

Preface

In developing agents and multi-agent systems computer scientists have used sociological terms like negotiation, interaction, contracts, agreement, organization, cohesion, social order, and collaboration. Meanwhile an interdisciplinary area called "Socionics" is beginning to establish itself. The realisation that the behaviour of societies cannot fully be explained by macro-theories only, and the progress made in agent technology opened the way to new models of societies in which not only macro-theories but also micro-theories are incorporated. In this second volume of the workshop Modelling Artificial Societies and Hybrid Organizations the behaviour of societies is studied and modelled in four of the papers.

Köhler, Moldt, and Rölke model societies using Reference nets. They emphasize the need to model both the individual behaviour of the agents and the overall behaviour of the society at hand. Schmidt stresses the importance of modelling the physical, emotional, cognitive, and social factors that influence human behaviour. These ideas are illustrated by modelling and simulating the interactions of individuals in the process of group formation, group activities and group disbandment. Dittrich, Kron, and Banzhaf modelled Luhmann's theory on double contingency by modelling the individual behaviour of agents in terms of expectations, action selection strategies and memory quality. Their simulations show that Luhmann's theory can but does not necessarily lead to social order. Ewert, Roehl, and Uhrmacher study the effects of crises management on the macro-, and the micro-level. Their paper makes a case for the importance of looking at the micro-level as well by showing that some dynamics of behaviour result from individual micro-macro-level interactions that cannot be explained in terms of a macro-level model only.

The development of the socionics research area and the increased interest in dynamics of behaviour of agents in hybrid organizations required the development of new modelling concepts like roles, groups, social intelligence, beliefs, desires, and intentions. These concepts need to be clearly defined and theories and languages must be created to enable transparent models of societies. Even the concept "hybrid society" itself is still an issue of debate as is illustrated by the paper of Tomic-Kludrovic, Mitrovic, and Petric. The paper shows that terms taken from popular sociology cannot be taken directly into socionics without a careful study of the scope and implications when used in distributed artificial intelligence. Although the central topic of the paper by Lindemann and Münch is the role concept for agents in multi-agent systems, in that paper the authors also clarify socionical concepts like cooperation, social action, and joint action. With respect to roles, the paper aims for a more localized concept of roles allowing the formulation of specific expectations that one agent might have with respect to the behaviour and competences of another. This more subtle idea of roles is useful for social simulation of hybrid societies. Finally, Panzarasa and Jennings developed a quantified multi-model logical language for reasoning about and representing agents' mental attitudes. They use that language to study negotiation and joint commitments between agents. The authors formulate a number of assumptions that abstract from specific negotiation strategies and identify the key cognitive and social processes that underpin negotiations.

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