Casey O’Hara

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Proposal for Econ 260 research paper

For this paper, I am particularly interested in the effects of perceptions of distributional and procedural equity, collective action, and breakdown in cooperation in a context of natural resource management. While I am particularly interested in marine conservation, these issues are generally relevant to many environmental contexts. For example, how does unequal allocation of resources affect continued cooperation? How can institutional designs support cooperation and deter free riding? What happens if public good contribution is temporarily subsidized (e.g. financial support in a development phase)?

Fehr & Schmidt (FS 1999) offer a simple model of inequity aversion (IA) in which inequity (advantageous and disadvantageous) negatively impacts utility. Subsequent work explores parameterization (Yang et al 2016, FS 2010), prevalence of IA in the population (FS 2010), and process equity vs. outcome equity (Trautmann 2009); related work proposes other models of social preferences (e.g. Charness & Rabin 2002).

Leibbrandt & Lynham (LL 2018) designed experiments to examine how inequity affects adherence to property rights solutions in a commons situation, in context of extraction with a negative externality. They found that compliance based on allocation proportional to past extraction is dominated by equal or inverse allocation. Additionally they found that compliance under occasional enforcement dominated by none or high enforcement, suggesting a role for social norms that are crowded out by enforcement.

Bendor & Mookherjee (BM 1987) model ongoing collective action as an *n*-person repeated prisoner’s dilemma game, comparing game theoretical cooperation in decentralized, centralized, and federated institutions of collective action. Their model introduces participants with differing costs to participate in collective action, punishment schemes to enforce against free riding, and imperfect information/monitoring. Related work explores breakdown of cooperation in repeated prisoners dilemma games in both theoretical and experimental aspects (e.g. Embrey et al. 2017).

Of these, only LL 2018 presents an environmental context, and that is a simple extraction without feedback into a dynamic ecological system. I think there is an opportunity to create a model that incorporates natural resource dynamics with a collective action component, e.g. common monitoring/enforcement against poaching, in which private benefits and/or contributions to the common good are heterogeneous. With such a model, it would be interesting to explore breakdown in cooperation using the BM 1987 *n*-person repeated prisoner’s dilemma game, and how this feeds back into the dynamics of the stock. BM 1987 offers insights about cooperation, free riding, and enforcement based on decentralized vs. centralized institutions, while LL 2018 offers insights about institutions potentially crowding out social norms based on IA.

With such a foundation in place, extensions could incorporate utility reduction via IA to see impacts on cooperation thresholds relative to a non-IA baseline, or explore impacts of a start-up subsidy (e.g. external support in the initial years of a conservation initiative) that is later removed, effectively increasing the cost of continuing cooperation.