Mechanism, Computational Structure and Representation in Cognitive Science

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Abstract

We propose that the mechanistic view of concrete computation can be useful in solving some of the philosophical problems at the foundation of cognitive science, and in particular that of representation. I argue that at least for one important kind of theory of representation in cognitive science, i.e. structural representation, the mechanistic view of computation may help solve, or dissolve, traditional metaphysical problems. Structural representation is based on the idea that representations represent what they do by virtue of instantiating the same relational structure, i.e. by being structurally resemblant to what they represent. One natural way to cash out the relevant relational structure of representational vehicles is in terms of computational structure. A representation would thus represent all the entities in the world that share its (computational) structure. I argue that uniting the mechanistic view of concrete computation with a structural account of representation helps to give both notions — computation and representation — a respectable philosophical standing in cognitive science. In particular, I argue that this combination of views allows 'deflating' representational content in a way that nonetheless preserves the explanatory purchase that the notion of representation is supposed to have in cognitive science.

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