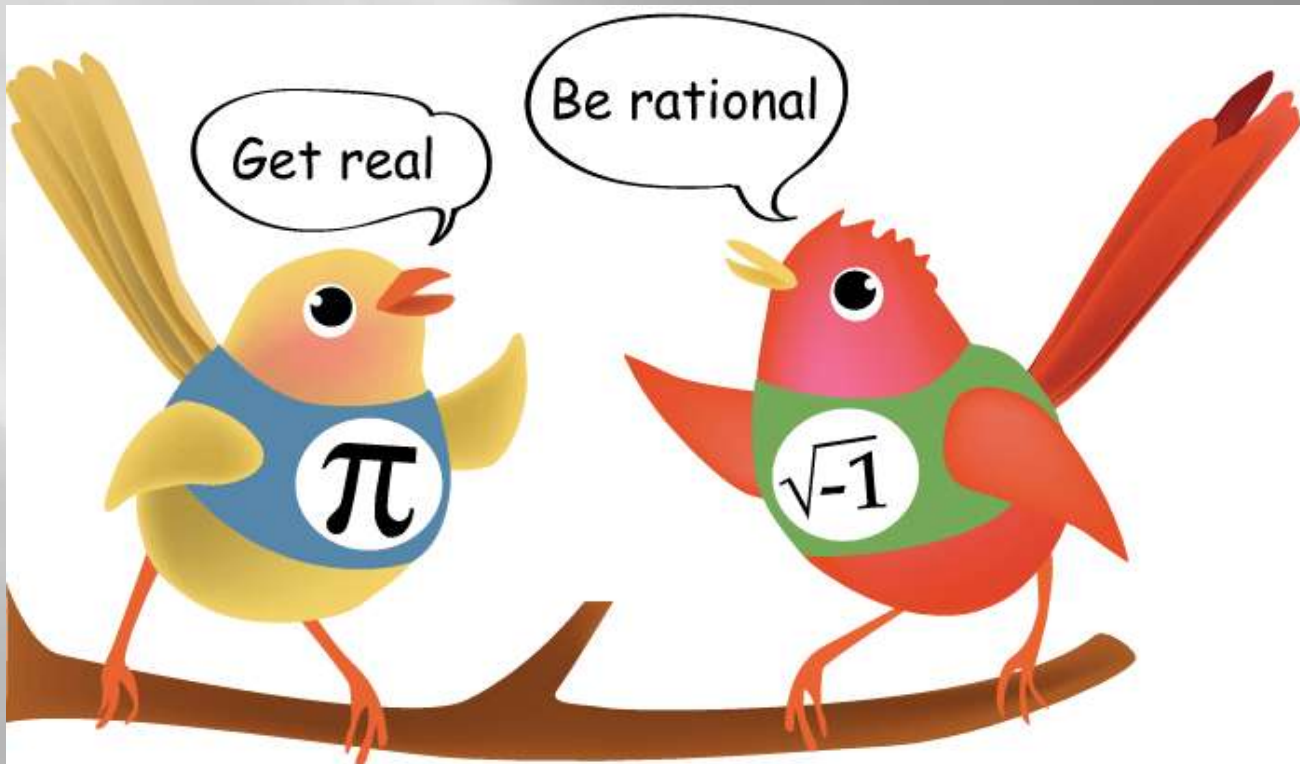


Rationality Myth

How & Why People Make Weird Choices



Rational animal

„Man is a rational animal – so at least I have been told. Throughout a long life I have been looking diligently for evidence in favour of this statement, but so far I have not had the good fortune to come across it.“

B. Russell

- ▣ **What does “RATIONAL” mean?**
- ▣ *Reasonable & logical*
- ▣ *Unbiased by emotions*
- ▣ *Optimal, given the information available*

Rational choice

- ▣ *Expected Utility Theory:*

$$\mathbf{E}_{\text{xpectancy}} \times \mathbf{V}_{\text{alue}}$$



Example 1: Crockery story



Example 1: Crockery story



Example 1: Crockery story

Hsee, C. K. (1998). Less is better: When low-value options are valued more highly than high-value options. *Journal of Behavioral Decision Making*, 11, 107-121.

Set A:

24 pieces

- ▣ Dinner plates 8, all in good condition
- ▣ Soup/salad bowls 8, all in good condition
- ▣ Dessert plates 8, all in good condition

Set B:

31 pieces

- ▣ Dinner plates 8, all in good condition
- ▣ Soup/salad bowls 8, all in good condition
- ▣ Dessert plates 8, all in good condition
- ▣ Cups 8, 2 of them broken
- ▣ Saucers 8, 7 of them broken

Example 1: Crockery story

Hsee, C. K. (1998). Less is better: When low-value options are valued more highly than high-value options. *Journal of Behavioral Decision Making*, 11, 107-121.

Three groups:

	Offered price Set A(24pcs)	Offered price Set B (31pcs)
Group 1 - simultaneous evaluation	\$ 30	\$ 32
Group 2 - Set A only	\$ 33	-
Group B - Set B only	-	\$ 23

Example 2: Dictionary story

Hsee, C. K. (1996). The evaluability hypothesis: An explanation for preference reversals between joint and separate evaluations of alternatives. *Organizational behavior and human decision processes*, 67(3), 247-257.

Dictionary A:

- ▣ Published 1993
- ▣ 10,000 entries
- ▣ Like new

Dictionary B:

- ▣ Published 1993
- ▣ 20,000 entries
- ▣ **Cover torn**, otherwise like new

Example 2: Dictionary story

Hsee, C. K. (1996). The evaluability hypothesis: An explanation for preference reversals between joint and separate evaluations of alternatives. *Organizational behavior and human decision processes*, 67(3), 247-257.

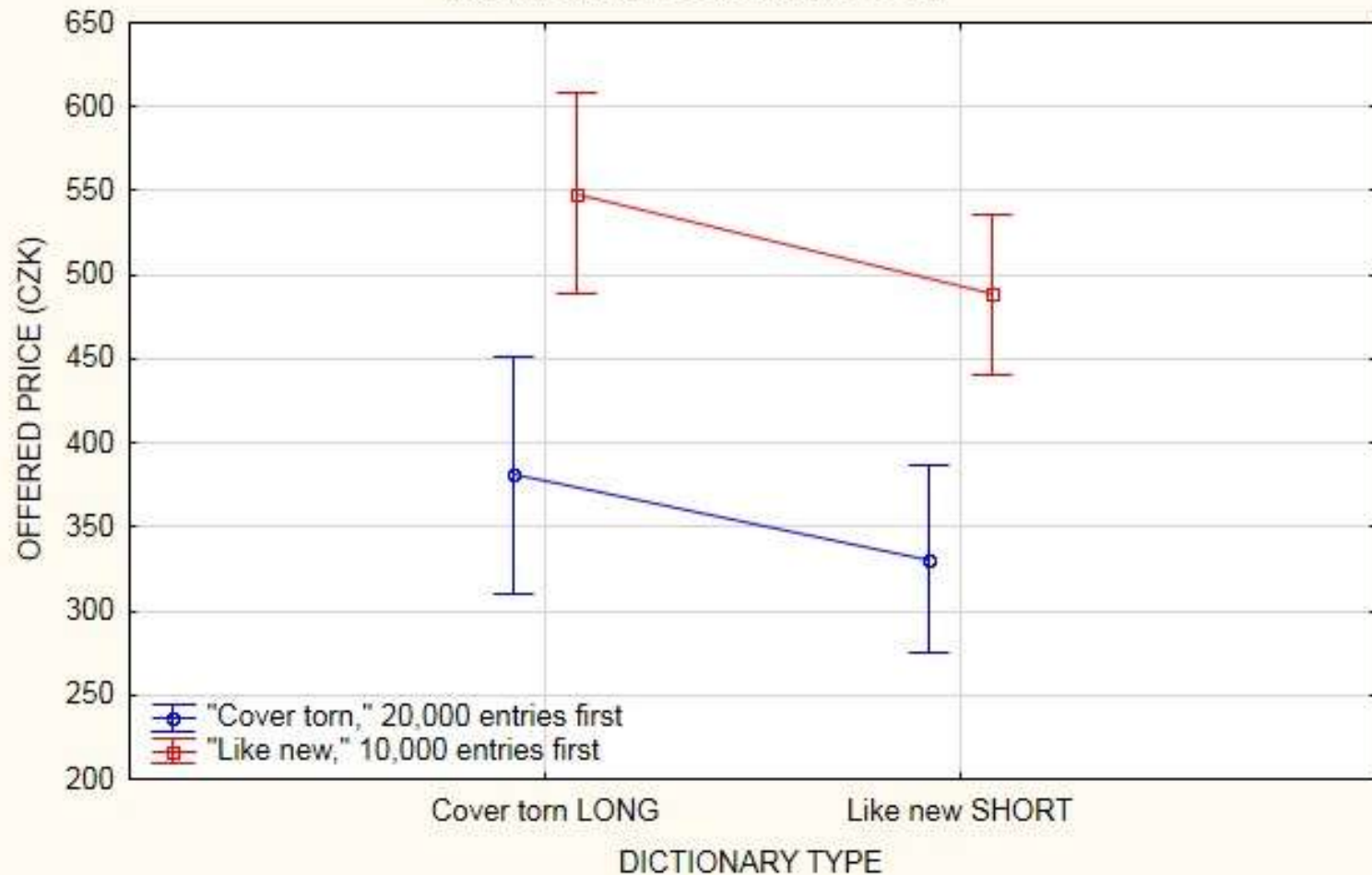
Three groups:

	Offered price Dictionary A	Offered price Dictionary B
Group 1 - simultaneous evaluation	\$ 19	\$ 27
Group 2 - Dictionary A only	\$ 24	-
Group B - Dictionary B only	-	\$ 20

Example 3: Own data 2018

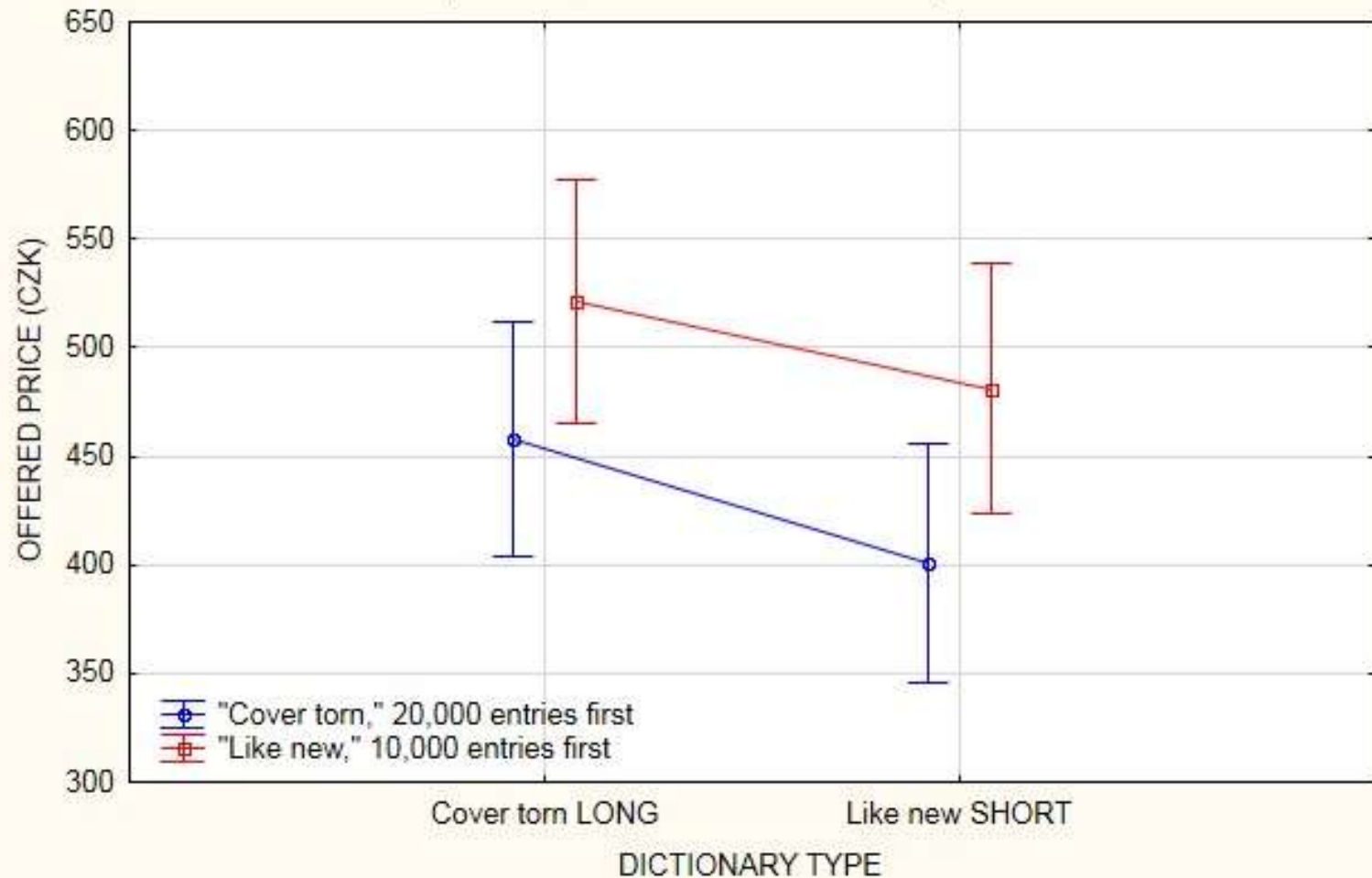
EXPERIMENT RESULTS - EFFECT OF ORDER OF PRESENTATION ("ANCHORING") AND FRAMING

(Means and 95% confidence intervals)



Example 4: Own data 2019

EXPERIMENT RESULTS - EFFECT OF ORDER OF PRESENTATION ("ANCHORING") AND FRAMING (Means and 95% confidence intervals)



Conclusions

▣ Preference reversal

In certain conditions, our preferences and/or evaluations may change even though the attributes of the objects remain the same.

Rational prioritization (transitive):

A is more than **B** is more than **C**

Irrational prioritization (intransitive):

A is more than **B** is more than **C** is more than **A**

amount

defect

amount

defect

amount

defect

Conclusions

- ▣ **Preference reversal**

- ▣ **Evaluability effect**

Our evaluation of options is only based on the information immediately available.

We do not consider relative value of possible alternatives if they are not available.

**Does this mean our minds
are „broken“?**

How we think our mind works...



**Rational thinking /
decision making**

**Irrational thinking /
decision making**



Which series is more likely...?



How our mind actually works...

HEURISTICS



Some features of human decision making

- ▣ **Preference reversal**

- ▣ **Evaluability effect**

- ▣ **Anchoring**

Initial information on one of the alternatives profoundly influences our evaluation of subsequent alternatives = RELATIVE EVALUATION.

Some features of human decision making

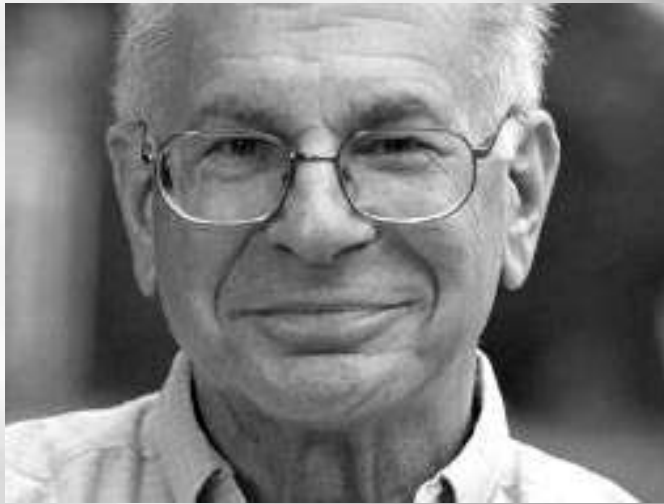
- ▣ **Preference reversal**
- ▣ **Evaluability effect**
- ▣ **Anchoring**
- ▣ **Loss aversion**

We invest more into avoiding losses than into achieving gains (of the same value).

When negative information is available, we tend to give it special attention and prioritize it.

Loss aversion

Daniel Kahneman



Amos Tversky



Behavioural economics

Risk aversion

People avoid risk and uncertainty.

(Daniel Bernoulli)

Unfortunately, most of our decision-making involves risk and – especially – uncertainty.

Risk = *I know the probability of outcome (e.g. gambling – probability of winning can be computed)*

Uncertainty = *I don't know the probability of outcome*

Risk aversion

Kahneman & Tversky

Situation A:

You have been given
\$1,000. You are now
asked to choose one of
these options: 50%
chance to **win** \$1,000
OR get \$500 for sure

Risk aversion

Kahneman & Tversky

Situation B:

You have been given \$2,000. You are now asked to choose one of these options: 50% chance to **lose** \$1,000 **OR** lose \$500 for sure

Loss × risk aversion

Kahneman & Tversky

Situation A:

You have been given \$1,000. You are now asked to choose one of these options: 50% chance to **win** \$1,000 **OR** get \$500 for sure

50% chance of \$1,000 or \$2,000
OR
100% chance of \$1,500

Situation B:

You have been given \$2,000. You are now asked to choose one of these options: 50% chance to **lose** \$1,000 **OR** lose \$500 for sure

50% chance of \$1,000 or \$2,000
OR
100% chance of \$1,500

Loss × risk aversion

	Certain \$1,500	Uncertain \$1,000 or \$2,000
Situation A: \$1,000 given 50% chance to win additional \$1,000 OR get \$500 for sure	YES!!!	No, thanks.
Situation B: \$ 2,000 given 50% chance to lose \$1,000 OR lose \$500 for sure	Not if I can avoid it.	THANKS FOR THE CHANCE!!!

Loss × risk aversion

	Certain \$500 gain	Uncertain \$1,000 or \$0 gain
Situation A: \$1,000 given 50% chance to win additional \$1,000 OR get \$500 for sure	YES!!!	No, thanks.
Situation B: \$ 2,000 given 50% chance to lose \$1,000 OR lose \$500 for sure	Not if I can avoid it.	THANKS FOR THE CHANCE!!!

Loss × risk aversion

	Certain \$500 loss	Uncertain \$1,000 or \$0 loss
Situation A: \$1,000 given 50% chance to win additional \$1,000 OR get \$500 for sure	YES!!!	No, thanks.
Situation B: \$ 2,000 given 50% chance to lose \$1,000 OR lose \$500 for sure	Not if I can avoid it.	THANKS FOR THE CHANCE!!!

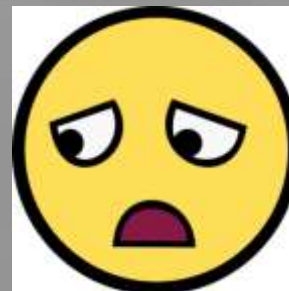
Loss aversion

A matter of FRAMING.

"Let's go for a hike! Adam and Susan said they would also go!"

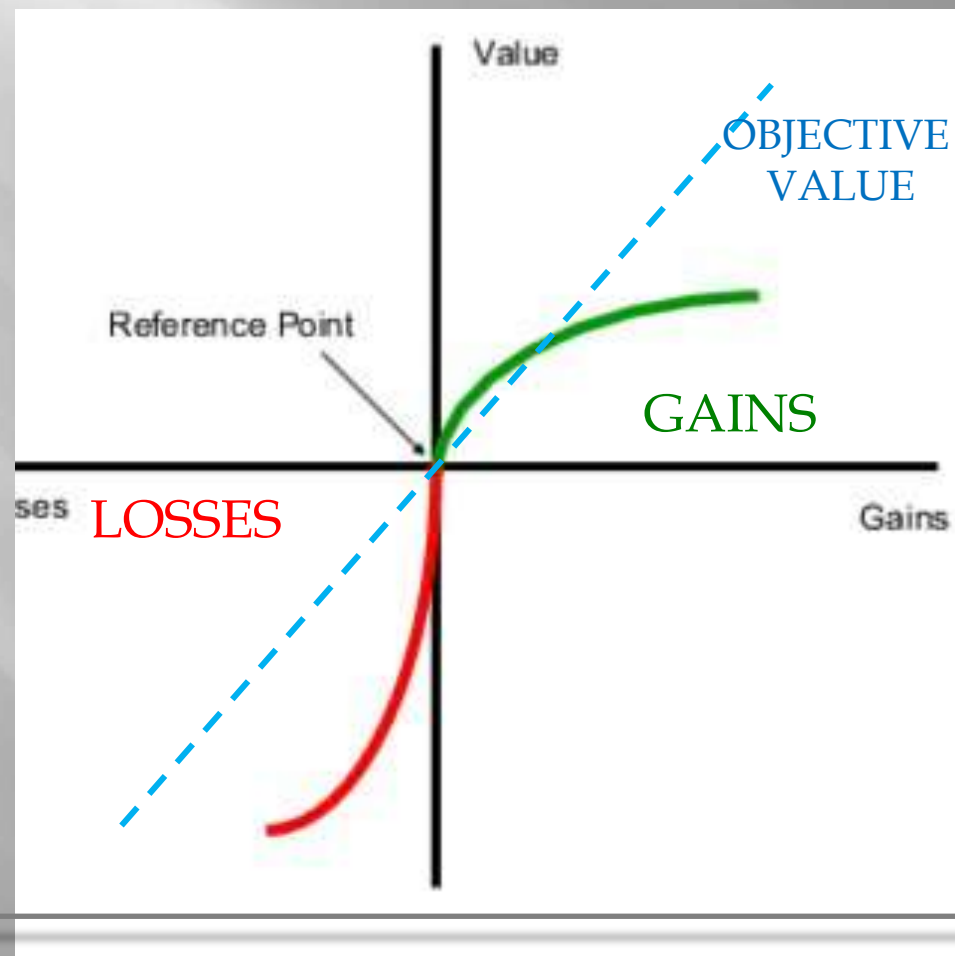


"Let's go for a hike! Adam and Susan said they would also go, but, unfortunately, Steve cannot make it..."



How do we evaluate options?

Kahneman & Tversky: Prospect Theory



One for fellow orange lovers...



3 kg

Which do you choose?



89.90 CZK



SPECIAL OFFER



39.90 CZK

Downtown



Which do you choose?



3,499 CZK

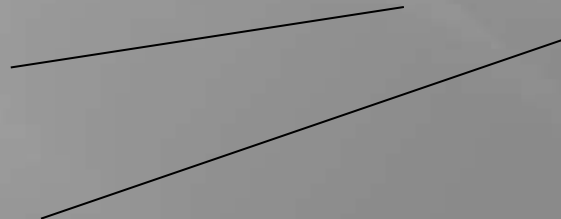


SPECIAL OFFER

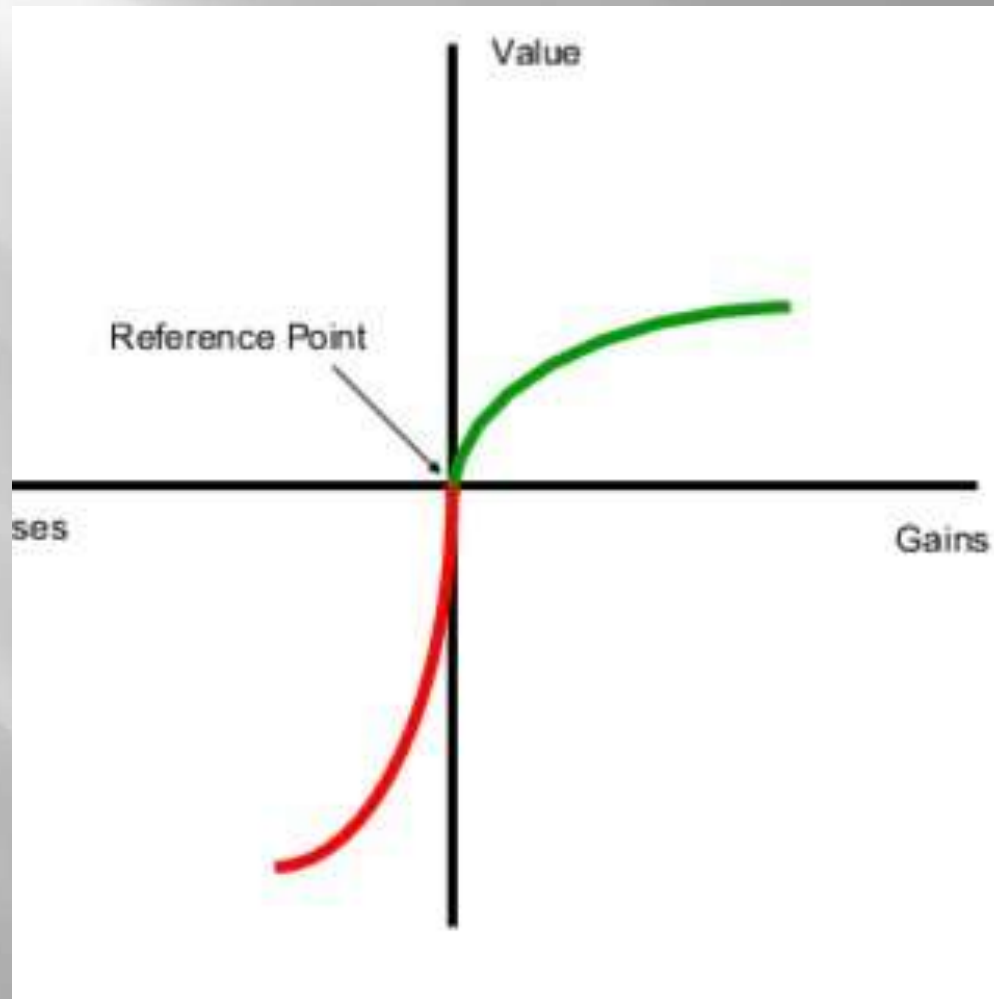


3,459 CZK

Downtown



Loss aversion, preference reversal & any choice



Loss aversion, preference reversal & any choice

ALL CHOICES are influenced by CONTEXT.

Irrational behaviour cont.

- ▣ *Expected Utility Theory:*

$$\text{Expectancy} \times \text{Value}$$



How people plan complex projects

Kahneman's examples:

Estimate

- ▣ Plan to write a textbook on decision making
- ▣ Estimates of time needed based on available information on resources:
- ▣ 1,5 to 2,5 yrs

Reality

- ▣ Asked a colleague about other teams who attempted the same
- ▣ **Only 40% success rate** (others abandoned the plan)
- ▣ The others **took around 10 yrs**
- ▣ Most teams' resources were better

Planning Fallacy

Kahneman's examples:

Estimate

- ▣ New Scottish Parliament building – initial estimate **£40 million**
- ▣ Estimates of American homeowners of how much kitchen remodelling would cost: **\$18,658**

Reality

- ▣ Finally completed for **£431 million**
- ▣ Real cost: **\$38,769**

Planning Fallacy

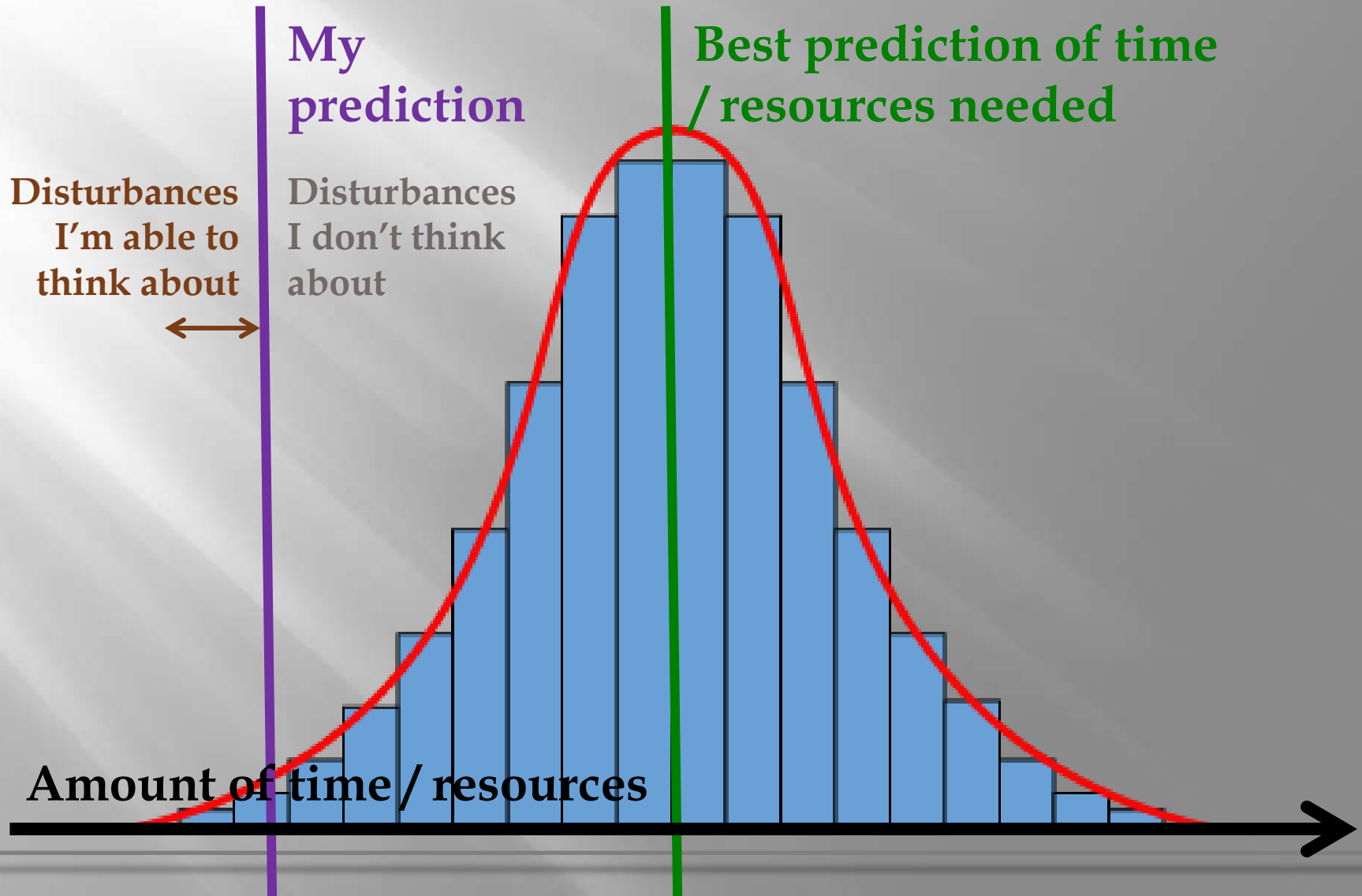
People tend to...

- ▣ Only consider best-case scenarios
- ▣ Disregard “statistics” on actual success rate of previous similar attempts

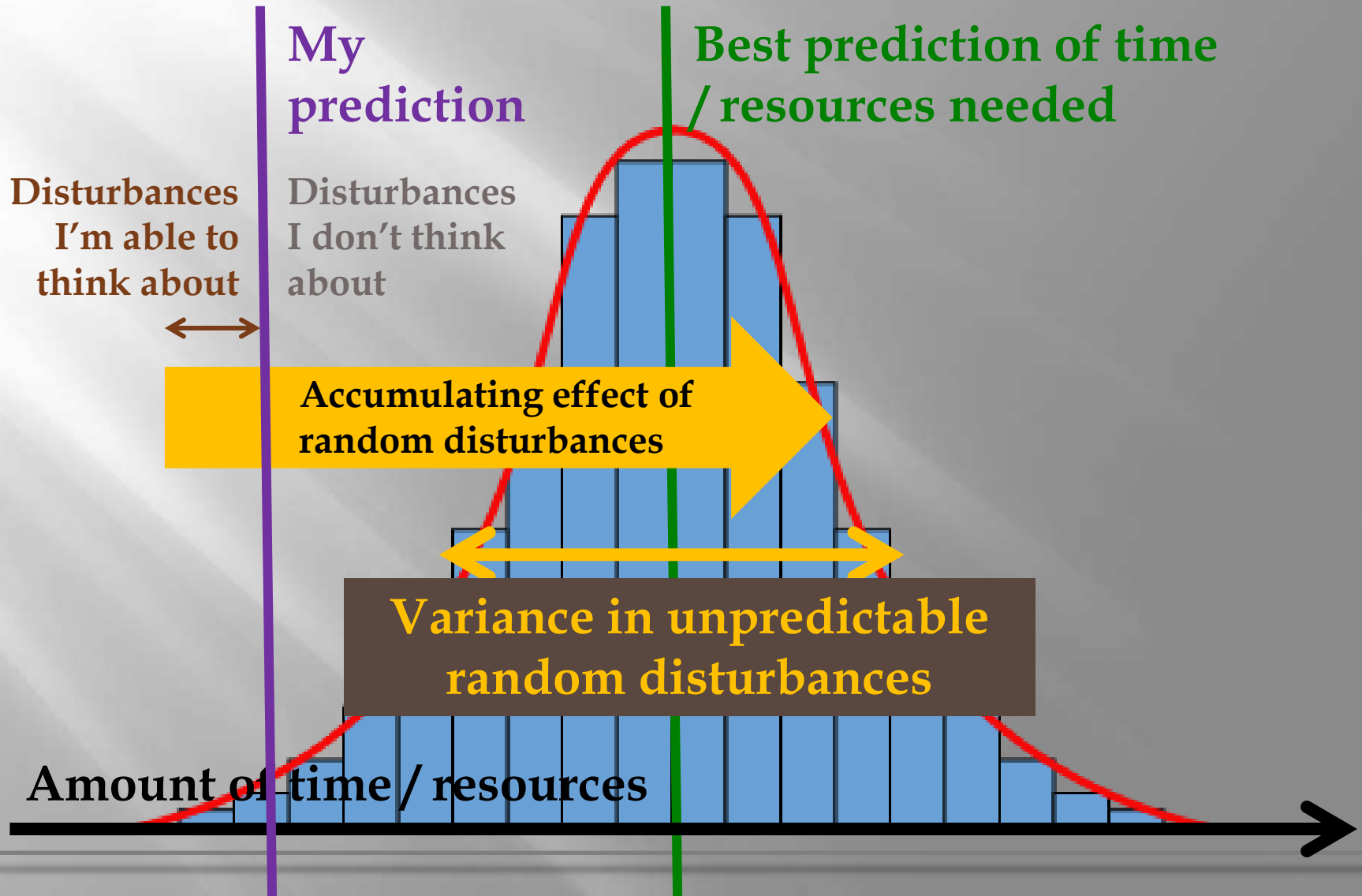
Why?

- ▣ Because we do not consider unexpected events and random disruptive factors, which are **almost always** present

Planning Fallacy



Planning Fallacy



Planning Fallacy

People tend to...

- ▣ Only consider best-case scenarios
- ▣ Disregard “statistics” on actual success rate of previous similar attempts

Why?

- ▣ Because we do not consider unexpected events and random disruptive factors, which are **almost always** present
- ▣ As specific information on them is **unavailable**, we do not pay attention to them

In conclusion...

People tend to...

- ▣ Rely on immediate examples that come to mind when considering a situation / problem = AVAILABILITY HEURISTIC
- ▣ Make decisions based on this **immediate information**
- ▣ Which information is processed influenced by **context** (different **cues** remind us of different things)
- ▣ The cues may include attributes of the situation, of the present alternatives, of surrounding objects, previous events, inner states, etc.
- ▣ In addition, we seem to be “hard-wired” to pay more attention to certain pieces of information rather than others (information presented first, losses, beginnings and endings, unique features, etc.) – **systematic biases**

Availability heuristic

What the eye doesn't see the heart doesn't ache for.

(Czech proverb)

Additional materials

- ▣ **Before attempting the first quiz, watch the two videos available in the interactive syllabus in the IS:**

Dan Ariely's TED talk on decision making

Daniel Kahneman's TED talk on past, present and future selves

- ▣ **Recommended good reading on behavioural economics:**

Kahneman, Daniel: Thinking, Fast and Slow.

Ariely, Dan: Predictably Irrational.

Ariely, Dan: The Upside of Irrationality.

Next time: Dealing with emotion and motivation in behaviour



Thank you!