

Measuring the unmeasurable: Recent empirical research on imagination, mental imagery and human development

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The development of artificial intelligence can be seen as “thinking”—or signal processing—without accompanying mental imagery and imagination. This represents a potential turn in human evolution as thinking-like activities are unleashed without corresponding images. Arguably, the words of C.S. Lewis “men without chests” might be applied to this new form of information processing. One way to view this development is that this represents a call to action to better understand what internal, mental experiences are and how they relate to human development. Crucially, machines appear unable to experience mental imagery, which can be understood as a multimodal sensory-like simulation of external phenomena in the absence of the corresponding sensory stimulation. Accordingly, contrary to popular assumption, mental imagery includes, alongside visual experience, the other modalities of the classic five senses, plus at least balance, proprioception, and visceroreception. In our recent work, we have developed a performance-based measure of mental imagery as a multimodal sensory experience and have used this to investigate a range of phenomena. This research will be briefly described and encompasses: (a) how we measure mental imagery in our research, (b) the effects of screen media on children’s and adults’ mental imagery, (c) links between reading performance and mental imagery, (d) the role of mental imagery in the reading experience of literary texts, and (e) the phenomenon of aphantasia, whereby around 4% of people report no conscious mental imagery experiences at all. Implications for education and society are discussed.