

COMPUTATIONAL TRANSLATION IS THE TRANSLATION OF WHAT?: PHILOSOPHY, COMPUTATION, AND THE BIOLOGICALLY REAL

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The philosophy of computation has raised questions about the epistemological and ontological status of computational renditions of the real. Between thinking of computation as the translation, or description, or representation *of* the biologically real, and thinking of it as the construction of, or manipulation of, and/or intervention *upon* the real, significant epistemological and normative questions emerge. Similarly, philosophers of technology have raised questions regarding how the underlying political economy of digital devices, production, and distribution might influence the ways in which computational models of the biological are deployed across a wide range of related and, therefore, mutually reinforcing fields: in biology, medicine, computing, imaging, aesthetics, information technology, and engineering. Thus, between thinking of computation as an innocent, or objective, or neutral, form of representation, and thinking of it as a profit-motivated, production-oriented, and device-driven form of economic behavior, significant questions emerge. The philosophy of computation and philosophy of technology together suggest, therefore, that we pursue further three related questions: computational translation is what kind of translation, for what purposes, and with what trade-offs? They further suggest that cross-disciplinary dialogue across the boundaries of philosophical analysis, computational theory, and biology would prove mutually informative to these respective and related fields.

Exemplar: As a way to focus these issues, we should consider some of the ways the fMRI operates to make brains available for biological and medical inquiry and intervention: now colored and statistically tidied with the help of a large and complex caste of algorithms that do much more than merely capture data. They help construct properties of the 'real' that are otherwise not there at all, or at least not available except insofar as they are translated and converted into data, made visible, and normed according to computational (and other) principles and conventions that are not themselves identical to the biological processes they purport to capture. In effect, medicine is increasingly dependent upon a series of informational and translation assumptions regarding the functions and meanings of biology generally and the brain in particular that are available only as a *result* of the production of data, which are in turn made possible by algorithms and the devices that deploy these algorithms. Ontology has thus become increasingly understood as a function of what computation can confirm or alter and enhance, and in relation to devices and appliances that function as part of a lucrative informational economy, in terms of which science plays a rather ambivalent and sometimes insufficiently critical role. This exemplar raises a cluster of questions in need of further discussion: computation is what kind of translation?; what do its terms assume?; to what practices and for what purposes is the body being lent as a result? In effect, what are the implications—epistemological, ontological, and normative—of some computational practices of translation?

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