

Next-generation approaches to machine consciousness

After a general discussion of the enterprise of
machine conscio

response. If this predicted sensory input is used a

organism, both actual and projected, are central to the long-term viability of, and the development of the capacities of, the organism. Some researchers in machine consciousness seek to develop this idea with reference to the ideas of Antonio Damasio.

According to Damasio, emotion is not only central to reasoning (Damasio, 1994) but to the generation of what he calls core consciousness (Damasio, 2000). On Damasio's account, core consciousness emerges for an organism as it becomes able to detect that its core body state has been changed by some incoming stimulus. The reactive component of the organism's neural representation of such a stimulus is conceptualized as an emotion. Bosse, Jonker, & Treur (2005, this volume) formalize this theory into a model expressing temporal and causal dependencies using their Temporal Trace Language (Jonker & Treur, 2002). Their formal model also predicts the possibility of "false core consciousness", where an effect is attributed to the wrong body stimulus.

Aleksander et al. (2005, this volume) build upon Damasio's model in order to understand a key point of discussion in the (natural) consciousness literature, that is, accounting for the reality or otherwise of "the will". Since the publication of Libet et al's (1983) finding that a neo-cortical readiness potential precedes the ability of a subject to attest to willed action, the folk conception of volitional action has been called into question. One radical sceptic (Wegner, 2002) has recently argued that Libet's findings should be interpreted as showing that an unconscious cortical event controls both the "willed" action itself and the conscious s

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to the idea of the self – cannot be derived from static sense data alone. They argue that the self depends on and must be understood in terms of the emergence of the distinction between self and world. Inspired by Gibson's (1962) cookie-

which is seen by many as blocking physicalistic attempts to explain the nature of phenomenal consciousness. Torrance suggests that there is a defective concept of consciousness underlying this gap – ‘thin phenomenality’ as he calls it – which is also shared by many of those who think the gap can be bridged, including many machine consciousness researchers. An alternative, ‘thick’ conception of phenomenality is proposed, which takes ideas of autopoiesis, lived embodiment and other related ideas as its starting point.

6 Heterophenomenology

It seems undeniable that phenomenological reports are a valuable source of data concerning consciousness.

(Chrisley, 199

8 Second-person approaches and neurophenomenology

The term 'neurophenomenology', (originating, like the 'enactive' approach, with Varela (1996; see also Thompson, Lutz and Cosmelli, 2005)), denotes the fusion of hermeneutic philosophy with rigorous empirical methods in neuroscience. A key element in neurophenomenology is the use of syste

taking as his point of departure discussions that have already been initiated between cognitive scientists and lawmakers in the United States.

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