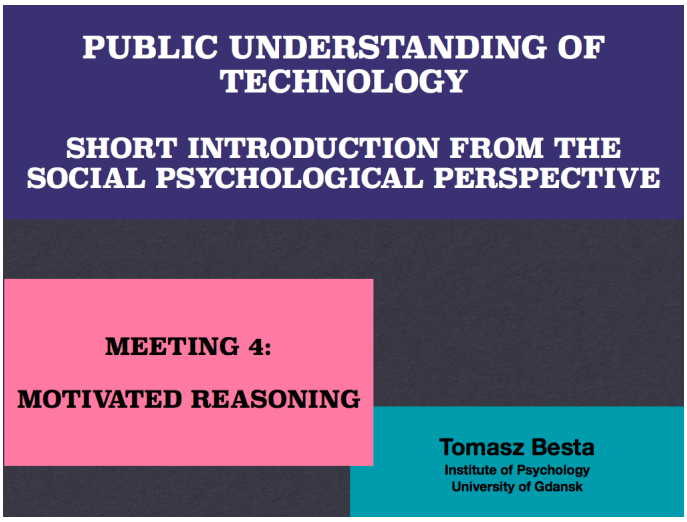

Meeting 4

Motivated reasoning

The fact that our beliefs, preferences, and ideologies distort our perception of the social world and our information processing is now a truism in psychology. Many studies show that individuals can view the same event or technology differently depending on their preexisting preferences, beliefs, or worldviews. For example, anyone who watches a football game with fans of both teams can observe this. Fans will claim that the referee is always unfair to their team and their opponent's goals were from offside positions. Classical psychological studies show that we process information based on our unconscious motivation to confirm our beliefs and to sustain our positive self-views. This effect is known as the **believing is seeing effect,** and the mechanism responsible for this is called **motivated reasoning**.

We, as a people, are very good at finding and concentrating on information that supports our position and avoiding or downplaying information that opposes our preferences or beliefs. That is, we do not process information in an objective, cold, rational way. Quite the opposite - **we process it with a tendency to adjust it to our needs**. And we hardly ever know that we do this. One striking example of this effect is in an fMRI study conducted by **Drew Western** and colleagues and published in the **Journal of Cognitive Neuroscience.** For the study, researchers chose people who declared themselves strong Republican or Democrat supporters. The task of the participants was simple. They were presented with statements from their party's presidential candidate (back then, they were Bush and Kerry) while their brains were scanned in fMRI machines. Psychologists were interested in

two things: first, if participants would notice the same amount of contradictions in the in-group and out-group politicians and second, how their brains would respond to the threatening information that their candidate could say one thing at one time and the next time say something totally opposite. The results confirmed the motivated reasoning mechanism: liberals saw more contradictions in the statements of the Republican candidate, and Republicans saw more in the liberal candidate. What is more, when researchers analyzed the brain scans, they confirmed that in the face of information that was threatening to the self, the brain areas responsible for rational processing of information were less active. In other words, **when the conclusions of people's thinking could be threatening to their beliefs and preferences, people think less rationally.**

Motivated reasoning:

- The unconscious tendency of people to fit processing of information to conclusions that suit their goal, while ignoring contrary data.

Mechanisms of motivated reasoning (by Dan Kahan):

- Identity-protective cognition - biased processing of information (tendency of people to react dismissively) when information could cause anxiety, dissonance or low self-esteem.
- Biased information search - concentration on the evidences that support one's beliefs.
- Biased assimilation - tendency to credit and discredit evidence selectively.

Another fantastic example of motivated reasoning is a recent study conducted by **Dan Kahan** and colleagues. They showed that this motivated processing of information is also predominant among people with high numerical and logical skills. Even they **rely upon simple heuristics when those heuristics lead to the answer that supports their preexisting beliefs (despite the fact that it is a wrong answer).** Researchers found that people are able to draw logical conclusions and give good answers if the topic of the task is a neutral one (for example, the effectiveness of a skin cream) but not if it is emotionally engaging and important to the self. Participants first completed numeracy and logical reasoning tests to check their numeracy ability, and then they were randomly assigned to one of four conditions. For the two neutral conditions, people were asked to determine if a skin cream was good or bad for a skin rash, based on data given. **Data were presented in such a way that using easy, heuristic thinking would lead to wrong answers**. The third and fourth conditions involved an ideologically and emotionally engaging subject: gun control. Republicans in the USA are generally against bans on guns, and they think that such bans would lead to an increase in crime. Liberals tend to support bans on guns and believe they would lead to a decrease in crime. The results showed that for the skin cream condition, everything was as it should be: more numerically astute people gave correct answers more often. But when the numbers provided in the mathematical task conflicted with people's beliefs about gun control, they could not do the math right - even those people with high numerical skills, liberals and conservatives alike. **The researchers used gun control and crime as their example, but those conclusions also apply**

to all subjects that are emotionally engaging and that people have strong feelings about, including biotechnology, nuclear energy, and so on.

The take-home message is that it is very hard to convince people to change their minds **when people have already strong beliefs about issues in dispute**. It is very hard to convince **even the people who have the ability to make inferences and draw logical conclusions from numbers and evidence and are scientifically literate**.

Recommended future readings:

Ditto, P. H., & Lopez, D. F. (1992). Motivated skepticism: use of differential decision criteria for preferred and nonpreferred conclusions. Journal of Personality and Social Psychology, 63, 568-584.

Kahan, D., Braman, D., Cohen, G., Gastil, J. & Slovic, P. (2010). Who fears the HPV vaccine, who doesn't, and why? An experimental study of the mechanisms of cultural cognition. Law and Human Behavior 34, 501-516.

Kunda, Z. (1990). The case for motivated reasoning. Psychological Bulletin, 108(3), 480-498.

Lord, C. G., Ross, L., & Lepper, M. R. (1979). Biased assimilation and attitude polarization: the effects of prior theories on subsequently considered evidence. Journal of Personality and Social Psychology, 37, 2098–2109.

Westen, D., Blagov, P. S., Harenski, K., Kilts, C., & Hamann, S. (2006). Neural bases of motivated reasoning: An fMRI study of emotional constraints on partisan political judgment in the 2004 US presidential election. Journal of Cognitive Neuroscience, 18(11), 1947-1958.