Seeking to Understand Empathy Using Variations of the Empathy Game

Material self-interest motivates, but other motivators exist and can over-ride material self-interest. The investment game, also known as the trust game, of Berg et al (1995) provides evidence that positive reciprocity is a motivator that can over-ride material self-interest. The ultimatum bargaining game of Guth et al (1982) provides evidence that a social preference, a concern for fairness in particular, can also motivate and over-ride material self-interest. This presentation examines results obtained from an experiment game called the empathy game, a novel game that has been designed to isolated and examine empathy as a motivator.

The design of the trust game inspired the design of the empathy game. In the trust game, a first mover decides how much of an endowment to put at risk by transferring a portion of it to a second mover. By taking this risk, the first mover is placing trust in the second mover because the second mover has the opportunity to make a back-transfer. Trust is productive in the trust game in that the amount received by the second mover is triple the amount sent by the first mover. The first mover is taking risk and placing trust in the second mover because the second mover may make a back-transfer to the first mover, but the second mover is not required to back-transfer anything. If material self-interest is the sole motivator, then the second mover will not back-transfer anything. Knowing this, a first mover motivated purely by material self-interest will not trust, meaning the predicted transfer is zero. Contrary to this Nash prediction, Berg et al (1995) find a significant share of first movers trust by making transfers, and a significant share of second movers are trustworthy in that they provide positive back transfers such that the interaction between the two subjects is materially mutually beneficial.

While the trust game is one of the most creative and important games in experimental economics, it does not allow us to clearly understand the motivations of the participating

subjects. We know there is motivation beyond pure material self-interest because we observe trust and trustworthiness. However, there are confounds. Positive reciprocity and altruism may each be motivating the second mover to provide a back transfer. Altruism, a desire to see value created, a belief that positive reciprocity or altruism motivates the second mover, may each be motivating the first mover to make a transfer.

We can think of the empathy game as a simplified version of the trust game. In the empathy game, the first mover has an endowment and can risk a portion of that endowment. As in the trust game, the first mover places trust in second mover by taking risk. However, the second mover does not receive the amount put at risk as a transfer. In the empathy game, the second mover simply makes the choice A or B. If the second mover chooses A, then the first mover loses the amount the first mover chose to put at risk. If the second mover chooses B, then the first mover gains the amount the first mover chose to put at risk. It costs the second mover nothing to choose A. In the standard game, it costs the second mover at least a small amount to choose B.

In the empathy game, the first mover can still display trust, but there are fewer candidate explanations for observed trust. If the first mover takes risk, it is not out of a desire to see value created because the risked amount is not tripled. The first mover is not materially benefitting the second mover by taking risk, so and observed trust is not an appeal to material positive reciprocity. The "empathy game" gets its name because empathy is the primary remaining possible motivator. The second mover implicitly has the opportunity to "help" the first mover by choosing option B. If choosing B is costly, the Nash equilibrium action is not to help and choose A. Knowing this, a materially self interested first mover which choose not to trust and risk nothing. That is, as in the trust game, the Nash equilibrium for the empathy game is no trust.

The key question in the empathy game is whether the empathy the second mover may possess for the situation of the first mover be sufficient to over-ride the cost the second mover must pay to help.

The presentation will present results of from three sets of empathy game experiments. One set examines a loss environment; one set examines a gain environment, and one set seeks to identify empathy in the loss environment separate from altruism.

In the loss environment, the first mover earns a $16 endowment, but then faces a $10 loss. By reaching out to the second mover as described above and risking 2, 4, 6, 8 or all 10 of the remaining $10, the second mover can reduce the loss or even obtain a gain. There are three treatments: (1) choosing option B costs the second mover nothing, (2) choosing B costs a fixed $2, and (3) choosing B increases as the first mover risks more.

The gain environment experiment is the same as the loss environment experiment, except the first mover does not receive a loss. By comparing behavior in the gain environment to the loss environment, we can measure the extent to which people have more empathy for someone who has experienced a loss.

Our final experiment includes two dictator games (e.g. Forsyth et al, 1994), we can measure how much of the second mover response (i.e. empathy) is motivated by the first mover reaching out. In our dictator game, the first mover does not take risk. Rather, the second mover can simply pay to change the outcome of the first mover, in one treatment where the first mover has experienced a loss and in another treatment where the first mover has not experienced a loss.