SOE 7: Prize Session: Young Scientist Award for Socio- and Econophysics (YSA)

Time: Monday 16:00–17:45   Location: MA 001

Invited Talk   SOE 7.1   Mon 16:00   MA 001
Computational Social Science: Exciting Progress and Future Challenges — •Duncan Watts — Microsoft Research, 641 Avenue of the Americas, 7th Floor, New York, NY 10011, USA

The past 15 years have witnessed a remarkable increase in both the scale and scope of social and behavioral data available to researchers, leading some to herald the emergence of a new field: *computational social science.* Against these exciting developments stands a stubborn fact: that in spite of many thousands of published papers, there has been surprisingly little progress on the *big* questions that motivated the field in the first place*questions concerning systemic risk in financial systems, problem solving in complex organizations, and the dynamics of epidemics or social movements, among others. In this talk I highlight some examples of research that would not have been possible just a handful of years ago and that illustrate the promise of CSS. At the same time, they illustrate its limitations. I then conclude with some thoughts on how CSS can bridge the gap between its current state and its potential.

Presentation of the YSA Award to the Awardee

Prize Talk   SOE 7.2   Mon 17:00   MA 001

For cooperation please add: Carrots, sticks, both, or neither? — •Matjaz Perc — Faculty of Natural Sciences and Mathematics, University of Maribor, Slovenia

Widespread cooperation among unrelated individuals distinguishes humans markedly from other species. The origins of our remarkable other-regarding abilities have been associated with rearing offspring that survived, which was a pressing challenge during the Paleolithic age that could not be met by individual efforts alone. But in the absence of such a challenge, what keeps us cooperating? Reciprocity is long considered an important piece of the puzzle. If someone is kind to us, we are kind in return. We reward cooperation. On the other hand, if someone is unfair or exploitative, we tend to retaliate. We punish defection. And according to the strong reciprocity hypothesis, positive and negative reciprocity are correlated to give us optimal evolutionary predispositions for the successful evolution of cooperation. But is this really true? Should we reward and punish, or should we do just one of the two, or maybe neither? Recent economic experiments reject the strong reciprocity hypothesis, and everyday experience also leaves us with the impression that people and institutions will either reward cooperation or punish defection, but seldom will they do both. I will show how methods of statistical physics might contribute to the resolution of the stick versus carrot dilemma.