

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 20th November, 12.30 – 2.00 pm

Reception Room – please note different venue

Prof Kristian Skrede Gleditsch
Department of Government, University of Essex

Modelling the Frequency and Severity of Terrorism

ABSTRACT

In the spirit of Lewis Richardson's original study of the statistics of deadly conflicts, we study the frequency and severity of terrorist attacks worldwide since 1968. We show that these events are uniformly characterized by the phenomenon of "scale invariance," that is, the frequency scales as an inverse power of the severity, $P(x) \propto x^{-\alpha}$. We find that this property is a robust feature of terrorism, persisting when we control for economic development of the target country, the type of weapon used, and even for short time scales. Further, we show that the center of the distribution oscillates slightly with a period of roughly $\tau \approx 13$ years, that there exist significant temporal correlations in the frequency of severe events, and that current models of event incidence cannot account for these variations or the scale invariance property of global terrorism. Finally, we describe a simple toy model for the generation of these statistics and briefly discuss its implications.

Reference: 2007. Clauset, Aaron, Maxwell Young & Kristian Skrede Gleditsch. "On the Frequency of Severe Terrorist Events", *Journal of Conflict Resolution* **51**(1): 1-31.

Sandwiches and drinks will be provided

For further information contact info.cabdyn@sbs.ox.ac.uk

Seminar webpage: http://sbs-xnet.sbs.ox.ac.uk/complexity/complexity_seminars.asp