

Reasoning at a Distance by Way of Conceptual Metaphors and Blends

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Abstract

Cognitive scientists of the embodied cognition tradition have been providing evidence that a large part of our creative reasoning and problem-solving processes are carried out by means of conceptual metaphor and blending, grounded on our bodily experience with the world. In this talk I shall aim at fleshing out a mathematical model that has been proposed in the last decades for expressing and exploring conceptual metaphor and blending with greater precision than has previously been done. In particular, I shall focus on the notion of aptness of a metaphor or blend and on the validity of metaphorical entailment. Towards this end, I shall use a generalisation of the category-theoretic notion of colimit for modelling conceptual metaphor and blending in combination with the idea of reasoning at a distance as modelled in the Barwise-Seligman theory of information flow. I shall illustrate the adequacy of the proposed model with an example of creative reasoning about space and time for solving a classical brain-teaser. Furthermore, I shall argue for the potential applicability of such mathematical model for ontology engineering, computational creativity, and problem-solving in general.

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