

Michaelmas Term 2007

**CABDyN SEMINAR SERIES**  
**Saïd Business School, University of Oxford**



**Convenors:**

Felix Reed-Tsochas, *James Martin Institute, Saïd Business School*

Jukka-Pekka Onnela, *Physics Department & Saïd Business School*



Our meetings intend to provide a forum for rigorous research (in a broad range of disciplines) focusing on complex adaptive systems, using methods and techniques such as agent-based modelling and complex network analysis. Since potential areas of application for such approaches can be located across the social, natural and engineering sciences, our aim is to involve participants from a wide range of departments in Oxford. We welcome talks which focus on particular areas of application and associated technical issues, but also encourage contributions which address more fundamental conceptual or mathematical problems. The CABDyN Seminar Series is one of the activities of the CABDyN Research Cluster (<http://sbs-xnet.sbs.ox.ac.uk/complexity/>).

**Tuesday 13<sup>th</sup> November, 12.30 – 2.00 pm**

**Seminar Room B**

**Prof Maxi San Miguel**

**Institute for Cross-Disciplinary Physics and Complex Systems,  
University of the Balearic Islands, Mallorca, Spain**

**Cultural globalization-polarization transition, cultural drift,  
co-evolution and group formation**

**ABSTRACT**

Studies of cultural differentiation have shown that social mechanisms that normally lead to cultural globalization - homophily and influence - can also explain how distinct cultural groups (polarization) can form. So long as the level of heterogeneity in the population is high enough, cultural diversity can emerge. However, this emergent cultural diversity has proven to be unstable in the face of "cultural drift" - small errors or innovations that allow cultures to change from within. A model of cultural differentiation that combines the traditional mechanisms of homophily and influence with a third mechanism of "network homophily" is proposed. In this model network structure co-evolves with cultural interaction so that social ties are allowed to change with cultural influence. This results in a fragmentation of the social network leading to patterns of cultural diversity that are stable in the presence of cultural drift.

Reference: arXiv:physics/0609213, to appear in J. Conflict Resolution (Dec 2007)

**Sandwiches and drinks will be provided**

For further information contact [info.cabdyn@sbs.ox.ac.uk](mailto:info.cabdyn@sbs.ox.ac.uk)

Seminar webpage: [http://sbs-xnet.sbs.ox.ac.uk/complexity/complexity\\_seminars.asp](http://sbs-xnet.sbs.ox.ac.uk/complexity/complexity_seminars.asp)