CONCEPTUAL FRAMEWORKS AND INTERDISCIPLINARITY: MODELLING AGEING POPULATIONS

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Abstract

A hard problem facing interdisciplinary scientific collaboration is communicating across disciplines. We examine this challenge using the case of a project building models by merging social science and complexity science expertise. We discuss how divergent epistemic practices between demography and complexity science affect this collaboration.

We focus on significant conceptual barriers to combining demographic methods with complexity science simulation techniques. Even though both disciplines claim expertise in 'modelling' social systems, there is a significant divergence between considering models as a means of theory-formation and models as a means of prediction. This creates a communication gap between demographic and complexity-science portions of the project, overcoming which demands re-interpreting and re-positioning one's practice on subjects even as simple as what a 'model' *is* (or what it is *for*).

This seems to us an instance of a deep and important philosophical problem. Interdisciplinary work-spaces can produce conceptual trading zones that allow for the formation of new and useful ideas. However for any sensible interdisciplinary *science* to truly begin, concepts founded differently across different research streams and disciplines may need to be unpacked and investigated, and even re-defined or re-named.

Creating new modelling tools in this context involves creating new ideas about modelling. The search for shared disciplinary ground is being progressively pushed back from superficial similarities in shared vocabularies to an investigation, selective challenge and re-formulation of assumptions that shape models at levels prior to the production of any one simulation technology. In that sense, creating interdisciplinary science is an intrinsically philosophical enterprise.