

Self-Interest, Rationality, and Probabilistic Sophistication

Experimental Evidence Contradictory
to Traditional Assumptions

What is Self Interest?

- **Preferences and Utility**
- Smith 1776, Wealth of Nations
 - “It is not from the benevolence of the butcher, the brewer, or the baker that we expect our dinner, but from their regard to their own interest”
- Smith 1759, Theory of Moral Sentiments
 - “How selfish soever man may be supposed, there are evidently some principles in his nature, which interest him in the fortune of others, and render their happiness necessary to him, though he derives nothing from it, except the pleasure of seeing it.”

Narrow Self-Interest

- ***Homo Economicus (ECONO MAN)***
 - An individual who does not care per se for the outcomes and behaviors of other individuals
- Individuals solely care about the *outcome* of an economic interaction and not about the *process* through which this outcome is attained.
- Individuals solely care about what they *personally* gain and lose through an interaction and not what others gain or lose (or the others' intentions)

What is Rationality? (Classical)

- Individuals take actions which maximize their (expected) utility perfectly using all available information available

What is Rationality (Modern)

- Camerer:
 - First, individuals form, on average, **correct beliefs** about events in their environment and about other people's behavior
 - Second, given their beliefs, individuals choose those actions that **maximize their utility**.
- Binmore:
 - A rational decision is one that assesses the implications of alternative choices as accurately as possible given the evidence available and the cost of obtaining new evidence, and choose a course of action that is best fit to achieve the decision-maker's goals.”

What is an Experiment?

- Economic experiments
 - are motivated by (and designed to) answer economic questions
 - test economic theories
 - gather insight into economic decisions
- Economic experiments usually attempt to control
 - the choice sets (**what decision makers can do**)
 - the information conditions (**what decision makers know**)
 - the monetary incentive structure (**how decisions translate into outcomes, i.e. \$\$\$**)
- Upon arrival subjects are given instructions detailing these features.

Examples

- Beauty Queen Contest
- Ultimatum Game
- Dictator Game
- Public Goods Game (Prisoner's Dilemma)

Beauty Queen Contest

- Everyone choose a number between **0 to 100**
- Whoever's guess is closest to **$2/3$** of the average of the numbers wins **\$\$\$**

At the height of its popularity, between 15 and 20 million votes were cast per year—a turnout second only to the Presidential elections.



Toni Owen

Meet the six lovely candidates for Miss Rheingold 1957, chosen by a panel of famous judges that included Bob Cummings, Irene Dunne, Joan Fontaine, Ida Lupino, Ed Sullivan and William Perling and George Sinton.

Now you become the final judge. Your vote—and the votes of your friends—will help elect Miss Rheingold 1957.

Prize and fortune for the winner. The girl who wins the title wins a contract worth \$50,000, expense-paid trips to Hollywood and Europe, plus all the fun and fame of starring in next year's Rheingold advertising.

Time to fill those buffet boxes. You can help your favorite candidate. Just look for the Miss Rheingold Election Buffet Box at any Rheingold store or tavern. And cast your vote—today or any day through September 30.

Kathleen Wallace



Beverly Christman

Which will You elect Miss Rheingold 1957?

Pick the girl who'll win a contract worth \$50,000!
Vote at any Rheingold store or tavern!

Marge McNulty



Sheryl Reed

Every vote counts. All ballots are checked and tabulated by an independent research organization that certifies the accuracy of the final tally.

To join in the fun of choosing a new Miss Rheingold—cast your ballot along with the millions of people who've made this the second-largest election in America.

And join those same millions in enjoying the love Miss Rheingold represents. It's always been so—beer should taste. And your approval of Rheingold Extra Dry has made it the largest-selling beer in the East!



Misses' Dresses for women Miss L 14 pattern size 16-18. (Ladies' Dresses, Inc., New York, N. Y.)

Diane Barber



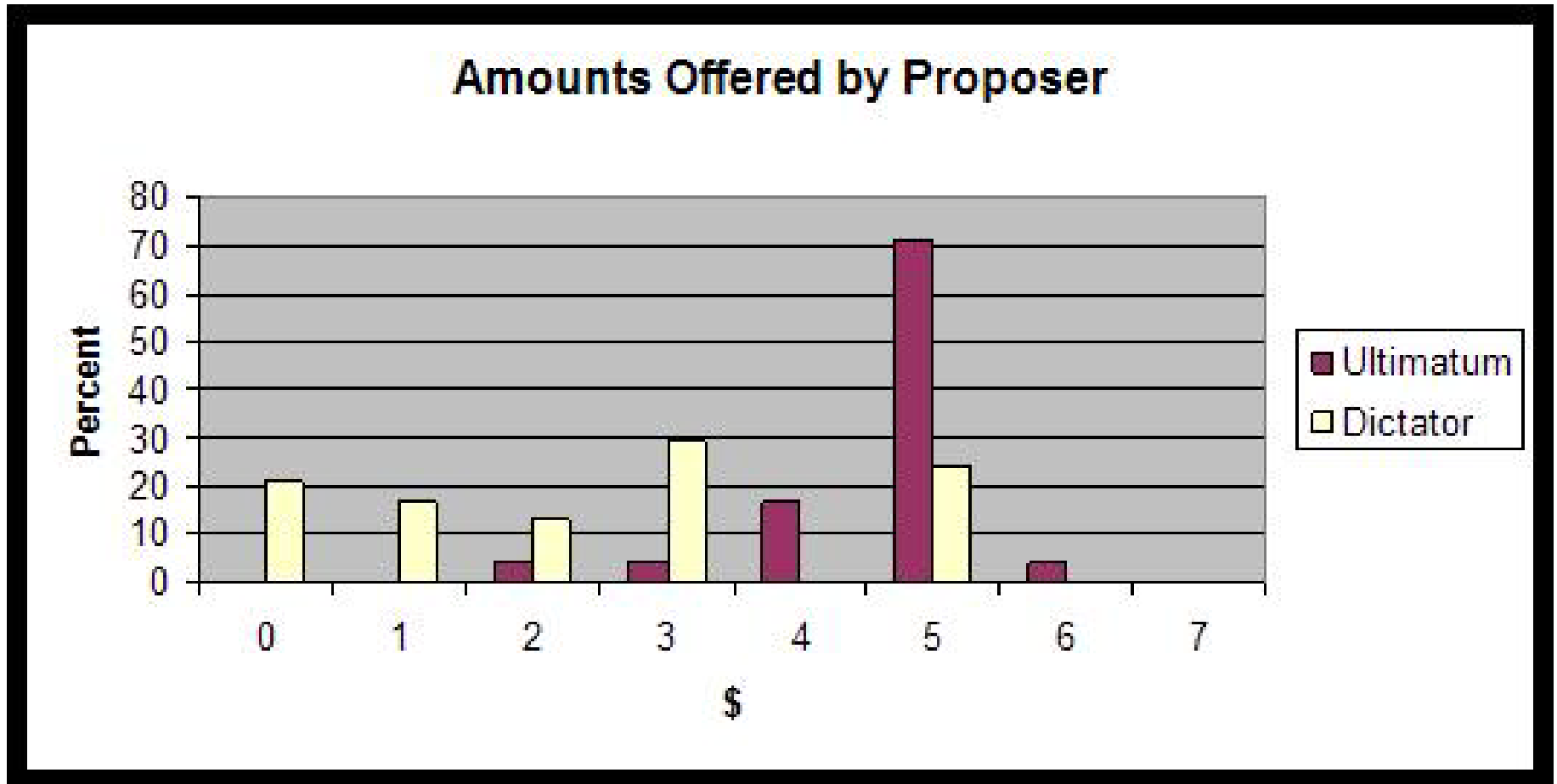
Ultimatum Game

- The “**proposer**” in this game is provisionally assigned an amount and asked to propose an offer to a second person, the “**respondent.**”
- The respondent may then either **accept** the offer, in which case the two players receive the proposed amounts, or **reject** it, in which case the two receive nothing.
- Implemented in over a hundred studies in two dozen countries with strikingly uniform results.

Ultimatum Game – Results

- In student populations, modal offers in the UG are almost always **50%**, and mean offers are between **40% and 45%**. Responders reject offers of 20% about half the time.
- Raising the stakes to quite high levels (e.g., three months' income) does not substantially alter the basic results (Camerer & Hogarth 1999; Cameron 1999; Hoffman et al. 1996a; List & Cherry 2000; Slonim & Roth 1998).
- In fact, at high stakes, proposers tend to offer a little more, and responders remain willing to reject offers that represent small fractions of the pie (e.g., 20%) even when the pie is large (e.g., \$400 in the United States; see List & Cherry 2000).

Ultimatum Game – Results



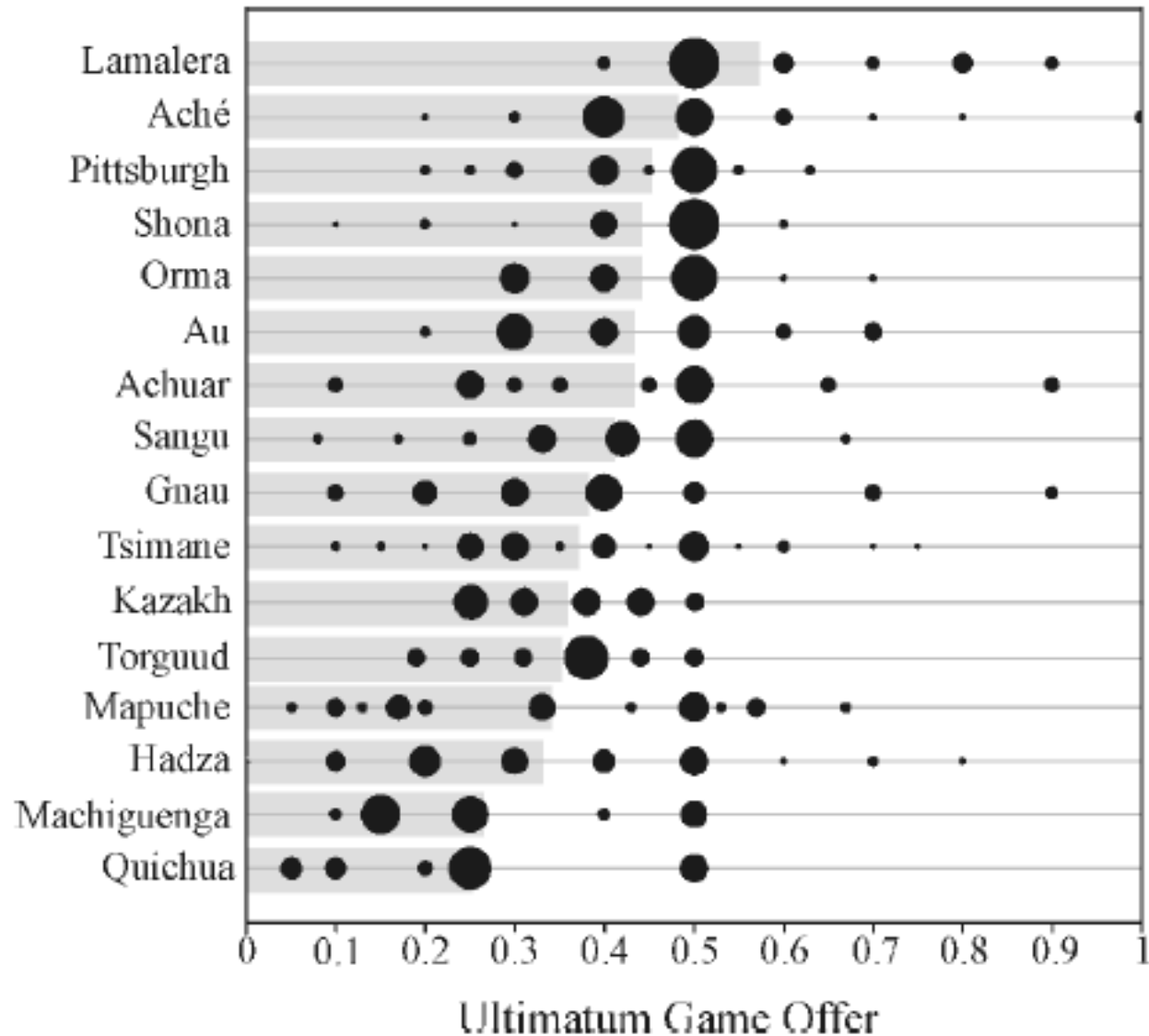
Forsythe, et al (1994)

UG: A Large Cross-Cultural Study

- Henrich, et al ('05) Study behavior in Ultimatum, Dictator, and Public Goods Games.
- Twelve countries on four continents and New Guinea
- Subjects from fifteen small-scale societies exhibiting a wide variety of economic and cultural conditions.
- Three foraging societies, six that practice slash-and-burn horticulture, four nomadic herding groups and two sedentary, small-scale agricultural societies.



Ultimatum Game: Distribution of Offers



Group	Country	Mean offer ^a	Modes ^b	Rejection rate ^c	Low-offer rejection rate ^d
Machiguenga	Peru	0.26	0.15/0.25 (72)	0.048 (1/21)	0.10 (1/10)
Hadza (big camp)	Tanzania	0.40	0.50 (28)	0.19 (5/26)	0.80 (4/5)
Hadza (small camp)	Tanzania	0.27 (38)	0.20 (8/29)	0.28 (5/16)	0.31
Tsimané	Bolivia	0.37	0.5/0.3/0.25 (65)	0.00 (0/70)	0.00 (0/5)
Quichua	Ecuador	0.27	0.25 (47)	0.15 (2/13)	0.50 (1/2)
Torguud	Mongolia	0.35	0.25 (30)	0.05 (1/20)	0.00 (0/1)
Khazax	Mongolia	0.36	0.25		
Mapuche	Chile	0.34	0.50/0.33 (46)	0.067 (2/30)	0.2 (2/10)
Au	PNG	0.43	0.3 (33)	0.27 (8/30)	1.00 (1/1)
Gnau	PNG	0.38	0.4 (32)	0.4 (10/25)	0.50 (3/6)
Sangu farmers	Tanzania	0.41	0.50 (35)	0.25 (5/20)	1.00 (1/1)
Sangu herders	Tanzania	0.42	0.50 (40)	0.05 (1/20)	1.00 (1/1)
Unresettled villagers	Zimbabwe	0.41	0.50 (56)	0.1 (3/31)	0.33 (2/5)
Resettled villagers	Zimbabwe	0.45	0.50 (70)	0.07 (12/86)	0.57 (4/7)
Achuar	Ecuador	0.42	0.50 (36)	0.00 (0/16)	0.00 (0/1)
Orma	Kenya	0.44	0.50 (54)	0.04 (2/56)	0.00 (0/0)
Aché	Paraguay	0.51	0.50/0.40 (75)	0.00 (0/51)	0.00 (0/8)
Lamelara ^e	Indonesia	0.58	0.50 (63)	0.00 (3/8)	0.00 (4/20)

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- Offers are on average between 20-30%, while offers of 0 (63%) and .5 are most common (Camerer, 2003).

Dictator: Red Cross

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- Eckel and Grossman (1996) perform experiments where “charitable organizations” (such as The American Red Cross) are the intended recipient instead of an anonymous player.
- When dictators know the recipient is the Red Cross, rather than a fellow student, **the average allocation doubles**, and were much less likely to take the entire pie for themselves (**27.1%**) versus the anonymous treatment (**62.5%**).

Public Goods Game

- Each of four anonymous subjects is initially given 20 tokens, and each is told he can place any number of these tokens in a public account.
- The tokens in the account are multiplied by 1.6 and the result divided evenly among the four.
- At the end of the experiment, the tokens are exchanged for real money.

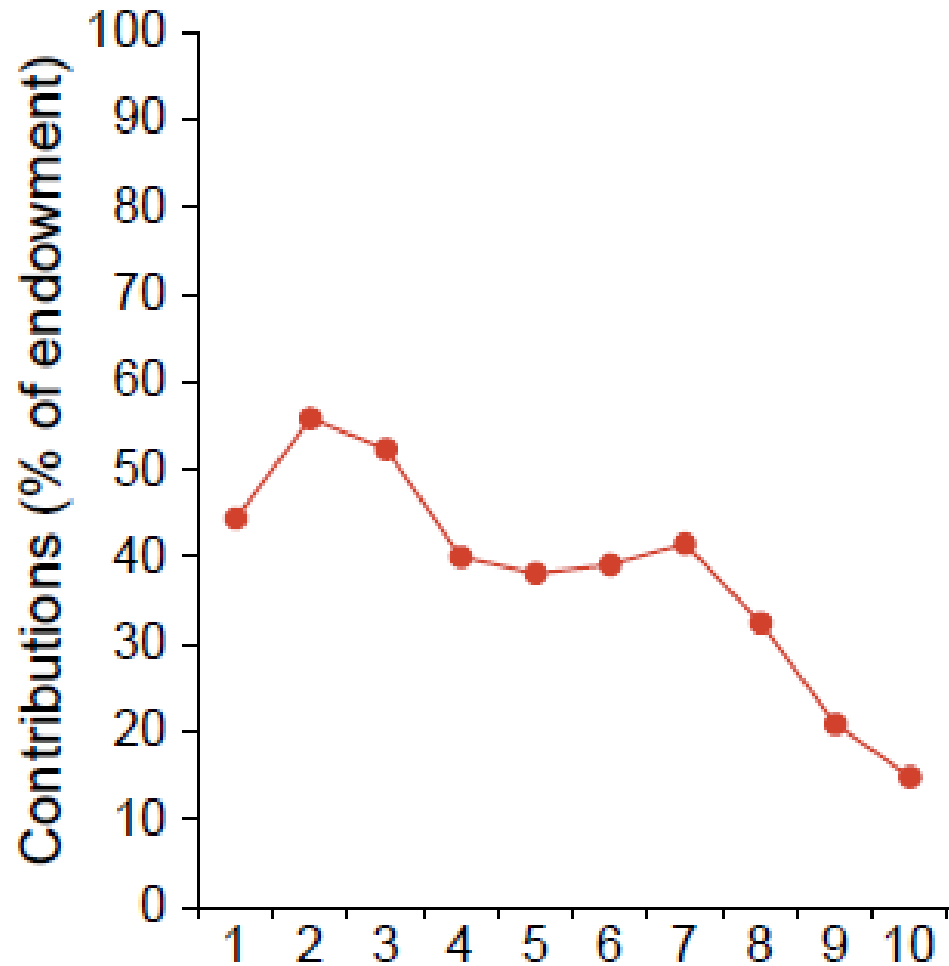
Public Goods Game (Single Shot)

- Each of four anonymous subjects is initially given 20 tokens, and each is told he can place any number of these tokens in a public account.
- The tokens in the account are multiplied by 1.6 and the result divided evenly among the four.
- At the end of the experiment, the tokens are exchanged for real money.
- Students contribute a mean amount between 40% and 60% (Henrich & Smith 2004; Ledyard 1995; Sally 1995).

Public Goods Game (Repeated)

- 10 rounds.
- Subjects witness outcome after each round
- Subjects who contributed more than average in one round contribute less in the following round
 - Perhaps showing their disapproval of the unfairness of their fellow players.
 - Indeed, a single selfish individual in the group can lead contributions to spiral down to almost zero.

Public Goods Game (Repeated)



Strong Reciprocity

- A predisposition to cooperate with others, and to punish (at personal cost, if necessary) those who violate the norms of cooperation, even when it is implausible to expect that these costs will be recovered at a later date.
- So what if individuals could punish?

PG Game (Repeated with Punishment)

