

Talking About ABSS: Functional Descriptions of Models

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Abstract

How much of the literature on social simulation is about modelling for modellers? Conversely, how much of the literature is directly about the world in which we live – that is, about society? As of the turn of October, 2006, the 20 most frequently downloaded papers in the flagship journal of the field, *JASSS* included a couple of reviews, 13 papers that cited no direct evidence and five that did report and use qualitative and/or numerical evidence. By way of comparison, the leading economics journal *Econometrica* at the same date listed among its 20 most frequently cited papers, seven papers (including the single most frequently cited paper) that reported and used empirical evidence. While the comparison is by no means exhaustive or definitively scientific, it does not indicate an extravagant interest in empirically based, descriptive modelling amongst leading ABSS researcher. At the very least, it is not obvious that social simulation modellers value empirical studies more than conventional and traditional social scientists. Our models are sometimes more complicated but, even then, simplicity is still seen as a virtue.

There certainly are model-based empirical studies. The work of Francois Bousquet and his colleagues (*e.g.*, [Barreteau et al., 2001][Barreteau, 2003][Becu, 2003]) shines out like a good deed in a naughty world. The market studies of Kirman [Weisbuch, 2000][Kirman, 2001] and then Rouchier are also powerful and remarkable. I would claim some contributions from the Centre for Policy Modelling as well, taking pride in my own paper [Moss, 1998] on critical incident management produced nearly a decade ago as well as work with Tom Downing on water demand and water resource [Downing et al., 2000] and, in particular, the development of that work by Olivier Barthelemy Barthelemy [2006] to assess UK Foresight scenarios incorporating representations of innovation.

Evidently, while there are empirical papers of which we, as a research community, can and should be proud, the bulk of the work in ABSS is abstract. The abstract models are sometimes intended to reflect some aspect of reality and sometimes to prepare the way for a new kind of social theory and sometimes just to explore the characteristics and robustness of modelling approaches. Without shame, I take the view that the only meaningful purpose of social science is to understand society and social processes thereby to inform social and related policy formation. Producing and understanding modelling techniques to support that objective is clearly important. But producing and understanding modelling techniques that have no relationship to society and real social processes is, I submit, mere self-indulgence. To absorb resources for such self-indulgence that might otherwise be used for empirically and socially valuable development is a scandalous waste.

These issues are epistemological in nature. What knowledge do we seek? What do we know? Why do we think that we know it?

If the knowledge we seek is knowledge about models or modelling technique, then it is hard to see that what we know will be of any wider social value. Because a model space (in the sense described in this paper) is narrowly circumscribed, we can explore that space extensively and, as a result, convince ourselves and others interested in that space that we do indeed know a lot about it. The issue is much more difficult when we turn to human societies.

The whole question of the value of modelling for modellers is not often addressed in the ABSS literature. Perhaps this is because we have not developed a basis for that discourse. Perhaps the

basis for discourse has not developed because the issue has not been deemed sufficiently important. Whether the absence of discourse is one, the other or some combination, the purpose of this paper is to raise the question of the value of modelling without direct empirical input. In fact, as modellers we are collectively rank amateurs in comparison with economists or physicists who do physics (as distinct from physicists who do social science). To see the difference in sophistication and detail of the models and the techniques for analysing model properties, have a look at the 20 most frequently cited papers in *Econometrica* at www.blackwell-synergy.com/loi/ecta. Comparing JASSS with *Econometrica* makes social simulation look primitive. Where ABSS papers in JASSS and elsewhere look good (at least to me) in comparison with papers in *Econometrica* and other social science journals is where the ABSS models are evidence driven.

If these observations have any validity, then a key epistemological question for social simulation modellers and users is whether the bulk of ABSS papers that are not empirically driven are likely to inform or even to provide the foundations for empirically driven social simulation models.

The purpose of this paper is to propose a framework within which to couch a discourse on that issue. To achieve that purpose, I will describe the framework and then consider within that framework an example of a discourse about models for modellers and to suggest why, in that case at least, the modelling is not clearly useful in understanding the social processes that are purportedly represented.

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