decide the level of risk they agree to take

Don't think. Know.

Reference Books

- The failure of Risk Management
- How to measure anything

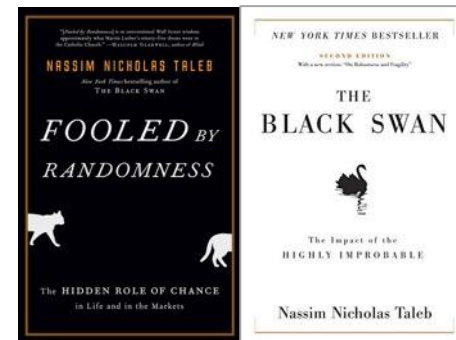
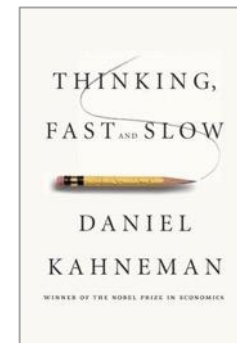
Douglas W. Hubbard, 2009, 2010

- Thinking, Fast and Slow

Daniel Kahneman, 2011

- Fooled by Randomness,
- Black Swan

Nassim N. Taleb, 2005, 2007



March 10th 2022 / 20

Global Risk Management Day

by Copenhagen Compliance®

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