

Simulating the Social Processes of Science

A proposal for a Lorentz Workshop, 7-11 April 2014, in the Netherlands.



Topic:

Science is the result of a substantially social process. That is, science relies on many inter-personal processes, including: selection and communication of research findings, discussion of method, checking and judgement of others' research, development of norms of scientific behaviour, organisation of the application of specialist skills/tools, and the organisation of each field (e.g. allocation of funding). Furthermore, science is full of the social phenomena that are observed elsewhere: fashions, concern with status and reputation, group-identification, collective judgements, social norms, competitive and defensive actions, to name a few. However, the sciences have developed their own unique social characteristics – they differ from other parts of society, with their own social norms, reputation mechanisms, organisations and motivations. Understanding how useful and reliable knowledge can result from such a messy social process is not easy – but sometimes scientific fields fail to achieve this and suffer relatively unproductive phases.

If we believe the following: that computer simulation is a useful tool for understanding social phenomena, that science is substantially a social phenomenon, and it is important to understand how science operates, then it follows that we should be attempting to build simulation models of the social aspects of science. However the complexity of the phenomenon seems to require new approaches and tools. This workshop is to stimulate further work in this area. It follows a book (<http://bit.ly/Qa0rbh>) and a special issue (<http://bit.ly/sGwNvG>).

Workshop aims and objectives:

The proposed workshop is to stimulate further research on this topic, providing a forum for the reporting and discussion of current approaches, and to facilitate the development of collaborations. We hope that this workshop will inspire the development of simulation models that:

- Establish explanations that link macro level features of science with the micro level behaviour of individual scientists, and *vice versa*
- Be motivated in terms of their conception and design with respect to existing discussion and work in this area (see above)
- Include some indication of how and in what way any simulation might be checked and/or validated
- Motivate and inform the development of computer science techniques to support this kind of research.

Participation:

Participants need to commit to attending the workshop for the week – the idea is that this provides an opportunity for intense and sustained discussion/collaboration on the topic. The list of such people is one of the things that helps make an application successful, so we need an “in principle” commitment to attend on these dates in advance of the application. Office space, registration, refreshments and lunch is provided for participants during the week but you would need to cover other costs (e.g. hotel and travel).

If you want to be a participant:

Email a short (no more than 1 side of A4) summary of your past, current and intended research in this area, the likelihood of you being able to attend on the above dates, any other nearby dates that might be possible for you and what your “home” disciplines are (it is useful for the application to show a variety of backgrounds). Send this to bruce@edmonds.name ASAP. Priority will be given to those who have published relevant simulations (or related research), followed by those that are currently working on simulations, tools etc.

Organizers:

Bruce Edmonds, Andrea Scharnhorst, Petra Ahnweiler, and Nigel Gilbert