Forum ReSoc
Agent-based Models in Archaeology: Are there Limits?

21st March 2019

Haus der Archäologien, Am Bergbaumuseum 31, 44791 Bochum

Abstract

Agent-based Modelling (ABM), a simulation method that allows modelling the interaction of individual "agents" in explicit space and time, is recently gaining momentum in Archaeology (Rogers & Cegielski 2017, Lake 2014). Proponents of ABM emphasize that it allows representing archaeology's full complexity (Barceló & Castillo 2016). At the same time, the preconceptions that are often associated with formal modelling are amplified by ABMs (Cegielski & Rogers 2016). One may summarize these preconceptions with the claim that ABMs make too many assumptions about things you cannot know. Should this methodology be rejected, if so many ad-hoc assumptions are necessary? Quite the opposite argues Edmund Chattoe-Brown (2013, §9.1): "ABM gives us a perspective from which to unpick preconceptions (based on existing research methods)". Especially in situations where we do not have enough evidence yet – and probably never will – using ABMs can be paramount as a tool for theory building: "models are not depictions of reality, but formal thought experiments designed to test and explore specific research questions" argue Drost and Vander Linden (2018).

Barceló JA & F del Castillo (2016): Simulating the Past for Understanding the Present. A Critical Review. Chapter 1. In JA Barceló, F del Castillo (eds.): *Simulating prehistoric and ancient worlds.* Springer.

Drost CJ & M Vander Linden (2018): Toy Story. Homophily, Transmission and the Use of Simple Simulation Models for Assessing Variability in the Archaeological Record. In *Journal for Archaeological Method and Theory* 122 (2): 1087–1108.

Chattoe-Brown E (2013): Why Sociology Should Use Agent Based Modelling. In *Sociological Research Online* 18 (3): 1–11.

Cegielski, Wendy H.; Rogers, J. Daniel (2016): Rethinking the role of Agent-Based Modeling in archaeology. In *Journal Of Anthropological Archaeology* 41: 283–298.

Lake, M. W. (2014): Trends in Archaeological Simulation. In *Journal of Archaeological Methodology and Theory* 21 (2): 258–287.

Rogers, J. Daniel; Cegielski, Wendy H. (2017): Opinion. Building a better past with the help of agent-based modeling. In *PNAS* 114 (49): 12841–12844.

More Information at forum.resoc.de

PROGRAM

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h. 14.00   Welcome

h. 14.10   Introduction
            M.Gori & F. Schaff (Ruhr-University Bochum)

h. 14.30   Toughening the Methodology of Agent Based Modelling by Working
            Across Disciplines
            Edmund Chattoe-Brown (University of Leicester)

h. 15.15   The Fallacy of Holism: Views on Practising ABM in Archaeology
            Marc Vander Linden (University of Cambridge)

h. 16.00   Podium Discussion
            Edmund Chattoe-Brown (University of Leicester)
            Marc Vander Lindern (University of Cambridge)
            Maria Ivanova-Bieg (University of Heidelberg)
            Iza Romanowska (Barcelona Supercomputing Center)
            Michael Roos (Ruhr-University Bochum)
            Moderation: Maja Gori & Frederik Schaff (Ruhr-University Bochum)

h. 16.30   Open Discussion

h. 17.00   Reception

Organised by Maja Gori & Frederik Schaff