SAID BUSINESS SCHOOL, University of Oxford

SEMINAR SERIES / Trinity 2012

Convenor: Felix Reed-Tsochas, CABDyN Complexity Centre, Saïd Business School

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Seminar webpage: www.cabdyn.ox.ac.uk/complexity_seminars.asp

Sandwiches and drinks will be provided

Please note: although the seminar programme detailed was correct at time of printing, seminar arrangements are subject to change – for the latest information, please check the seminar webpage.

'Multiscale Human Mobility: From Micro Mechanisms to Macro Behaviour'

Dr Anders Johansson
The Systems Centre, University of Bristol

Tuesday 8th May 2012, 12.30 -14.00
Seminar Room 13, Saïd Business School

Anders Johansson (www.ajohansson.com) is a Senior Lecturer in Systems Engineering at the University of Bristol, an Honorary Senior Research Associate at the Centre for Advanced Spatial Analysis (CASA), University College London (UCL), an external examiner at the International Centre for Crowd Management and Security Studies, New Buckinghamshire University, and Director of Crowd Vision Ltd. He has expertise in crowd dynamics, urban multi-modal transport modeling, complex systems, game theory, and social simulation.

ABSTRACT:

Traditional approaches used by transport and crowd managers rest on the assumption that the systems to be operated and controlled are reasonably homogeneous and in equilibrium. However, this totally neglects the strong and sometimes counter-intuitive effect of social interaction and dynamics.

Studies of real-world human mobility have highlighted a rich set of characteristic dynamical patterns such as lane formation, intermittent bottleneck flows, stop-and-go waves and crowd turbulence; all of which spontaneously emerge in a self-organised way.

Depending on what scale we look at human mobility processes, different types of dynamics, patterns, and mechanisms are revealed, and different types of research questions can be addressed. However, when we simultaneously look at human mobility at several different scales, the social mechanisms identified at a micro scale can often explain the patterns that emerge and the resulting behaviour of the system at a macro scale.

We will illustrate this by looking at human mobility and related transport systems at several different scales; ranging from small-scale crowd dynamics, up to urban multi-modal transport systems, and we will also look at different aspects of human mobility in urban areas, which includes navigation, route choice and interaction embedded within a geographical, cultural and social context.

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