

A different 'null model' of rationality

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The limits to the standard model (1)

- **Vernon Smith:** 'I urge students to read narrowly within economics, but widely in science. Within economics there is essentially only one model to be adapted to every application: optimization subject to constraints due to resource limitations, institutional rules and /or the behaviour of others, as in Cournot-Nash equilibria. The economic literature is not the best place to find new inspiration beyond these traditional technical methods of modelling'
- The standard model has probably already been applied almost anywhere it might be useful
- **Friedrich Hayek:** ' An economist who is only an economist cannot be a good economist'

Networks (1)

- One way of thinking about networks is that they make explicit the agents from which/to which any given agent receives sends information
- In this sense they help formalise bounded rationality

Networks (2)

- **The fundamental feature of networks is that they offer the basis for a different model of rational agent behaviour**
- ‘Humans reason poorly and act intuitively’: Daniel Kahneman, Nobel lecture, *American Economic Review*, 2003
- In this approach, agents do not process information and choose rationally in standard economic terms. They copy what others have done
- Obviously, in practice there may be a mixture of the two types of rationality
- Copying implies tastes and preferences are **not** fixed
- This places us in a world more like Knightian uncertainty than Knightian risk

Why Copy (1)?

- Asch (1953 and 1955): *conformity*
- the behavior of an agent tends to become more similar to that of the group of which he or she is a member
- either because the agent believes the group to have better information than he or she does, or from a desire to conform to group norms
- *Peer acceptance*: 'it is ok to..... be obese, binge drink'
- Fowler and Christakis, 'The spread of obesity in a large social network' , *New England Journal of Medicine* , 2007
- Ormerod and Wiltshire, 'Binge drinking in the UK: a social network phenomenon' , *Mind and Society*, 2009

Why Copy? (2)

- ‘Social learning (learning through observation or interaction with other individuals) is widespread in nature and is central to the remarkable success of humans’; Rendell et.al. ‘Insights from the Social Learning Strategies Tournament’, *Science*, 9 April 2010
- ‘The most important outcome of the tournament is the remarkable success of strategies that rely heavily on copying... This outcome was not anticipated either by the organisers nor by the committee of experts established to oversee the tournament’
- Simple copying worked very well!

Reflections

- Standard theory remains applicable where the assumption of fixed tastes and preferences is reasonable
- Network theory can help extend the concept of bounded rationality
- But in many contexts, copying/imitation across networks forms a more realistic view of agent behaviour
- This is a different model of rationality which gives different results to 'economic' rationality