

Experimental Issues: Payment Methods

Instructor: Kohei Nitta

December 8th, 2015

What we will learn in this session?

The way of determining the **payoffs** (which means **payments**, eventually) sometimes affects the subject's decision.

In this session, we will go over the different payment schemes in laboratory experiments.

Overview of this session

- 1 Real Effort vs Assigned Valuations
- 2 How Subjects are Paid: Random Round, Average, Lottery
- 3 Payment Stakes: Hypothetical, Cash, Amount valuation
- 4 The Bankruptcy Issue: The problem with limited liability in laboratory experiments

Real Effort vs Assigned Valuations

Konow, J. "Fair Shares: Accountability and Cognitive Dissonance in Allocation Decisions," *American Economic Review*, 2000, 90, 1072-1091

→ Preparing letters

Rutström, E. and Williams, M. B. "Entitlements and fairness: an experimental study of distributive preferences," *Journal of Economic Behavior & Organization*, 2000, 43, 75-89

→ Solving a computerized puzzle

Fahr, R. and Irlenbusch, B. "Fairness as a constraint on trust in reciprocity: earned property rights in a reciprocal exchange experiment," *Economics Letters*, 2000, 66, 275-282

→ Racking walnuts

Cherry, T. L.; Frykblom, P. and Shogren, J. F. "Hardnose the Dictator," *American Economic Review*, 2002, 92, 1218-1221

Real Effort vs Assigned Valuations

Cherry, T. L.; Kroll, S. and Shogren, J. F. "The impact of endowment heterogeneity and origin on public good contributions: evidence from the lab," *Journal of Economic Behavior & Organization*, 2005, 57, 357-365

Experimental design:

- Treatment: Taking a quiz containing 17 questions taken from the sample section of the Graduate Management Admission Test in 45 min
- Four-subject public good game with (windfall or earned) endowments

Results:

- Subjects contributed about the same level regardless of whether their wealth was earned or windfall
- Contribution levels were significantly lower when groups had heterogeneous rather than homogeneous endowments

How Subjects are Paid

Sherstyuk, K.; Tarui, N. and Saijo, T. "Payment schemes in infinite-horizon experimental games," *Experimental Economics*, 2013, 16, 125-153

The infinite-horizon models assume that the subjects maximize the infinite sum of their discounted payoffs across periods

→ This calls for the cumulative payment scheme

Limitations:

- a game that continues into each next period with probability p is theoretically equivalent to an infinite-horizon game with the discount factor p only under the assumption of risk neutrality
- a possible concern is that large variations in the actual number of periods realized under random termination may result in large variations in cumulative payments to subjects

How Subjects are Paid: Sherstyuk et al. (2013)

Three payment schemes in infinite-horizon experimental games (PD):

- cumulatively for all periods of the game
- for the last period only
- for one of the periods, chosen randomly

→ **Cooperation rates** are not significantly different under the cumulative and the last period payment schemes, but they are significantly lower under the random payment scheme.

→ The random period pay is not an acceptable alternative to the cumulative pay in inducing dynamic incentives in indefinite-horizon games, since it creates a present-period bias.

Slonim, R. and Roth, A. E. "Learning in High Stakes Ultimatum Games: An Experiment in the Slovak Republic," *Econometrica*, 1998, 66, 569-596

Cameron, L. A. "Raising the Stakes in the Ultimatum Game: Experimental Evidence From Indonesia," *Economic Inquiry*, 1999, 37, 47-59

Munier, B. and Zaharia, C. "High Stakes and Acceptance Behavior in Ultimatum Bargaining," *Theory and Decision*, 2002, 53, 187-207

Carpenter, J.; Verhoogen, E. and Burks, S. The effect of stakes in distribution experiments *Economics Letters*, 2005, 86, 393-398

→ One result in the literature is that respondents do not markedly change their behavior as the stakes increase

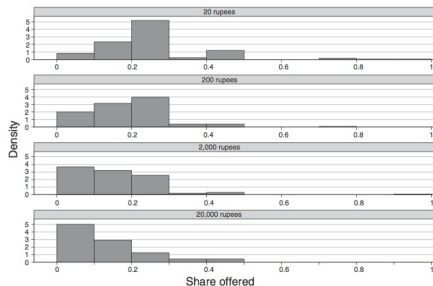
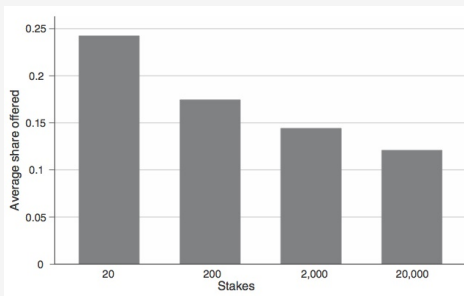
Andersen, S.; Ertac, S.; Gneezy, U.; Hoffman, M. and List, J. A. "Stakes Matter in Ultimatum Games," *American Economic Review*, 2011, 101, 3427-39

Experimental design:

→ Poor villages in Northeast India

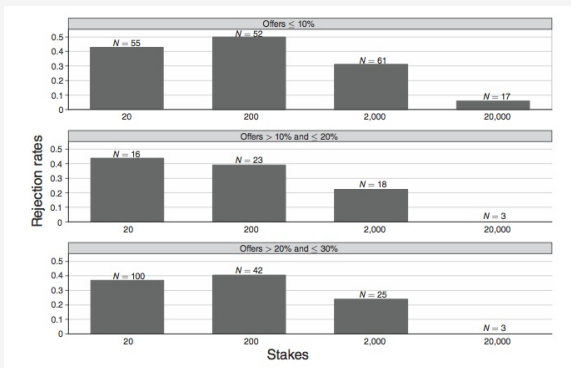
→ The range of "endowment" is from 20 rupees to 20,000 rupees (1.6 hours to 1,600 hours of work)

Payment Stakes: Andersen et al. (2011)



→ Proposer: While the offer proportions are significantly lower in the higher stakes treatments compared to the lowest stakes treatment, the actual amount offered increases as stakes increase.

Payment Stakes: Andersen et al. (2011)



→ Responder: At low stakes we observe rejections in the range of the literature, in the highest stakes condition we observe only a single rejection out of 24 responders.

FÜLLBRUNN, S. and NEUGEBAUER, T. LIMITED LIABILITY, MORAL HAZARD, AND RISK TAKING: A SAFETY NET GAME EXPERIMENT
Economic Inquiry, 2013, 51, 1389-1403

- The behavior in the safety net game where individual players face limited liability is benchmarked with the behavior under full liability, where individual decision making occurs in the absence of a safety net
- In both treatments, the average loss avoidance levels are chosen in the interior upper half of the action space.