

## Abstracts

---

Going back to El Farol  
M. Grinfeld, Strathclyde

I will review W. B. Arthur's paradigmatic El Farol story and his approach to modelling it. This will allow us to ask many relevant questions about the involvement of emotions and memory in economic decision-making.

---

Incorporating Memory into Economic and Financial Models.  
H. Lamba (GMU, Mathematics)

The standard mathematical models of economics and finance operate under very restrictive assumptions about the nature of such systems. The use of memory-free (history-independent) models is attractive because it both simplifies the mathematics involved and is consistent with the theory of rational and efficient markets. However such models appear to be inconsistent, to a substantial degree, with the actual behaviour of such systems.

The empirical evidence arguing for the inclusion of memory effects at both the micro and macro level will be briefly reviewed. Then several market models will be discussed, emphasizing the different ways in which memory effects are incorporated and some of the advantages and drawbacks in each case. Finally, some open questions and possible directions for future research will be suggested.

---

Decision making under uncertainty: From heuristics and biases to neuroeconomics  
Hartmut Leuthold, Department of Psychology, Centre for Cognitive Neuroimaging, University of Glasgow, [h.leuthold@psy.gla.ac.uk](mailto:h.leuthold@psy.gla.ac.uk)

Will share values go up? Can I trust the expert's advice when making a risky financial decision? In our everyday experience, we permanently have to make judgements in order to come up with answers to such questions. Whereas normative models of decision making are appealing, as they describe what we should do, they fail to adequately describe real-world behaviour, mainly because decision makers often behave "irrationally". In my presentation, I will review psychological studies that illustrate the basic mechanisms underlying individual decision making in humans. Specifically, on the basis of insights from neuroscientific studies, I will evaluate the assumption that decision making is the result of an interaction between two separate systems, a reflexive (hot, automatic,...) and a reflective (cold, controlled,...) system. Of course, we all know that many of our decisions depend on other people. Therefore, I will further review recent neuroeconomic research that is rather concerned with decision making in situations where people interact.

---

Human memory structure and function: Its potential relevance to economics  
Alan Baddeley, York

It is important to recognise that human memory is not a single unified faculty, but rather an alliance of memory systems operating in different ways over different time scales. A brief account of these interacting systems will be given and placed within an illustrative evolutionary context. This will be followed by some speculations as to how different aspects of working memory might impact on economics at both the individual and group level.

---

From asset mispricing to systemic fragility: a turmoil reconstruction  
F. Boissay (ECB-DGR); J. Henry (ECB-DGE)

The ongoing financial crisis has often been interpreted as the result of a largely irrational behaviour, which magnified the macro-financial cycle in particular generated by house price dynamics. Other explanations emphasised the role of flawed features of the securitisation process.

We will try to envisage a further approach, according to which the macro-financial 'bubble' interpretation would be combined with a number of other features, which in our view contributed to the build-up of financial tensions. We would like to suggest that besides a possibly irrational trigger (a deviation from fundamentals on a "local" market), most of the mechanisms at play might have been consistent with rational behaviour - albeit with wrong assumptions, parameters or externalities, albeit not strictly related to securitisation design issues.

Against this background, ingredients that may be needed to reconstruct the crisis dynamics along such lines - outside the US housing market conditions proper - could involve mimetic behaviour, prisoners' dilemma configuration, waiting-time models, compensation schemes and related incentives, globalisation and increased risk correlations... Each of these avenues will be tentatively explored and corresponding possible modelling strategies presented, taking stock of the existing available literature. Following which, appropriate potential policy recommendations could be mentioned.

---

Economic past. A dead lock or a prologue?  
Roberta Patalano, [roberta.patalano@uniparthenope.it](mailto:roberta.patalano@uniparthenope.it)

The talk will be based on two papers, one that was published in 2007 for the Journal of Bioeconomics, and a new one that is still in progress. The first paper addresses the relationship between path dependence and memory. Recent developments in economic literature have pointed out that path-dependence has a cognitive dimension. Our main claim is that the concept of path-dependence, as commonly interpreted, does not take the reconstructive nature of human memory into full account. When such nature is acknowledged, the relevance of the mind in orientating individual attitude toward the past is extended and seems to be more important than discussed in the traditional literature. If the past is one, is fixed and cannot be changed, the same does not hold for the image of the past that agents build up in their mind when they try to remember it. Such an image changes every time that it is recalled from memory, it is updated with the help of the present and it is personalized on the ground of subjective evaluations. Among the most relevant implications for economic theory, the reconstructive nature of memory extends the meaning of lock-in and allows for the definition of new

devices to escape trapping states. Indeed, the existence of a local equilibrium that prevents agents from exploring alternatives may be thought of as dependent on a specific representation of past events, that is temporary and to some extent modifiable. The second paper addresses the relationship between future and memory. In recent neuro-cognitive research a new hypothesis has been gaining support that interprets the main function of (episodic) memory as future thinking instead of reminiscence. According to this hypothesis, the episodic system allows us to simulate our personal futures by flexibly drawing on elements of the past. Coherently, neurological studies have started to show that past and future events engage common neural regions and that amnesic patients have great difficulties in imagining their personal futures. On this base of these results, we ask weather the relationships between past experience and future thinking can inform the approach of economists to time.

#### Main References

- Addis D. R., Wong A. T. & Schacter D. L. (2006), Remembering the past and imagining the future: Common and distinct neural substrates during event construction and elaboration, *Neuropsychologia*, 45, 1363-1377.
- Patalano R. (2007), Mind-Dependence. The Past in the Grip of the Present, *Journal of Bioeconomics*, 9, 2, 85-107.
- Patalano R. (2009), Imagination and economics at the crossroad. Materials for a dialogue, *History of Economic Ideas*, forthcoming.
- Rizzello S. (2004). Knowledge as a path-dependence process. *Journal of Bioeconomics*, 6, 255-274.
- Schacter D. L. & Addis D. R. (2007), The cognitive neuroscience of constructive memory: remembering the past and imagining the future, *Philosophical Transactions of the Royal Society B*, 362, 773-786.
- 

#### M. Baddeley (Cambridge), A neuroeconomic analysis of herding in financial decision-making

Various theories of herd behavior suggest that individuals are sensitive to the decisions and actions of other people which, in the economic / financial world, can lead to undesirable outcomes such as stock market bubbles and bank-runs. However, how the brain processes this socially-derived influence is not understood; economic models of rational herding neglect important social, psychological and neurological factors. Three potentially overlapping sets of economic, sociological and psychological factors are important in understanding why people herd, i.e. why private decisions are modified by the decisions of a group or herd. First, in economic models of rational herding, Bayesian updating leads rational agents to update their expectations using social information about group decisions; second, sociological models explain how social pressure can affect private judgement; and third, psychological factors can explain individual heterogeneity in susceptibility to group influence and propensities to herd. We analyse some of these factors empirically using a simple financial choice task; this is analysed using conventional econometric analysis and neuroeconomic techniques via a functional magnetic resonance imaging (fMRI) study. The econometric evidence indicates that experimental subjects are likely to herd in the sense that their choices are affected by social information about decisions of a group; also, there are statistically significant associations between herding propensities and specific personality traits. The fMRI analysis shows that activity in the ventral striatum, an area heavily implicated in reward-processing, tracks the degree of social influence on herding behavior suggesting that the ventral striatum is involved in the processing of complex social aspects of decision making and may function as a neural basis for herd behavior.

---

## A Model of Political Agency with Emotional Voting

C. Jennings, Economics, Strathclyde

This paper attempts to extend existing models of political agency to an environment in which voting may be divided between informed and instrumental, informed and 'expressive' (Brennan and Lomasky (1993) and uninformed due to 'rational irrationality' (Caplan (2007))). It constructs a model where politicians may be good, bad or populist. Populists are more willing than good politicians to pander to voters who may choose inferior policies in a large-group electoral setting because their vote is insignificant compared with those that voters would choose were their vote decisive in determining the electoral outcome. Bad politicians would ideally like to extract tax revenue for their own ends. Initially we assume the existence of only good and populist politicians. The paper investigates the incentives for good politicians to pool with or separate from populists and mainly focuses on three key issues - (1) how far voter's preferences are from those held by the better informed good politician (2) the extent to which the population exhibits rational irrationality and expressiveness (jointly labelled as emotional) and (3) the cost involved in persuading uninformed voters to change their views in terms of composing messages and spreading them. This paper finishes by considering how the inclusion of bad politicians may affect the behaviour of good politicians and suggests that a small amount of potential corruption may be socially useful if it allows good politicians to win elections by separating and implementing good policy. It is also argued that where bad politicians have an incentive to mimic the behaviour of good and populist politicians, the latter types of politician may have an incentive to separate from bad politicians by investing in costly public education signals.