



UNIVERSIDAD COMPLUTENSE  
MADRID

---

# AVISO DE CONFERENCIA

---

## **Social dynamics from a complex systems approach: language contact and complex networks**

Prof. Xavier Castelló Llobet

GESCIT (Grupo de Investigación de Estudios Sociales en Ciencia y Tecnología); Departamento de Psicología Social. Universitat Autònoma de Barcelona (UAB).

---

Facultad de Informática

Sala de Grados • 8 de mayo de 2012 • 18: 00

*entrada libre hasta completar el aforo*

### resumen:

---

We investigate the dynamics of two agent based models of language competition. In the first model, each individual can be in one of two possible states, either using language X or language Y, while the second model incorporates a third state XY, representing individuals that use both languages (bilinguals). We analyze the models on complex networks and two-dimensional square lattices by analytical and numerical methods, and show that they exhibit a transition from one-language dominance to language coexistence. We find that the coexistence of languages is more difficult to maintain in the Bilinguals model, where the presence of bilinguals in use facilitates the ultimate dominance of one of the two languages. A stability analysis reveals that the coexistence is more unlikely to happen in poorly-connected than in fully connected networks, and that the dominance of only one language is enhanced as the connectivity decreases. This dominance effect is even stronger in a two-dimensional space, where domain coarsening tends to drive the system towards language consensus.

### sobre Xavier Castelló:

---

Xavier Castelló Llobet posee un doctorado en ciencias físicas por la UIB (Universitat de les Illes Balears), con una tesis sobre el modelado de dinámicas sociales en sistemas complejos. Ha sido investigador en el Instituto de Física Interdisciplinar y Sistemas Complejos del CSIC desde 2005 hasta 2011. Desde 2012 posee un contrato Juan de la Cierva en el departamento de psicología social de la UAB (Universitat Autònoma de Barcelona) para la simulación social de procesos sociales emergentes relacionados con la gestión del agua y otros bienes comunes. Ha sido investigador visitante en el MIT (Massachusetts Institute of Technology), la Helsinki University of Technology y la Università di Roma La Sapienza. Posee 9 publicaciones científicas con factor de impacto JCR. CV ampliado: [http://homes.ourproject.org/~samer/+/Short-CV\\_english\\_Feb2012\\_Xavier.pdf](http://homes.ourproject.org/~samer/+/Short-CV_english_Feb2012_Xavier.pdf)