Other-Regarding Preferences: Theory and Evidence

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GENERAL OUTLINE

- Economic Rationality is Individual Optimization and Group Equilibrium
- Narrow version: Restrictive Assumptions about Objective Function
- Narrow version fails empirical tests.
- Motivates theory to develop broader notions of rationality.
- Motivates study of the performance of standard institutions with non-standard preferences.
- Motivates study of new institutions that perform well with non-standard preferences.

MORE OUTLINE

1. Today: Evidence of failure of narrow version. Discussion of theoretical alternatives.
   An informal interview of a large, mature literature.
2. Tomorrow: Performance of Competitive Institutions with General Preferences.
   A narrow discussion of two recent research articles.
3. Thursday: Different Institutions for General Preferences.
   A speculative discussion of possibilities.

Basic Set Up

- Finite set of I agents.
- Agent i selects strategy $s_i \in S_i$, $S = \Pi_i S_i$
- Outcome, $O(s) = (x_1, \ldots, x_I)$ is income distribution.
- Utility functions u_i

Central Question: What is the domain of u_i?

Classic Market Experiments

Under a broad range of conditions, experimental markets conform to predictions about competitive behavior.

Ultimatum Game

Proposer picks $x = (x_1, x_2)$. Responder picks between x and $(0, 0)$

Model 1 predicts no rejections. Model 1 plus equilibrium refinement predicts proposer gets (nearly) everything.

Ultimatum Game Results

1. Low offers rejected.
2. Tendency for $50 - 50$ splits.
3. Adding strategies matters.
4. Audience Effects.
5. Selection Effects.

Audience

- With probability p, Nature picks x_0. Final allocation $(1 - x_0, x_0)$.
- With probability $1 - p$, Dictator picks x. Final allocation $(1 - x, x)$.
- Receiver only observes final allocation.
- When p is high, dictators offer x_0 more.

Selection

- Treatment 1: Standard dictator game. Final allocation $(1-x, x), x \in [0, M]$. Receiver told procedure.
- Treatment 2: Dictator given a choice of $C \leq M$ and final allocation $(C, 0)$ or playing standard dictator game. Receiver told procedure only if Dictator rejects C.

Model 1: Traditional

u_i depends only on x_i.
Good news: Elegant, refutable, easy to explain.
Bad news: Refuted.

Model 2: Distributional Preferences

u_i depends on x.
Representative functional form:

$$u_i(x) = x_i + \sum_{j \neq i} \lambda_{ij}(x).$$

Cases:

1. $\lambda \equiv 0$ Model 1.
2. $\lambda \equiv cx_j > 0$, "altruism," $c = 1$, "utilitarianism"
3. $\lambda \equiv -cx_j < 0$, "spite."
4. and more ...

Inequity Aversion

$$\lambda_{ij}(x) = \begin{cases} -\alpha_i x_j, & \text{if } x_i < x_j \\ \beta_i x_j. & \text{if } x_i > x_j \end{cases}$$

Here an agent's utility is increasing in the wealth of poorer agents and decreasing in the wealth of richer agents.

Charness-Rabin

$$\lambda_{ij}(x) = \begin{cases} \alpha_i x_j, & \text{if } x_i < x_j \\ \beta_i x_j, & \text{if } x_i > x_j > \min x_k \\ \gamma_i x_j & \text{if } x_j = \min x_k. \end{cases}$$

Here an agent's utility is increasing in the wealth of all agents. Extra weight given to poorer agents than richer agents, special treatment for the poorest. (Weighted average of individual wealth, utilitarian, and Rawlsian.)

Descriptive Power

- IA can handle basic ultimatum game's results.
- CR cannot.
- Neither handle sensitivity to strategic context.
- Neither are formulated to handle audience effects.
- CR find examples where agent sacrifices own payoff to improve total payoff.
- Both models capture some features of relative standing.

Uncertainty about Preferences

Levine postulates:

$$U_i(x) = x_i + \sum_{j \neq i} \frac{\alpha_i + \beta_i \alpha_j}{1 + \beta_i} x_j$$

where α_i is an altruism parameter and β_j is the weight that i places on js preferences.

$\beta_i = 0$ "conventional" altruism.

Otherwise: i cares more about agents who have higher altruism parameters.

Preferences depend on distribution of goods and identities of recipients.
Possibility for signaling motives when there is uncertainty about preferences.

General Consumption Goods

Stigler and Becker:

$$u_i(Z_1, \ldots, Z_m)$$

where Z_k is a "general consumption good"

$$Z_i = f_i(X_{1i}, \ldots, X_{ni}, t_{1i}, \ldots, t_{Ii}, S_1, \ldots, S_I, Y_i)$$

X_{ji} quantity of jth marketed (traditional) good available to i,
t_{ki} is agent ks input of time in the production of j,
S_k is agent ks human capital, and
Y_i represents all other inputs.

Examination

- X_{ji} and t_{ki} observable.
- $f_i(\cdot)$, S_k, Y_i arbitrary.

Hence

$$u_i(O(s), \alpha(s, \theta))$$

θ personal characteristics,
α parameter.

- More general than distributional preferences.
- Preferences over outcomes can change as a result of changes in non-observables.

Identity

Akerlof and Kranton:

$$u_i(a_i, a_{-i}, I_i(a_i, a_{-i}; c_i, \varepsilon_i, P)),$$

a_i – action,
$I_i(\cdot)$ – "identity,"
c_i – social category,
ε_i – characteristics,
P – "prescriptions" (how people in a category "should" act)
Mathematically equivalent to Stigler-Becker ($\alpha_i \equiv I_i$).

Context: Intrinsic Reciprocity

Two player game, $i \neq j$:

$$u_i(s_i; s^*) = v_i(O(s)) + \alpha_i^G(s^*)v_j(O(s)).$$

$s = (s_i, s_j^*)$
G is the game.
v (traditional) payoff function of the game.
s^* embodies beliefs about intentions.

Repeated Games: Instrumental Reciprocity

Consider:

$$(1-\delta)u_i(s_i, s_{-i}) + \delta V_i(s, h),$$

where δ is a discount factor,
$u_i(\cdot)$ is a stage-game payoff,
(s, h) describes the history of play,
$V_i(\cdot)$ is a continuation equilibrium payoff.
By the folk theorem, when δ is close to one, there are few restrictions on $V_i(\cdot)$.
Hence there is no reason to expect an agent to select s_i^* to maximize $u_i(s_i, s_{-i}^*)$

APPLICATIONS

- Charitable Donations
- Incentives and Efforts
- Markets
- Repeated Interaction

WHERE DO THEY COME FROM?

What determines preferences?
Conventional: Fundamental characteristic of individuals.
SO: No restriction on the nature of preferences (or even the domain of preferences)

EVOLUTIONARY APPROACHES

Basic Set up:
Agents interact in strategic setting.
Payoffs are "fitness" – reproductive success.
The object of selection is either:

1. Strategies: How one plays.
2. Preferences: What one maximizes.

Central question: What are stable outcomes? In particular:
Are Nash Equilibria (with respect to fitness) Stable?
Stated grandly: Do selection arguments require agents to be fitness maximizers?

CAVEATS

- Object of Selection
- Level of Selection (econ models at individual)
- Existence Problems

Reciprocal Altruism

Instrumental Reciprocity in an Evolutionary Framework.

Green Beards

Imagine the existence of a signal with two properties:
If you could make the signal, you are guaranteed to play in a certain way. You can recognize the signal if and only if you can make the signal.
(Richard Dawkins calls the signal a "green beard.")

Green Beards can Invade

Suppose population plays Prisoner's Dilemma. Imagine a "mutation" allowing a small fraction of green beards to enter. They have selective advantage. (Green beards cooperate with each other and not with others.)

Green Beards are Not Stable

If Green Beards can invade, what about someone who can grow and recognize the beard, but doesn't cooperate?
Empirical Question:
Are there different costs to developing new signals and "lying" about them? If so, why?

Kin Selection/Group Selection

Naive Argument: A strategy that is good for a group can survive.

Sophisticated Argument: A strategy that is good for a group can survive if there are many groups with (in a precise sense) greater heterogeneity across groups than within them.

Loose logic: An "altruistic" strategy can be costly inside a group but make the group sufficiently successful that it can still maintain (or increase) representation within the population.

Summary of Evolutionary Arguments

- No reason to think that fitness maximization is a consequence of selection.
- Reason to think that fitness maximizers will be present in population.

Dalai Lama

If you would like to be selfish, you should do it in a very intelligent way. The stupid way to be selfish isthe way we always have worked seeking happiness for ourselves alone.The intelligent way to be selfish is to work for the welfare of others.

CONCLUSION

Rationality and Equilibrium remain powerful tools for the economist.
There is strong evidence that the domain of preferences is larger than is typically assumed.
Broadening the domain leads to models that :

1. are more descriptive.
2. can capture fairness, spite, and tastes for reciprocity.
3. have (temporally) inconsistent choices over outcomes.