

## Assessment of Simulation in Sociology, Moretti (2002)

In this paper, the author states that cellular automata is a special case of multiagent system. In the setting of the cellular automata method, agents have a specific and determined position and are homogeneous in the behavior and modality of interaction (Moretti, 2002, p47). Considering the validity of these two techniques of simulation, there are mainly two limitations mentioned in the paper. The first weakness revolves around the synchronous updating issue. In the real world, all agents behave at different moments. However, in the cellular automata model, all cells update simultaneously according to one specific global clock. This contradiction of the model setting and reality condition would seriously weaken the final result, especially in the study of physics and natural sciences. Spatial structure is another issue. It is reasonable that people only interact with others in a restricted spatial area. However, in the model, the restriction is only imposed on geographical separation. Yet in the real world, with the introduction of media, people physically distant from the others could also have connection. Besides, neighborhood might change, which should also be taken into consideration in the model.

In the conclusion part of this paper, the author strengthens the point that the most essential part of computer simulation techniques is its ability to include the dynamics of social phenomena (Moretti, 2002, p54). From the whole paper, we can detect some examples of the sociology research manifesting this "dynamic feedback" characteristic. One of them is the study of "how cultures emerge and transform out of vast number of micro-interactions entailing the diffusion or disappearance of cultural fragments" (Moretti, 2002, p48). In this study, the natural selection system could be viewed as the basic and also initial invisible stimulus to the emergence of cultures. Through the subsequent process, human population was reorganized in systems with different cultural factors, like religions and customs. From this point, conservation of ideologies exist and contributes to the functionality of social systems.

The study of the relationship between political leadership and policy decisions also entails this "dynamic feedback" trait. The more specific expression of this political science question is: How would a president's personal characteristics influence foreign policy decision? In this research, the initial stimulus is the president election. The president's personality could affect the whole political realm, which has the power to fix the foreign policy or has the effect on the whole policymaking processes. This underlying system could be interpreted as "dynamic feedback".

## **References**

**Moretti, Sabrina**, "Computer Simulation in Sociology: What Contribution?," *Social Science Computer Review*, Spring 2002, 20(1), 43-57.