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Vincent Buskens, Werner Raub, and Marcel A. L. M. van Assen (eds.), *Micro-Macro Links and Microfoundations in Sociology*. London: Routledge, 2011, 247 pp.

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Book reviews

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Originally published as a special issue of the *Journal of Mathematical Sociology* in 2011 and edited by Werner Raub, Vincent Buskens and Marcel A. L. M. van Assen, this book includes eight high-quality contributions that look at social outcomes at a micro level. It includes some star sociologists, such as Karl-Dieter Opp, Dirk Helbing, and Michael Macy, and touches upon interesting sociological topics, such as cooperation, social groups, networks, residential segregation, and culture dynamics. Moreover, the editors provide an excellent introduction, which pinpoints the most important aspects of the dependence of macro social outcomes on micro behaviour in sociology. In this way it avoids one of the typical problems in similar collections, i.e., no big picture. The book therefore stimulates debate on the current state of sociology.

Largely inspired by Coleman's well-known scheme of the micro-macro link, the editors's introduction emphasises the advantages of analytical rigour and formal modelling for empirically testable implications from micro assumptions. The editors have identified five key-points of sociological investigation: the influence of certain macro-level conditions in determining macro outcomes; the centrality of micro-foundations, the importance of abstraction, the idea of keeping the micro behavioural assumptions simple in order to concentrate on the complexity of structural factors and the importance of looking at various forms of interdependence between agents.

Although I agree with this programme, I would also like to emphasise certain aspects that presently have been poorly elaborated. The editors take Coleman's line in arguing that individual behaviour is more predictable than social outcomes and consequently it can be used to build sociological models. They fully shared Coleman's view on the primacy and generalizability of rational choice theory for sociology. This is confirmed by one of the most important contributions of this book, the last chapter, where Karl-Dieter Opp defends and even expands this approach in sociology.

This position is perfectly respectable but it is a pity to see that certain important aspects of human behaviour from recent advances in experimental behavioural sciences, neurosciences, cognitive sciences, and evolutionary biology, have not been considered. There is indisputable proof that human behaviour is more heterogeneous and context-dependent than considered solely by rational choice theory. On the one hand some contributions have tried at least to drastically distinguish rationality from self-interest (e.g., the second chapter by Simon Gächter and Christian Thöni, who incidentally are the only non-sociologists in this book). However, this is not sufficient as most studies in this field have emphasised the role of emotion, habit, heuristics, unconsciousness, past experience and neurological factors in moulding individual behaviour.

Influenced by the recent global financial crisis, even economists have contemplated the possibility of individual behaviour that moves away from rational choice. An example is the upsurge of studies in empirical and behavioural finance, which outlines the key-

importance of complex psychological, interactional and normative factors to understand market behaviour. Numerous experimental studies have confirmed that rational choice theory has more a normative than an explanatory value. Even in certain related fields, such as analytical sociology and social simulation, which are close to this approach, many sociologists have reconsidered the supremacy of rational choice and the lack of integration between this theory and empirical observation, which is one of the main challenges in our discipline.

Indeed, accepting the primacy of rational choice as a model of individual behaviour in social interaction is not only a choice of parsimony, guided by pragmatism, as suggested by the editors, and Coleman first and foremost. It is a theoretical choice, which may have serious implications for sociology. For instance, one of these is the sociologists' disinterest towards the recent advance of other disciplines, which could offer, a more sociologically-friendly picture of human behaviour.

Obviously, this criticism does not disqualify the importance of this book. However, I hope that, in the future, more attention will be paid to these related fields. For a number of reasons (e.g., historical, socio-cultural, technological), human behaviour is now a puzzle investigated from many different angles and by many disciplines. As such, disciplinary self-reference and theoretical path-dependence are low-payoff strategies for the discipline.

The other contributions range from experimental and simulation research to theoretical work. I found the chapter by Simon Gächter and Christian Thöni especially interesting, as they illustrate both past and present experimental work on voluntary cooperation and discuss the importance of pro-social motives, reciprocity and social sanctions for wage formation in labour markets. They provide a complete overview on the state-of-the-art in this field and show that laboratory experiments can help to disentangle social mechanisms and isolate possible causal effects, including the influence of social structures on individual behaviour. Their work is a good example of how to circumscribe self interest so that rationality does not totally conflate with it. Furthermore, it shows that experimental research could even nurture constructive links between economics and sociology in studying labour markets or in general collective action.

There are some more theoretical chapters, such as that on the role of population heterogeneity by Kazou Yamaguchi and another on the structural balance in friendship networks by Arnout van de Rijt, not to mention on rational choice by Karl-Dieter Opp. I found the three chapters by Mark Fossett, Andreas Flache and Michael M. Macy and Dirk Helbing, Wenjian Yu, and Heiko Rauhut extremely stimulating as agent-based models have been used to explore micro-macro aspects. They show that computer simulation can help sociologists to map the complexity of the micro-macro link.

Mark Fossett provides an impressive collection of simulation results on residential segregation dynamics that extends Schelling's original model in various directions. He shows the potential of a generative approach to explain social outcome and gives a good example of how to combine quantitative and qualitative aspects through modelling.

Andreas Flache and Michael M. Macy elaborated Granovetter's work on "the strength of the weak ties" and studied the effect of micro and macro changes in social networks on cultural polarisation. They examined the influence of positive and negative ties for cultural diffusion and integration. They showed that investigation should

not overestimate the integrative effects of greater cultural contact and that agent-based models can illuminate important social issues, such as xenophobia and social fragmentation.

Finally, Dirk Helbing, Wenjian Yu, and Heiko Rauhut presented a model of co-evolution of social environment and cooperation, examining specifically social mobility conditions and the importance of imitation. Their model looks at the dynamic interplay of micro and macro levels, so providing a great example of the potential of simulation technologies to help extend sociological observation.

To conclude, this book is highly recommended to everyone interested in sociology as a theory, modelling-oriented enterprise. The challenge of exploring empirically calibrated micro-foundations and confronting sociological investigation with recent advances in various disciplines studying human behaviour has not been looked at. However, the reader will still find some valid contributions available today in our discipline.

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