

A Classification of Paradigmatic Models for Agent-Based Social Simulation

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Abstract. Given the strong interdisciplinary character of Agent-Based Social Simulation (ABSS), and the difficulties related to ambiguous terminological and methodological assumptions, there is an increasing need to make more explicit the modelling paradigm underlying each research paper or project. In this paper we propose a classification of paradigmatic models in ABSS, which characterise different ontological assumptions and pragmatic criteria with respect to their targets. The classification is composed by different classes of models at different levels of abstraction, in a layered architecture that enables switching among levels. Each class is based on different kinds of assumptions, which possibly call for different logics of scientific research. The present proposal is interesting, since the taxonomy was well validated with researchers in the field. It is a good analytical tool to characterise or compare models according to various criteria, such as methodological, philosophical, or simply pragmatic and usability criteria.

1 Introduction

After the consolidation of the multiagent paradigm in artificial intelligence, the role of Agent-Based Social Simulation (ABSS) has been acquiring importance in a large range of scientific fields, such as the social and natural sciences. Some indicators are the profusion of conferences, workshops and journals in the area, like the series of ICMAS/AAMAS workshops on Multi-Agent-Based Simulation and the Journal of Artificial Societies and Social Simulation. In particular, the sources of analogy

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