NATURALISING INTENTIONALITY: STRUCTURAL ISOMORPHISM
AND THE DETERMINATION OF MENTAL CONTENT

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ABSTRACT

A resemblance theory of the intentionality or contents of mental states is almost universally assumed a non-starter by contemporary philosophers. My overall aim in this work is to show that a revised version of the resemblance theory termed the structural isomorphism theory of content determination (TCD) presents a viable – indeed, highly competitive – alternative to the orthodox theories. The structural isomorphism TCD operates with a second-order isomorphism: the values of a represented feature are systematically reflected by variations in a non-equivalent physical feature of a representing system. A physically structured neural representing system represents a variable by virtue of mirroring its structure. I begin with an overview of representationalism, and how two traditional problems with the resemblance theory can be overcome. The work then divides into three main, overlapping parts. First, I pit the structural isomorphism TCD against the “orthodox approach” to a particularly recalcitrant problem, that of accommodating misrepresentation. I show how the orthodox TCD fail to resolve the problem of misrepresentation, and develop an alternative approach with structural isomorphism at its heart, one which provides a natural and principled means of accommodating misrepresentation. The middle part of the thesis investigates the notion of second-order isomorphism at length, weds the structural isomorphism theory to a “microcontent” conception of mental content, and defends structural isomorphism against the charge of content indeterminacy. Two domains of representational activity – temperature and colour – are employed to argue against the standard externalist account of content determination, and for a significant re-conception of mental content in terms of a notional world, a world as-represented. In the final part I investigate the prevailing assumption that content determination is orthogonal to cognitive science. I show that while classicism is not committed to a particular TCD, the orthogonality assumption is false of connectionism. Structural isomorphism is the mechanism which “disciplines” the processing of representation bearers in connectionist systems. Structural isomorphism, that is, renders connectionism a computational framework, and so connectionism is committed to
the structural isomorphism TCD. Overall, structural isomorphism articulates a perspective on content determination which accords a crucial role to the physical properties of mental representation bearers themselves.