

# Understanding the social butterfly effect

December 2 2010

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(PhysOrg.com) -- A team of scientists from the University of Southampton, in collaboration with Royal Holloway, University of London and the Institute of Zoology at London Zoo, have been researching the social butterfly effect – the study of how we change our friends throughout our lives.

They are interested in the fact that, despite the fleeting nature of many of our relationships, we often form cliques – circles of friends that are often friendly with each other. This could help us to understand why our society is made up of so many groups, from political to sporting.

The study, *Stability in flux: community structure in dynamic networks*, by Dr John Bryden, Dr Sebastian Funk (now at the Institute of Zoology, Zoological Society of London) and Professor Vincent Jansen from the School of Biological Sciences at Royal Holloway, University of London and Dr Nic Geard and Dr Seth Bullock from the School of Electronics and Computer Science at the University of Southampton, is being published in the *Journal of the Royal Society Interface* today.

Dr Seth Bullock says: “The study looks at how we often form friendships with people who are similar with us in some way. This could mean having a similar profession, interest, hobby, religion or political affiliation. It showed how cliques form around common shared interests, such as being fans of the same football club or the latest pop sensation on the X Factor, or perhaps more controversially, having similar opinions on politics.”

The academics attempted to understand how groups in society may be formed by building a computer model of a social network. Dr John Bryden from Royal Holloway, University of London explains: “This work is interesting because it's one of the first to study social networks where connections between people change. As online social networks have become popular, so scientists have increasingly studied human interaction using networks.”

He adds: “The study could have broad implications. Networks with changing connections are quite common in the natural world, from molecules to brain cells, and many of these networks also form groups.”

In the model, individuals freely form and break friendship links with others. “We changed the model so that individuals tended to form links with similar others and we saw the cliques start to form”, says Dr Funk.

The study also went a step further, looking at what happens when peoples’ interests change, for example someone might find a new interest or friends might influence one another. Dr Bullock adds: “It was fascinating to see how the cliques could form without any one person organising everything. We saw individuals moving from one clique to another. Over time some cliques disappeared while new ones were established.”

Dr Funk adds: “It was interesting to see that new cliques tended to either fail very quickly or grow and persist for a much longer time, with very few in between.”

**More information:** [rsif.royalsocietypublishing.org/](https://rsif.royalsocietypublishing.org/)

Provided by University of Southampton

Citation: Understanding the social butterfly effect (2010, December 2) retrieved 19 April 2024 from <https://phys.org/news/2010-12-social-butterfly-effect.html>

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