Behavioural Game Theory

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Behavioural game theory studies how *real* rather than *idealized* subjects behave when playing games, and how *idealized* subjects *should* behave if some of the other players depart from rationality in some way.

1 Fairness

Evidence from the *Ultimatum and Dictator games* (played for significant stakes) suggests that in the ultimatum game proposers tend to make higher than predicted offers *both* because they care about fairness *and* because they fear that low offers will be rejected.

This isn't problematic for game theory *per se*: it just means that we've written down the *wrong payoffs*.

2 The Level–k Model

The level-k model is a simple model for bounded rationality.

Motivating idea: at least some players *don't reason up to infinity*.

Level-0 players chooses *randomly* according to the *uniform distribution*.
Level-1 players BR on the assumption that all opponents are level-0.
Level-k players BR on the assumption that all opponents are level-$(k-1)$.

The model is *in theory* easy to calibrate – we can use a numerical beauty contest game for that
…but: identification and calibration rely to a considerable extent on our *assumptions about level-0 behaviour*.

A conceptual question: do subjects play according to level-k because they can't reason about higher levels, or because they think that *others* can't reason beyond level-$(k-1)$?

Critique: why shouldn't higher-level players have more complicated beliefs about the distribution of the other players by level than the model allows for?