Université Toulouse 1 Capitole
Ecole d'économie de Toulouse

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Session 1

Semestre 1

Master 1 Econometrics, Statistics, Economics

Epreuve : Evolution of Economic Behaviour

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Toulouse School of Economics
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ANSWER TWO QUESTIONS

1) "Experimental studies have shown us that human beings are not usually completely selfish, but also care about the welfare of others. Therefore there is no difficulty in explaining the existence of human cooperation. So economists can now go and study something more interesting instead". Is this true?

Answers will receive 5/10 for showing that experimental studies have established that subjects frequently contribute positive amounts in public goods games and dictator games even when the interactions are anonymous and one-shot. Answers that go on to note that the existence of these prosocial preferences are a puzzle from the point of view of natural selection will receive 7/10, with up to 9/10 for a complete account of the kinds of solution that have been proposed for this puzzle (see question 3). Extra marks for noting any of the following: a) that not all individuals display pro-social preferences; b) that some forms of pro-social behavior are best explained by norm-observance than by concern for the welfare of others; c) that not all non-egoistic preferences are pro-social, some being anti-social (eg spite).

2) How is human cooperation different from cooperative behavior in other species?

Answers will receive 5/10 for noting that many animal species cooperate on a large scale (eg the social insects) but that in almost all cases close kinship is involved. Extra marks for noting the following: a) human beings have the largest habitat range of any species; b) we have a large capacity for learning and imitation enabling us to develop cumulative culture; c) human cooperation is also intergenerational due to long infant dependency and post-reproductive survival (eg women after menopause).

3) What do biologists mean by "altruism"? How does the notion of "assortative matching" help to explain the evolution of altruism in this sense?

Answers will receive 5/10 for noting that altruism to biologists is not an emotion or other psychological concept (it's any behavior raising fitness of another individual at a cost to fitness of the individual engaging in the behavior), and that this poses a puzzle since if it lowers fitness how can it have evolved? They receive 7/10 for noting that individuals' genes can leave copies of themselves without leading those individuals to have more descendants – they can lead OTHER individuals who also bear copies of the genes to have more descendants. Extra marks for noting any of the following potential mechanisms: kin selection, multi-level selection, mutual recognition.

4) What is an Evolutionary Stable Strategy in biological game theory and how is it related to the notion of Nash equilibrium in economic game theory?

Answers will receive 5/10 for noting that an ESS is a strategy that, if adopted by the whole population, cannot be invaded by an mutant strategy that is initially rare. They will receive 7/10 for noting that it is similar to Nash equilibrium but not identical because ESS is defined in conditional-response terms and is not an instance of optimization. Extra marks for noting that the game Harm-thy-Neighbor has two Nash equilibria but only one ESS (because a strategy can invade initially through genetic drift).

5) Is the modern world more violent than it has ever been? What explains the change in the rates of violence over the course of history?

Answers will receive 5/10 for noting that estimates of the rate of violent death, at about 1.3% of all deaths in the world today, are about 1/10 of the estimated rates of violent death in forager societies as noted by Bowles (2009). Extra marks for a) showing that historical rates of violence have declined gradually over the centuries and are therefore unlikely to have a single explanation, b) discussing Norbert Elias's theory and its limitations.

6) Do we understand why human beings have evolved to tell each other stories that are not true?

Answers will receive 5/10 for noting that telling stories that are false is likely to reduce the fitness of hearers but might increase the fitness of listeners. Extra marks for noting that some kinds of fitness reducing behavior are nevertheless common in the modern world because conditions are very different from those in which our ancestors evoled.