Evolving Utilities

What have we learned so far?

Economic vs Biological Rationality

- ECONOMIC
  - Decision making in *real time* by *individual* agents - *expected utility maximising* - internal coherence of choice.
  - Concerns actions not beliefs or underlying cognitive mechanisms that generate these actions.

- EVOLUTIONARY
  - Fitness not grounded in revealed preferences, but on genetic theory of natural selection.
  - NS is the consistent rational process that determines the distribution of alleles in a population.

Reasons why humans are not expected to measurably maximise anything

- Adaptation does not imply optimality
  - Behavioural ecologists use economic tools to help make testable predictions to enable us to understand why animals make decisions they do. We do not try to test whether animals behave optimally or economically rationally.
- Natural selection is concerned with the average consequences of a trait
- Natural selection likes quick, cheap solutions to complex calculations
- The correct solution to fitness trade offs may vary over time and circumstance
- It’s hard to measure fitness
- Not every minutiae of behaviour has an adaptive explanation
- Evolutionary models are qualitative - measurably optimal behaviour is rare.

Let’s settle on some terms (tiny disagreement with Christoph)

- **Rational** behaviour = consistent with maximising SOME utility function (requires completeness, transitivity)
  - Hyperbolic discounting, ambiguity aversion, altruism, inequity aversion etc.
- **Heuristic** behaviour may not be consistent with ANY utility function
  - Lexicographic preferences, intransitive preferences
- Some heuristic behaviour may be rationalizable by a utility function
- **Homo economicus** = utility function that is selfish and obeys expected utility

Why an evolutionary perspective IS useful for (behavioural) economics?

- Already **huge overlap**!
  - Risk aversion, social preferences, social learning etc.
- **Behavioural similarities** between human and non-humans driven by natural selection
- Critical for understanding individual and strategic **decision-making**
- **Preference endogeneity**
- Small departures from selfish micro-behaviours matter a great deal for macro-outcomes

Necessity of axiomatisation

- We require “axioms” that pin down a particular utility function
  - In the spirit of Balazs’ approach
- E.g. expected utility requires Independence of Irrelevant Alternatives
  - Easily falsifiable!
- Need same agenda for social preferences in order to resolve inconsistencies (Max, Tobias)
  - “(dis)advantageous inequity aversion”

A Behavioral Analysis of Stochastic Reference Dependence†

By YUSUFCAN MASATLIOGLU AND COLLIN RAYMOND*

We examine the reference-dependent risk preferences of Kőszegi and Rabin (2007), *focusing on their choice-acclimating personal equilibria. Although their model has only a trivial intersection* (*expected utility*) *with other reference-dependent models, it has very strong connections with models that rely on different psychological intuitions. We prove that the intersection of rank-dependent utility and quadratic utility, two well-known generalizations of expected utility, is exactly monotone linear gain-loss choice-acclimating personal equilibria. We use these relationships to identify parameters of the model, discuss loss and risk aversion, and demonstrate new applications.* (*JEL* D11, D81)

Why an evolutionary perspective is NOT useful for (behavioural) economics?

- Very micro and very macro, but not population scales **in between**
- Too **much** heterogeneity permitted
- **Non-rationalizable heuristics** are rare with strong incentives
- Relevant **time scales** are unclear
- Hard (though not impossble!) to **test** evolutionary economic theories
  - Can’t create lesions in amygdala or erode telomeres
- **Qualitative** rather than quantitative
  - Economists need to estimate effect of a tax
- No framework to think about design

Policy design

- Many questions in economics are about informing better policy (Christoph)
- Does knowing departures from purely selfish behaviour help us design better policy?
  - Nudging?
- Isn’t selfishness the correct “agnostic” benchmark for policymakers?
- Should policy depend both on “intrinsic” preferences or on “socially dependent” preferences?
  - Intent, driving forces, and adaptation of behaviour (Melissa, Tobias, Christoph)
- What about huge preference heterogeneity and endogeneity?