Where is Envy Freeness fair? Lessons from System Justification Theory

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Background

- *Fair Division* is a subfield concerned with analyzing fair ways of distributing goods to agents with diverse preferences.
- One notion of fairness is *Envy Freeness (EF)*: that no agent would rather have the goods allocated to someone else.
- *Using EF as a fairness metric assumes envy ⇔ unfairness*

Envy Freeness is popular, and growing in scope

- From 2018-2021, over half the Fair Division papers at ACM EC focused on EF or a related metric.
- Fair Division is often motivated by small-scale use cases, but recently it has been proposed as a solution in larger settings: *food banks, school systems, public goods funding, border disputes…*

People have ego, group, and system justification impulses

- *System Justification Theory* explores how personal and contextual factors modulate these impulses.
- *EF satisfies an Ego Justification need, since it gives guarantees to individual agents.*
- *Group-based offshoots satisfy group justification.*

EF is best when system justification impulses are weaker, or align with ego/ group justification impulses

System justification impulses are modulated by, e.g.,
- **Scale**: in more localized settings, participants are less likely to consider groups or systems.
- **System longevity:** study participants saw capitalism and caste systems as more legitimate when told they had been around for longer.

Example: ego and system justification impulses conflict in discourse on wealth inequality

- For some conservatives, (benign) envy of billionaires is present, but situation is perceived fair.
- For some liberals, no envy of billionaires is present, but situation is perceived unfair.
- *For large swaths of people on both sides of the political spectrum, envy is orthogonal to unfairness.*

To design the best mechanisms, researchers should consider diverse psychological needs

- In general, technologoul interventions should reflect social realities.
- In the case of Fair Division research, this means understanding how all three types of justification impulses interact in a given use-case.

Kyropoulou *et al* 2018 show that EF is preferred in **small-scale lab experiments**

Public Goods funding in cities (Fain 2018): *"[our solution] can be thought of as enforcing envy-freeness across demographics…"*

System Justification Theory supports the claim that EF fails to capture fairness r.e. **wealth inequality**

Scale of use cases