DISCUSSION OF SAMUEL JOHNSON AND HENRY BRIGHTON: PERSPECTIVES FROM PSYCHOLOGY & COGNITIVE SCIENCE

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COGNITIVE SCIENCE & ECONOMICS

- Cognitive science should inform behavioural economics, e.g. captures a richness of human behavior absent in economics
- "Sense-making": using information available to understand the world around us (e.g., forming expectations of likelihood of events)
  - Heuristics are often used rather than Bayesian maximization
  - People construct narratives that influence how they understand events: different narratives may generate different predictions from same events
  - Intuitive Theories
    - Zero sum thinking, intuitive mercantilism, and the evolution of intuition about exchange

HOMO HEURISTICUS

- Humans regularly use heuristics rather than complex calculations. This is not an "error": simple heuristics would often be better even if more computational power were available

- Goodness of fit versus out-of-sample prediction, and bias-variance dilemma:
  - Computationally-intensive models: low bias, high variance
  - Heuristics: higher bias, lower variance
  - Example: investing 1/N beats optimal Markowitz portfolio

- Example: financial regulation and the "bias bias"

- Ecological rationality applicable when uncertainty is not quantifiable

BELIEFS, LEARNING & EXPERIMENTS

- Richer models of how agents develop beliefs and form expectations
  - Handel and Schwartzstein (2018); Schwartzstein (2014); Hanna et al (2014); Gagnon-Bartsch et al (2018); Enke (2017); Enke and Zimmerman (2018); Bordalo et al (2018); Caplin (2016); Benabou (2015)
- Hanna, Mullainathan, and Schwartzstein (2014):
  - Agents have access to all information but cannot attend to all of it – they rationally choose which features to notice
  - Empirical finding: Indonesian seaweed farmers inattentive to important variable (pod size) even after participating in trial, but providing *summary* of pod size effects changed behavior
  - Suggests providing information *in the right way* that facilitates learning from data *can* improve decisions

THE FRONTIER OF BEHAVIOURAL ECONOMICS

- Gagnon-Bartsch, Rabin, and Schwartzstein (2018):
  - Why do people not update beliefs upon information that conflicts priors?
  - Unlikeliness of observing data would not induce change of beliefs, as particular draw of data is unlikely under any set of beliefs: new data only effective when it is more likely under a compelling alternative belief
  - Agents discard new information when existing theory says this information is unimportant – hence do not update beliefs
  - Agents update only if new information contradicting beliefs is deemed important by existing beliefs – called "incidental learning"
  - Model explains why many common "errors" are stable and when they are more likely to happen

COGNITIVE SCIENCE, MORAL PSYCHOLOGY, AND ALTRUISTIC CAPITAL

- "Humans hardwired intuitively for cooperation" (Rand et al 2014)
- Economics: altruistic preferences generally modeled as exogenous "types"; fixed over time (exception of inter-generational transmission)
- But:

1. Neuroscience:
   - Recent correlational evidence in neuroscience between brain structure and brain function:
     - Altruistic behavior is strongly correlated to the gray matter (GM) volume in the right temporoparietal junction (TPJ) of the brain (Morishima et al., 2012)
   - Experimental evidence that changes in the brain can be causally induced by mental training (e.g., Kirk et al., 2016)

2. Moral Philosophy: character develops over time through repeated actions: "we are what we repeatedly do" (Aristotle)

ALTRUISTIC CAPITAL

(Ashraf and Bandiera, 2017)

- Our theory draws on these two sets of empirical facts – that mental processes are malleable and that we can identify specific processes linked to altruism – in order to improve economics' understanding of altruistic decision-making processes
- In particular, we posit that:

Altruism is an asset that enables individuals to internalize the effect of their actions on others;

like other forms of capital it can accumulate or be depleted.

- Key prediction: propensity to engage in altruistic acts is causally increased by prior altruistic behaviour
- Raises questions about beliefs: do people misestimate their own enjoyment of altruistic action? If so, engaging in such acts- under *any* motivation - could induce significant learning, and lead to accumulation of altruistic capital.