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Socio-dynamic discrete choice: Theory and application

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Citation for published version (APA):

Dugundji, E. R. (2013). *Socio-dynamic discrete choice: Theory and application*.

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PREFACE

When I first started graduate research at the Universiteit van Amsterdam, I had various ideas, many of which still remain close to my heart. My dissertation has ultimately ended up focusing on the right hand portion of Figure 0.1, “Conceptualizing micro-macro relations,” excerpted from one of my early conference papers, *The Long-term Effects of Multi-modal Transportation Networks: The Residential Choice Behavior of Households*, appearing in the Proceedings of the 9th World Conference on Transportation Research, Seoul, Korea. This dissertation thus focuses on the demand side of the picture. It is non-trivial to make the supply-demand link at the micro level, at the macro level, and perhaps especially the micro-macro link at the supply side.

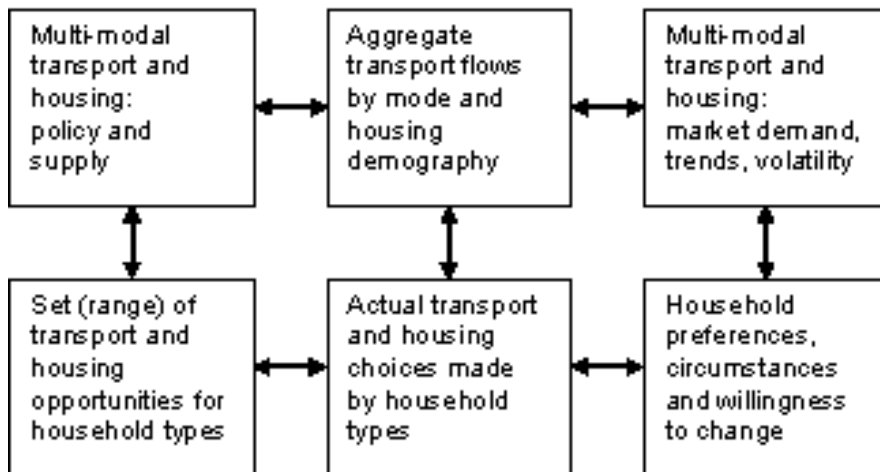


Figure 0.1: Conceptualizing micro-macro relations in transportation and residential choice modeling.

Even within the right hand portion of the figure, I have made further limitations in the scope of the PhD research. For example, I have focused only on questions regarding travel demand endogenously, leaving housing demand exogenous. In the context of social influence, there is a critical distinction which makes for example transportation mode choice different from residential location choice: whether you choose to commute to work by car or by public transit has no effect on who your neighbors are; where you choose to live has a direct effect on who your neighbors are. If neighbors are a source of social influence, one choice (transportation mode) involves a static influence

network with respect to the choice; the other (residential location) involves a dynamic influence network with respect to the choice. The study of dynamically changing choice behavior on a network which is itself changing is an extremely interesting question. But to in order to understand this, I chose to first get a better grasp on the dynamically changing choice behavior on a static network. Treating dynamic networks endogenously is something I am keen to pursue in the future, potentially facilitated by the steadily increasing volume of personal electronic trace data.

I have many people to thank, first and foremost, my current primary supervisors, Harry Timmermans and Cars Hommes, and former supervisors, Frank le Clercq and Loek Kapoen, for supporting me in various ways, believing in me, and making my research position possible, as well as external supervisor Joan Walker and long-time colleague László Gulyás for their kind collaboration on specific sections of the thesis, respectively econometric estimation and multi-agent based simulation. I would also like to thank Theo Arentze and Antonio Páez for their collaboration in guest editing journal special issues, and additionally Jianquan Cheng, Xinyu Cao, Kay Axhausen, Juan Carrasco, Fabrice Marchal, Hitomi Nakanishi, and Darren Scott for collaboration with coordinating conference workshops. I would like to thank Zuzana Sasovova, Aljaz Ule, Tuire Palonen, Koen Veermans, Peter Groenewegen, Gerhard van de Bunt, Maurits de Klepper, Karin Pfeffer, Els Veldhuizen, for their collaboration in teaching as well as Judith Schoonenboom for introducing me to the fine points of pedagogy, and ICT and education experts Arjan Sas, Wies Verschoor, Wessel Kieft, Frank Hamers, Auke Hamers, Jaap Tuyp, Werner Degger, Erik Boon for their wonderful technical support.

I would like thank the educators of semester-length course modules over the years that greatly inspired me, Arjan Doelman (Introduction to Dynamical Systems, Universiteit van Amsterdam), Moshe Ben-Akiva (Demand Modeling 1.202, Massachusetts Institute of Technology), Steve Borgatti (Social Network Analysis MB874, Boston College), Xiaogang Wen (Statistical Physics 8.08, Massachusetts Institute of Technology), as well as Jordan Louviere and David Hensher for hosting me in Sydney as a graduate student first getting my feet wet with estimating choice models, Kathleen Carley for opening my eyes to the realm of possibilities of network analysis coupled with population-scale simulation at the CASOS Summer School, Carnegie Mellon University, and Axel Leijonhufvud, Robert Axtell and Masanao Aoki for introducing me to adaptive economic processes at the CEEL Summer School, Università degli Studi di Trento.

I would like to thank Yoshitsugu Hayashi, Kenji Doi, Huapu Lu, Haijun Huang, Yanwei Chai, Long Tao, Xuewu Chen, Renting Xu, Donggen Wang, Zhengdong Huang, Ningrui Du, Qiong Wang, Jin Kun, David Lazer, Ines Mergel, Rich de Jordy, Jegoo Lee, Luca

Bertolini, Marco te Brommelstroet, Andrew Switzer, Julie Birkholz, Ate Poorthuis, Michiel van Meeteren and Kwan Hong Lee, for project collaboration and support.

I would like to thank people at the Department of Geography, Planning and International Development Studies at the Universiteit van Amsterdam (UvA) who helped me in many ways with key logistical matters, large and small, over the years, Joos Droogeleveer Fortuijn, Len de Klerk, William Salet, Barbara Lawa, Gert van der Meer, Carina Muliee, Johan Post, Marco Bontje, Jan Hartmann, Evert Verkuilen, Puikang Chan, Marianne van Heelsbergen, Guida Morais, Clinton Siccama, Tineke van Gelder, Karin Retèl-de Groot and Marjolein Berntsen. I would like to thank Tina Zettl, Gimene Spaans, Ernst Berkhout, Michel Hageman, Marcel Heemskerk, Willem Kox, Wim de Lange and Loes van Dort, as well as UvA Facility Services and the Meldkamer, for technical and institutional support in running initial simulations in the student computer halls during nights and weekends at the Roeterseilandcomplex. Special thanks go to Guus Brohm, Yvon Weening, Nelly Kalfs and Hans Niepoth of the Agency for Infrastructure, Traffic, and Transport (dIVV) of the Municipality of Amsterdam for assistance with data, and to Willem Vermin, Bert van Corler, Lilit Axner, John Donners, and the High Performance Computing support team of SURFSara Computing and Networking Services, Sciencepark Amsterdam. I am very grateful to Daan in 't Veld at the Department of Quantitative Economics at the UvA for his kind translation assistance with the Dutch samenvatting. I would also like to thank David Evers, Julie Lawson, and Ad de Bruijne, for their positive spirit in making the UvA an extra nice place to be.

I would like to thank Patty Fiorenza, Sarah Trainor, and my sister, Elisa Friedman for always being there for me over the years. Finally, I would like to thank Naut Kusters and his mother, Ans Kusters for letting me feel at home in the Netherlands.

This work forms Project II of the collaborative inter-university program, "Assessing the time-varying effects of Multimodal transportation and Destination choices in Urban Systems" (AMADEUS), directed by Harry Timmermans at the Eindhoven University of Technology, made possible in part through a generous grant from the Netherlands Organization for Scientific Research (NWO) and the financial and institutional support of the Department of Geography, Planning and International Development Studies (GPIO) of the UvA Faculty of Social and Behavioural Sciences. The development of the theory in Part II of this dissertation and its accompanying mathematical appendices A, B and C was supported by Cars Hommes and the Center for Nonlinear Dynamics in Economics and Finance (CeNDEF) of the UvA Faculty of Economics and Business.

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May 2013, Amsterdam