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Cognitive Offloading
How to Preserve Human Reasoning in an AI-dominated World?

Artificial intelligence (AI) as an integral part of our life seems to streamline daily life, including search queries, task performance, text, music, video and picture generation and even decision-making. Although most of the AI tools offer convenience and efficiency, the risk of cognitive offloading is higher than ever before. This psychological term is used for the process delegating cognitive tasks to external aids and assumed to result in diminished skills, declined critical thinking and in general as altered fundamental cognitive processes. The question often raised by researchers is weather any balanced AI usage is possible? Moreover, is the incorporation of AI essential for the advancement of our societies? Is the human intelligence at risk if AI takes it all? Is there a moderate use of AI with positive cognitive impact? If yes, how to learn it?

There are several questions and the presentation aims at answering some of them referring to reliable (means reproducible) research data when available. However, the most important issues are now just to discuss and discover a possible scenario seen from the perspective of cognitive psychology, neuroscience and educational sciences. The impact on the generation born after 2010, called alpha is known though not fully clear. However, the possible changes on those who are born after 2025, called as beta and are in cradle, can only be expected without any information on the further technological inventions coming.

The five topics in focus of the presentation are: (1) research findings on AI and critical thinking, (2) benefits and cognitive risks, (3) development of metacognitive skills to assess quality and reliability of AI-generated outputs, (4) mitigation of AI's cognitive costs; (5) implications for education