
Consciousness: A Connectionist Perspective

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DEDICATION

To my father, who got me thinking, and to Tricia, who provided the love, support, and encouragement that enabled me to see this through.

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ABSTRACT

Cognitive scientists seeking a computational account of consciousness almost universally opt for a *process* theory of some kind: a theory that explains phenomenal experience in terms of the computational processes defined over the brain's representational vehicles. But until recently cognitive science has been dominated by the *classical* computational theory of mind. Today there is a new player on the scene, *connectionism*, which takes its inspiration from a computational framework known as *parallel distributed processing* (PDP). It is therefore appropriate to ask whether connectionism has anything distinctive to say about consciousness, and in particular, whether it might challenge the dominance of process theories.

I argue that connectionism has the resources to hazard a *vehicle* theory of consciousness. A vehicle theory places consciousness right at the focus of cognition by identifying it with the explicit representation of information in the brain. Classicism can't support such a theory because it is committed to the existence of explicit representations whose contents are not phenomenally conscious.

The connectionist vehicle theory of consciousness aligns phenomenal experience with stable patterns of activation in neurally realised PDP networks. It suggests that consciousness is an amalgam of phenomenal elements, both sensory and non-sensory, and the product of a multitude of consciousness-making mechanisms scattered throughout the brain. This somewhat unorthodox picture is supported, I claim, by careful analysis of experience, and by the evidence of the neurosciences.

One obstacle facing this account is the apparent evidence, both direct and indirect, for the activity of unconscious explicit representations in human cognition. I establish that much of the direct evidence for this thesis is open to doubt on methodological grounds. And studies that support the dissociation thesis *indirectly*, by way of an inference to the best explanation, are vulnerable to alternative connectionist explanations of the relevant phenomena.

What is most significant about the connectionist vehicle theory of consciousness is not the fact that it's a *connectionist* theory of consciousness, but that it's a *vehicle* theory - an account which takes cognitive science into largely unexplored territory, but in so doing brings into clearer focus the issues with which any theory of consciousness must contend.

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