

# Cognition without Content

Paul Schweizer

School of Informatics, University of Edinburgh, Scotland

[paul@inf.ed.ac.uk](mailto:paul@inf.ed.ac.uk)

## Abstract

According to the traditional conception of the mind, semantical content is perhaps the most important feature distinguishing mental from non-mental systems. And this traditional conception has been incorporated into the foundations of contemporary scientific approaches to the mind, insofar as the notion of 'mental representation' is adopted as a primary theoretical device. On Fodor's Language of Thought hypothesis, symbolic representations are posited as the internal structures that carry the information utilized by intelligent systems, and they also comprise the formal elements over which cognitive computations are performed. But a fatal tension is built into the picture - to the extent that symbolic 'representations' are formal elements of computation, their alleged content is completely gratuitous. Computation is essentially a series of manipulations performed on *uninterpreted* syntax, and formal structure alone is sufficient for all effective procedures.

Fodor argues that the brain-like architecture of connectionist networks tells us nothing about their suitability as models of *cognition*, since it still leaves open the question of whether the mind is such a network at the representational level. A number of connectionists have taken up the challenge and seek ways of projecting representational content onto artificial neural networks. One such attempt uses cluster analysis to locate 'vehicles' of content. I argue that such attempts suffer from exactly the same tension that afflicts the LOT model - the purported content for which the clusters serve as vehicles does no work in the processing path leading from inputs to outputs. I argue that the computational paradigm is thematically inconsistent with the search for content or its supposed vehicles. Instead, computational models of cognition should be concerned only with the *processing structures* that yield the right kinds of input/output profiles, and with how these structures can be implemented in the brain. When it comes to computation and content, only the vehicle is required, not the excess baggage.