Review of: "The Evolution of Consciousness Theories"

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This article discusses (some of) the evolution of theories of consciousness, mostly with regard to cognitive faculties such as attention, awareness, and intelligence, to bring about a discussion on the differences between the capabilities of living brains and minds and Artificial Intelligence. Conceptual underpinnings are brought forward, and the article provides multiple high-quality insights. The author's viewpoint on consciousness is discussed under the light of the Global Workspace hypothesis, initially brought forward by Changeux et al., among others. The paper nicely clarifies what makes a difference between natural cognitive capabilities and artificial intelligence. However, the concept of intelligence is multi-dimensional (this is not made very clear in the paper) and refers to many cognitive abilities that others (among them Gardner) have very well classified and explained previously. Consciousness, on the other hand, is under the consensus of the most recent theoretical efforts best described in terms of a continuous stream of mental energy and as the pre-requisite to the further development of intelligent capacity in the human species, beyond predictable limitations. While self-awareness is part of consciousness, it does not define the latter, nor does the concept of free will. Some neuroscientists (e.g., Libet, for example) have argued that free will does not exist. This argument is claimed (by the same authors) to be supported by experiments that seem to have shown that the brain thresholds of conscious decision making are attained in milliseconds and well before the decisions become consciously accessed. This would then imply, according to some (e.g., Pockett, for example), that consciousness is nothing but an epi-phenomenon. In transcendental Buddhism and recent research efforts on mindfulness, deep meditation, or mind-wandering, on the other hand, moments of pure consciousness are often described as states of total selflessness. These intriguing aspects are, unfortunately, left largely undiscussed in this work. Intelligence relates to cognitive abilities, while consciousness relates to the potential for further development thereof, as a uniquely human source of unlimited creativity and imagination beyond current capacity (intelligence). Finally, another issue that may deserve a clear stand when discussing the difference between natural forms of intelligence, human consciousness, and AI systems is the so-called category problem. The idea that AI may one day be able to emulate human intelligence and, ultimately, consciousness stems from an epistemological category error of the first order which consists of assimilating the biological ("natural") brain to an open physical system. This category error is frequently made by physicists and engineers. It constitutes, indeed, the root cause of most of the current misunderstandings about the human brain, intelligence, and AI. This being added, congratulations on an excellent piece of work!