DISCUSSION PAPER SERIES

No. 6853

EQUITY AVERSION

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ISSN 0265-8003

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Discussion Paper No. 6853
June 2008

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CEPR Discussion Paper No. 6853

June 2008

ABSTRACT

Equity Aversion

Models of inequity aversion and fairness have dominated the behavioural economics landscape in the last decade. This study gathers data from 240 subjects exposed to variants of two of the major experimental games - dictator and trust - that are employed to provide important empirical content to these models. With a set of simple laboratory treatments that focus on a manipulation of an important feature of real markets, competition over resources, we show that extant behavioural models are unable to explain data drawn from realistic manipulations of either game. Our empirical results highlight that if placed in an environment wherein socially acceptable actions provide one person with a greater portion of the rents, people will put forth extra effort to secure those rents, to the detriment of the other player. In this manner, when one can earn more than the other player through actions deemed customary, people reveal a preference for *equity* aversion, not inequity aversion. We propose an alternative modelling approach that can explain these data as well as accommodate other major data patterns observed in the experimental literature.

JEL Classification: C91 and Z13
Keywords: equity aversion, social preferences and social status

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Submitted 28 May 2008

I. Introduction

There can be little doubt that the mythical species *Homo Economicus,* with unwavering rationality, unbounded ability to compute solutions to difficult optimization problems, and an unrepentant selfish attitude has served economists well. Indeed, it is difficult to find another paradigm that permits such crisp insights into modeling human behavior. Yet, increasingly the neoclassical approach has been challenged as an unrealistic account of human behavior. Only until more realistic features are added to the model, behavioral economists argue, will economic science reach its full potential.[1]

Perhaps the most influential movement in the past three decades involves the modeling of "social preferences." By now, the literature is replete with theoretical research exploring the economic consequences of social preferences, wherein agents have preferences that are measured over their own and others' material payoffs. The models that have attracted the most attention are the inequity aversion, or "fairness" models due to Fehr and Schmidt (1999) and Bolton and Ockenfels (2000). These models are driven by the notion that economic agents are averse to inequity in payoffs: people dislike earning less than their counterparts, but they also have distaste for earning more than them.

The assumption that people dislike receiving less than their counterparts has empirical support from an array of laboratory experiments, most notably the plethora of ultimatum game studies that find agents oftentimes reject unfair offers (e.g., Guth Schmittberger and Schwatze, 1982). The other half of the equation—that people dislike receiving more than their counterparts—is supported by less experimental evidence. The most widely cited evidence is from laboratory dictator games, where more than 60% of subjects usually pass a positive amount of money, with the mean transfer roughly 20% of the

[1] Some early returns in this spirit have already been reaped, as discussed in Levitt and List (2008).

agent's endowment. Similar behavior is observed in related strategic games—for example, trust and gift exchange games—where the fact that agents transfer money back and forth is interpreted as evidence that agents dislike receiving more than their counterpart, though such behavior is also consonant with other motivations.

This paper takes this literature in a different direction by first considering results from simple manipulations of these two classes of games. Our dictator game baseline treatment is in the spirit of the traditional dictator game conducted in the literature: the agent decides whether to dictate an equal split ($8-$8) or an unequal split ($11-$2) of the endowment. The novelty is that after this allocation decision, subjects can continue the experiment by performing a task of solving problems for up to 30 minutes. Subjects are informed that they are not compensated for the task, at any time they can leave the experiment, and that afterwards their performance will be compared to the anonymous person in the other room and each person will be informed of the results. Our comparison treatment is identical to this baseline dictator game except payment is determined by performance on the problem solving task: if the dictator outperforms the recipient, the uneven split of $11-$2 is effective; otherwise, the even split of $8-$8 results.

The findings are stark. In line with the literature, we find that roughly three quarters of the students opt for the equal split in the baseline dictator game. Given this finding, if inequity aversion is the primary driver of behavior, then we should find that effort in the task among dictators in the comparison treatment is considerably less than task effort in the baseline treatment. Intuitively, it is simple in this case to dictate an equal split: merely commit zero effort in the task and leave the experiment early. We find results in direct opposition to this prediction—subjects in the comparison treatment invest more time in the task, attempt more problems, and solve more problems correctly than their counterparts in the baseline treatment. Interestingly, this result holds for both men and women, and hints that something much different than fairness in payoffs motivates behavior in this game.

Our parallel sequential trust game experiment begins with a baseline treatment that has the proposer making the dichotomous decision of whether to transfer $7 to an anonymous counterpart. The literature's preferred interpretation of this decision is that it measures the level of "trust" of the proposer. If the money is transferred, then the recipient receives $20 and decides what portion of that $20 to send back to the proposer. The remainder of the experiment is identical to the dictator game baseline. The comparison treatment has the proposer transferring $0 to the recipient if she outperforms the recipient on the task, otherwise she transfers $7 to the recipient. The recipient, who views the results of the task, then decides how much to send back to the proposer.

Empirical results are similar to the dictator game: time invested, questions attempted, and the number of correct responses are all higher in the comparison treatment than in the baseline treatment. These results, coupled with the dictator game data, suggest that when socially acceptable actions provide one person with a greater portion of the rents, people will put forth extra effort to secure those rents, to the detriment of the other player. These results imply that behavior is more critically linked to the properties of the situation, and perhaps less to the relative outcomes, than extant models presume.

Our second goal in this study is to put forth a theory that explains these findings, other related results at odds with fairness models, but one that can also accommodate data in line with fairness models. Our model recognizes that in many interactions people do care about relative payoffs. Much like in the inequity aversion models, people dislike earning less than other people. However, in contrast with inequity aversion, in many cases people are driven by the desire to earn more than others. The desire to earn more money, prestige, etc., than others represents a strong incentive to succeed (Weber (1922, reprint 1978, p.936), and Adam Smith (1776, reprinted 1937, p.107)).[2] In line with other social sciences, we call this motive "status," which we define as "the prestige attached to the person's position in society." This definition implies that we care about our ranking in society, and are motivated by our desire to have a higher ranking. That is, we wish to be more successful than others.

The remainder of our study proceeds as follows. We present the experimental design and results in the next section. Section III presents our model and a discussion of the results. Section IV concludes.

II. Experimental Design and Results

Subjects were recruited from the undergraduate student body at the University of California-San Diego in October and November of 2007. Two baseline treatments and certain manipulations of each were conducted. In all cases, participants were randomly assigned to two groups: one placed in room A ("Red" players) and the other placed in room B ("Blue" players). The two groups did not have contact before, during, or after the session. Within each group, subjects were allowed to talk only to administrators. As is typical, no subject participated in more than one treatment, thus the empirical results rely on purely between-subject variation.

The baseline treatment for the dictator game was in the spirit of dichotomous choice dictator game experiments, which began with the work of Kahneman et al. (1986): each Red player dictates whether to allocate an even amount to herself and her anonymous Blue

[2] For a survey see Fershtman and Weiss (1998) and Fershtman (2007). Relatedly, see Fershtman et al. (1996). For an excellent recent discussion, see Ellingsen and Johannesson (2007).

partner, or an uneven amount. In this case, the even amount is $8 for each player, and the uneven split is $11 and $2, in favor of the dictator. The chosen allocation determined final earnings.

The twist to the baseline treatment is that after the dictator chooses the split, both players are asked to stay and perform a task. The chosen task is determined randomly, and consists of either what might be considered an interesting task—answering GMAT questions—or a tedious task—examining a random set of letters and circling "r" when it occurs in the random set. To provide further delineation in task, we informed subjects in the GMAT condition that "The GMAT test is a challenging examination. It tests a student's quantitative abilities, verbal reasoning, and analytical writing skills under timed conditions. Diverse skills are required to attain a high score." No similar statement was made in the letter circling task.

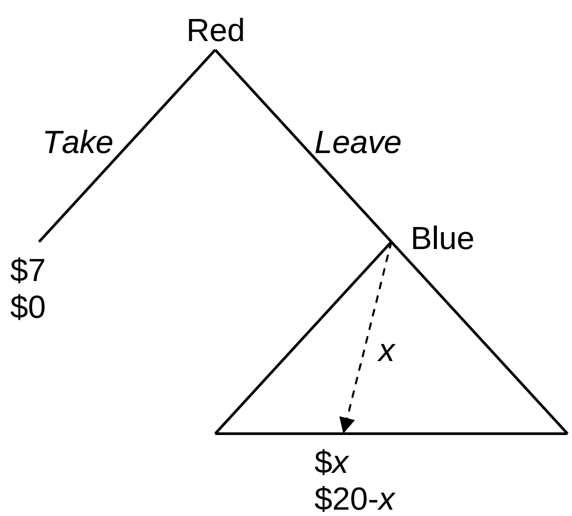
Subjects were further informed that they may terminate the experiment at any time, or spend up to 30 minutes answering the 50 GMAT questions (circling letters on pages). In addition, they were told that their individual payment was independent of their success in the task, but we reinforced that they would be informed of their own results as well as their anonymous partner's results upon conclusion of the experiment.[3] We further noted that they would not be penalized for incorrect guesses.

The comparison treatment, which we denote as a Q-Dictator game, for "Quasi-Dictator" game, is identical in every respect to the baseline treatment except the participants are informed that their performance on the task determines whether the allocation is split evenly: if the dictator outperforms the recipient on the task, the uneven split of $11-$2 is

[3] This was possible because the experiment was conducted in stages: they completed a marketing survey after this experiment to ensure they would not sit idly waiting for the results.

effective; otherwise, the even split of \$8-\$8 results. In this case, rather than having the dictator unilaterally determine outcomes as in the baseline treatment, task results from both the proposer and responder determine the split. In this treatment, proposers interested in equity or efficiency have a simple choice: commit zero effort by stopping the experiment immediately, solving no questions correctly, and effectively implementing an even split.

Completing the experimental design is our "lost wallet game" experiment (Dufwenberg and Gneezy, 2000) which explores behavior in two parallel treatments. The baseline treatment, which we denote as "trust" because it mirrors trust games in the literature, endows the proposer with \$7 and asks whether she would like to transfer all \$7 to the anonymous responder in another room. If transferred, the responder receives \$20 and then decides how to allocate the \$20. The literature broadly interprets the first mover's actions as measuring "trust" and the second mover's action as representing "trustworthiness" (see Berg, Dickhaut, and McCabe, 1995). The extensive form of our game is represented in the following figure:



Our comparison treatment is denoted as Q-Trust and directly follows the Q-Dictator treatment described above: if Red outperforms Blue on the task, she keeps the $7, otherwise the $7 is transferred to Blue, who then decides how to allocate the $20. In this case, it is particularly straightforward how the proposer can send a strong signal of trust: simply attempt to answer zero questions because the responder views task outcomes before deciding the division. Thus, we have a particularly demanding test in this case since models of inequity aversion, efficiency, and trusting behavior all predict much less effort in this treatment than the baseline game.

A. Dictator Game Results

Table 1 and Figure 1 summarize the individual data obtained from the dictator games. In sum, we had 160 subjects distributed equally across the three treatments. Of these 160 subjects, roughly half were women. We find that the baseline data are qualitatively similar to results reported in other dictator games: nearly 75% of the dictators (29 of 40) opted for an equal split of $8 per person. Models, such as the inequity aversion model of Fehr and Schmidt (1999), have used such data patterns as key evidence that people dislike receiving more than others. These data are certainly consonant with that conjecture.

If behaviour in the baseline treatment is due to social preferences as per these models, however, then a comparison of task effort levels across treatment should reveal that 75% of dictators in the Q-Dictator game do not commit costly cognitive effort to task, ensuring an even split. Yet, this data pattern is not observed. In fact, only 2 of 40 subjects committed zero effort in the GMAT and tedious tasks. Figure 1, which plots the average time invested, average number of correct answers, and average number of questions attempted for proposers across treatment, makes this point most clearly with central moments. In each comparison in

Figure 1, the proposers in the Q-Dictator treatment commit a significantly greater amount of effort than proposers in baseline.

This result holds whether the task is challenging, or tedious. For example, consider the average time invested. Whereas proposers in baseline commit between 10 and 15 minutes to the task, proposers in the Q-Dictator treatment commit nearly double that time. In doing so, responders attempt to answer more than twice as many questions, and answer more than twice as many correct (7.8 versus 21.7 and 0.4 versus 1.1). Using both parametric t-tests and non-parametric rank sum tests, we find that that each of these differences is significant at conventional levels.

Given the recent results on gender and competition that suggest women shy away from competition (see, e.g., Gneezy et al., 2003), it is important to consider how men and women responded to the Q-Dictator treatment. For instance, it might be the case that these results are entirely driven by men, as the women in the sample might decide to commit little effort in the Q-Dictator game due to their lack of competitive nature.

When parsing the data along gender lines, we observe that our effect is driven by both men and women. First, estimating regression models that have the average time invested, average number of questions answered correctly, or the average number of questions attempted for proposers as the regressand, we find that in each case both men and women increase their competitive inclinations in the Q-Dictator treatment.[4] Similar patterns exist in the raw data when imposing no structure on the data. Second, we find that there is a tendency for women to shy away from competition in the GMAT task, but the opposite occurs for the "r" task, where women on average exert more effort than men.

[4] Regressors in this model include a constant, a treatment indicator, and gender.

B. Trust Game Results

The bottom panel of Table 1 and Figure 2 summarize the individual data obtained from the trust game treatments. We had 80 subjects distributed equally across the two trust treatments. Again, roughly half were females. Similar to the dictator game, the baseline data are qualitatively in line with results reported in other trust games: roughly 50% pass the $7 to the responder, evidence that has been argued to suggest broad trusting behaviour. Since the only manner in which one can effect equal payoffs in this game is to transfer the $7 (and hope that the second player splits the $20), the inequity aversion model of Fehr and Schmidt (1999) might be called upon to describe why proposers send the $7 to the responder. This is also in line with models that include efficiency arguments (Charness and Rabin, 2003). The baseline data are certainly in the spirit of that hypothesis.

Again, however, we find a distinct movement of task effort in the comparison treatment. Figure 2 provides ocular evidence. The average time invested, average number of correct answers, and the average number of questions attempted for proposers in the Q-Trust game are all significantly higher than in baseline. As Figure 2 makes clear, these differences are quite large: in every case, the outcome measures in the comparison treatment are roughly 100% greater (or more) than the baseline treatment. Consider the average time invested. Whereas proposers in baseline commit 12.6 minutes of effort, proposers in the Q-Trust treatment commit nearly double that time, almost 25 minutes. Similar insights are gained from responder attempts and correct answers. Using both parametric t-tests and non-parametric rank sum tests, we find that that each of these differences is significant at conventional levels. Similar to the dictator game, the qualitative results hold for both men and women, but men tend to compete more intensely than women.

A further inquiry one can make into the trust game data revolves around how responders behaved in light of competition. A few results naturally arise. First, as can be gleaned from Table 1, the percentage of proposers who ultimately transfer the $7 is slightly, though not significantly, higher in the Q-Trust game. This is due in part to the responders' reaction to the incentives introduced in the Q-Trust game: their effort, average number of correct answers, and the average number of questions attempted increases substantially compared to baseline. More importantly, in our sample responders typically outperform proposers in the average number of correct answers.

Second, of those receiving transfers, the amount sent back in baseline was 6.1, which was much higher than in the Q-Trust game, an average of 2. Modeling the responder amount returned in a regression framework that includes a constant, gender, and the amount of proposer effort as regressors, we find that the amount returned by responders critically depends on the proposer's effort level in the Q-Trust game, but not in baseline. More specifically, we find that proposers who commit little effort are rewarded by responders in the Q-Trust game—lower proposer effort leads to higher payoffs. We interpret this finding as evidence in favor of a reciprocity-based model, where the ability to signal intentions is important.

III. Discussion

As a whole, these results tie nicely back to the literature that shows it is rare to find evidence for aversion against advantageous inequality or altruism in certain settings. For instance, the "best-shot" and "impunity" games, where rather extreme perfect equilibria are descriptive of behavior (see, e.g., Harrison and Hirshleifer, 1989; Roth, 1995). In addition, ultimatum games with incomplete information (e.g., Mitzkewitz and Nagel, 1993; Guth et al, 1996) and Stackelberg games with multi-dimensional action sets bolster these results.

Our results clearly suggest that if placed in an environment wherein socially acceptable actions provide one person with a greater portion of the rents, people will put forth extra effort to secure those rents, to the detriment of the other player (relatedly, see List, 2007). In this manner, when one can earn more than the other player through actions deemed customary, people reveal a preference for *equity* aversion, not inequity aversion. Our setting is one that highlights the power of the situation: by manipulating an important feature of real markets, competition over resources, we find that people react in a manner consistent with *equity aversion*.

This section aims to provide some direction into a different approach to modeling behavior in such games. We begin by taking note of the fundamental differences between Economics and Sociology models, which can be traced to their different views regarding human behavior. Contrary to our mythical species *"Homo Economicus,"* in Sociology there is a different dominant type of player, named "*Homo Sociologicus*." "*Homo Sociologicus*" is a passive player whose behavior is governed not entirely by free choice but by following prescribed norms of behavior, social customs, and inertia forces (Elster, 1989). The social norms are a prescription of behavior for different circumstances that is common to a group of individuals and therefore are labeled as "social norms." There is a group of individuals that share and behave according to the same social norm.

Such social norms are indeed powerful. We all give tips at restaurants, we help the elderly when placed in a situation to do so, and we observe local rituals as far fetched as kissing a turtle's feet for good luck prior to basketball games. Why do people follow social norms? When norms are conventions that do not contradict self interest, then following the norm does not create a dilemma. For example driving on the left side of the road or kissing a turtle's feet do not contradict self interest. But, what if the social norm contradicts self interest? A norm that advocates a fair behavior, giving a tip, donating to a public charity, or not cheating in a business transaction may contradict private self interest. These norms give rise to a conflict between following the norm and utility maximizing behavior. In these cases, social norms are enforced by social punishment (see Akerlof (1976), Coleman (1990), Hechter (1984).)

Given the potential strength of such norms, we argue that understanding the hybrid species—a combination of *"Homo Economicus*" and "*Homo Sociologicus*"—is important for social science analysis and for making sense of the experimental data as well as field data. To take steps in this direction, we begin by considering a single agent problem.[5]

We define a situation facing player *i* and denoted as $s_i \equiv \{d_i, N_i\}$, as a combination of a decision problem, d_i, and a set of relevant social norms, N_i. We let S_i be the set of all possible (single agent) situations that individual *i* may encounter. Two different situations may have the same decision problem but different social norms—or different properties of the situation (see Levitt and List, 2007). We thus do not impose the condition that identical decision problems are necessarily isomorphic.

A decision problem $d_i \in D_i$ is defined as an action choice and payoff function. Individual *i* chooses $x_i \in X_i$ where X_i is his choice set. The payoff function is $P_i : (X_i) \rightarrow R^n$ as the action chosen by *i* may yield payoffs to several other individuals. For every $x_i \in X_i$ we let $(P_i(x_i), P_{-i}(x_i))$ be the distribution of payoffs derived from the action x_i. We assume that

[5] Extending our analysis to interactive games requires some adjustments.

the preferences of individual i are given by $U_i(P_i(x_i), P_{-i}(x_i))$, therefore an individual may be purely selfish, she can have inequality aversion, or have a status concern in the form of reaping extra utility when her payoffs exceed the payoffs of other individuals.

A social norm $n_i \in N_i$ is a set of rules specifying the "right" action for every social dilemma or a decision problem and a norm defining for each action its distance from the ideal action. A social norm does not have to cover all possible decision problems and may apply only to a subset. The ideal action for the decision problem d_i is given by $n_i(d_i) \in \{P(X_i) \cup 0\}$ where $P(X_i)$ is the set of subsets of X_i and 0 means no prescribed action. Thus, a social norm is not necessarily a unique prescription as it may define a set of actions that each one of them is "legitimate" for the decision problem d_i. It is also possible to have conflicting norms each prescribing a different ideal set of actions.

An "inappropriate" action that contradicts the recommended action by one of the norms may impose social punishment. At this point, we do not impose any structure on this social punishment and denote it as $SP_i(x_i \mid d_i, N_i)$, which is the social punishment of choosing x_i in the situation $s_i=(d_i,N_i)$. The overall utility of individual i when choosing x_i in situation $s_i=(d_i,N_i)$ is a combination of his utility from the distribution of payoffs induced by his action and the potential social punishment if his actions diverge from the ideal action dictated by the relevant social norms. Specifically,

$$u_i(x_i \mid d_i, N_i) \equiv U_i(P_i(x_i), P_{-i}(x_i)) + \alpha_i \, SP_i(x_i \mid d_i, N_i) \, ,$$

where α_i, is the relative importance assigned by individual i for social punishment. Individual i chooses $x_i = \mathrm{ArgMax}_x u_i(x_i \mid d_i, N_i)$. An individual with $\alpha_i = 0$ is one who does not assign any importance to the social norm. For a large enough α_i the individual will make his decision in accordance with the relevant social norms ignoring his other preferences.

To illustrate the implications of our framework consider our baseline dictator game. As aforemementioned, the data from such exercises are oftentimes interpreted as representing evidence in favor of "fairness concern" or "inequality aversion." Having such concern implies direct assumptions on the structure $U_i(P_i(x_i), P_{-i}(x_i))$. Moreover the literature uses the outcomes of these experiments to fix parameters of the utility function, and in particular its inequality aversion component. Once the shape of the utility function has been established, it is used for economic analysis, and in particular as descriptive of behavior in a myriad of situations, including labor markets, general bargaining settings, and incomplete contractual arrangements between buyers and sellers more broadly.

As our model makes clear, while the behavior observed in such games can be induced by social preferences such as inequality aversion, it may also be the result of a social norm of behavior. An individual may share the amount that he has received with an anonymous player not because he cares about the other player's payoffs, but simply because he is expected to follow the social norm relevant for such a situation. For example most individuals leave a tip in restaurants that they do not intend to visit again not necessarily because they have fairness concerns but because they obey a general social norm that applies to such situations. They may not care about the welfare of the waitress, they may even think that the service was horrible and does not merit a tip, but nevertheless they leave a tip because not doing so is against the norm and therefore costly.

One may argue that the distinction between norms and social preferences is not important provided they both induce the same behavior. This is true if we hold ourselves to one particular situation. As we move from one situation to another, the stable preference structure remains, but the properties of the situation potentially change. This may lead our model to predict a behavioral change, while models based on outcomes predict no such change. Therefore, one cannot use an experimental approach to conclude that individuals have, for example, inequality aversion and then analyze a completely different situation that relates to interaction in the labor market under the assumption of the same social preferences.

Data across our baseline comparison treatments makes this clear. If the impetus for the general giving in the dictator game or the trusting behavior in the trust game were stable social preferences, i.e., inequality aversion, then we would expect such preferences to manifest themselves in the comparison treatments. The equal allocation could have been easily dictated in the second Q-treatments simply by refraining from investing costly effort. But, few of the players opt to take this route, instead providing effort profiles that stochastically dominate those observed in the baseline treatments. It is difficult, if not impossible, to explain such behavior by fixed social preferences measured over payoff outcomes.

Our decision making setup lends insights into such behavior by realizing that the properties of the situation have changed. While the decision problem was identical across the treatments, the relevant social norms changed. For example, in the dictator baseline, the "appropriate" expected behavior was to allocate half of the endowment to fellow participants. In the second treatment unequal division of money was socially acceptable as it was an outcome of a tournament. Investing effort in order to receive a higher share of the endowment does not violate any social norm and therefore players are ready and willing to act accordingly.

Beyond providing underpinnings for our experimental data, the framework can also explain data found in other studies that refute fairness models. For example, List (2007) varies the action set and the origin of endowment in simple dictator games and finds that these simple manipulations of the action set lead to drastic changes in behavior: many fewer agents are willing to give money when the action set includes taking. Further, the model can explain the stark data observed in best-shot games, impunity games, and ultimatum games with incomplete information mentioned above. Beyond these games, our model is entirely consonant with data that is line with predictions from fairness models, such as ultimatum game data, gift exchange data, and the various market and bargaining games in the broader literature.

IV. Epilogue

This study explores behavior in two standard laboratory games to provide insights into the current popular modeling approaches used to describe such data. Our first set of treatments examines data from the dictator game while the second set of treatments analyzes a similar manipulation of an oft-used interactive game—the trust game. The treatments are meant to manipulate the market competitiveness feature to distinguish fairness models from a model based on social norms. In the former, a stable preference ordering over outcomes provides predictions on behavior across settings. The latter norm based theory, also provides predictions across settings, but rather than focusing on the outcome payoff space, it includes properties of the situation in the form of social norms.

Both data sets reveal the power of the situation—whether observing behavior of dictators in the dictator game or proposers in the trust game, we find that when socially acceptable actions provide one person with a greater portion of the rents, people will take advantage of that situation to the detriment of their anonymous partner. We view these results as both extending recent evidence of how the situation influences play in the dictator game as well as providing a first piece of evidence on the influence of the properties of the situation in a game that has yet to be manipulated in such fashion.

Beyond providing empirical evidence on the importance of the properties of the situation via manipulation of competition over resources, we provide an alternative theory that might lend insights into the behaviors observed. We view our model as only a beginning to the discussion on general models that can describe behavior. To add empirical structure to our model, it is important that future research provides behavioral parameters for the structure imposed; parameters that allow us to predict behaviors across situations. For example, understanding and modeling how features of the situation, such as social norms, affect behavior across domains of interest—the experimental lab, a particular product or service market, etc.,—represents a fruitful avenue of research.

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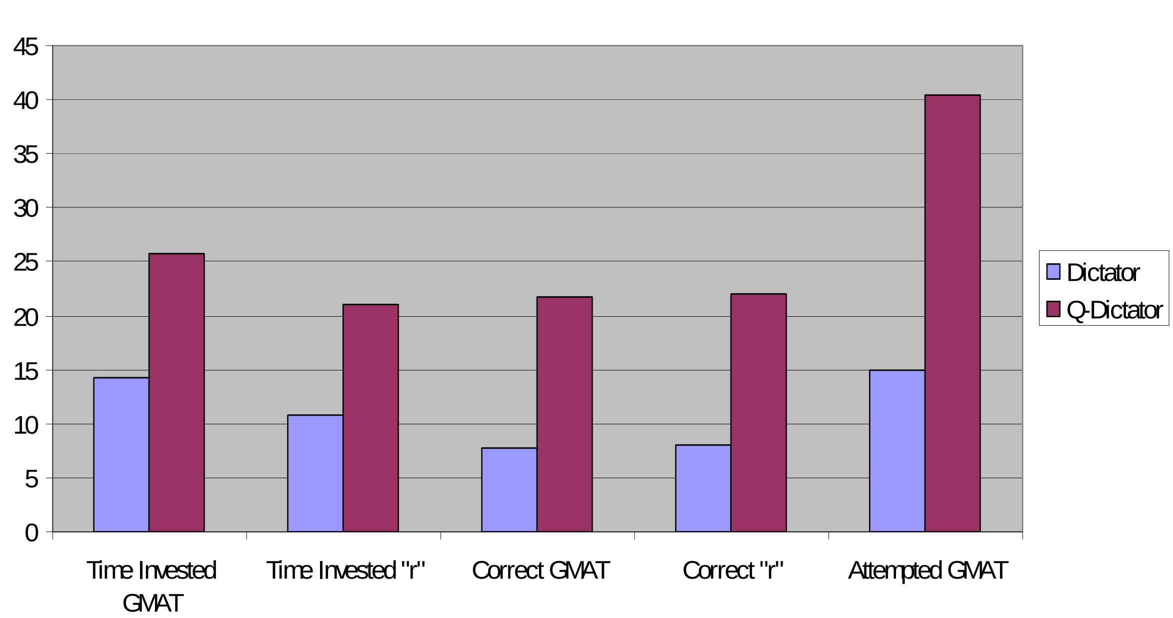
Table 1. Summary Behavior*

Treatment / Dictator	(n)	% of Proposer's that Transfer	Average Time Invested Prop.	Average Time Invested *Resp.*	Average # Correct Prop.	Average # Correct *Resp.*	Average # Attempted Prop.	Average # Attempted *Resp.*
Baseline(GMAT)	(40)	70	14.2 (11.7)	*11.4 (12.6)*	7.8 (7.4)	*5.4 (9.0)*	14.9 (17.3)	*12.2 (19.8)*
Baseline("r")	(40)	75	10.8 (11.6)	*11.2 (12.3)*	0.4 (0.6)	*0.5 (0.7)*	---	
Baseline Pooled	(80)	72.5	12.5 (11.6)	*11.3 (12.3)*	---		---	
Q-Dictator(GMAT)	(40)		25.7 (9.5)	*26.7 (7.2)*	21.7 (12.8)	*23.7 (10.9)*	40.4 (17.7)	*43.1 (14.4)*
Q-Dictator("r")	(40)		21.0 (9.0)	*26.1 (5.8)*	1.1 (0.7)	*1.4 (0.5)*	---	
Q-Dictator Pooled	(80)		23.3 (9.5)	*26.4 (6.4)*	---		---	
Trust Game	**(n)**							
Baseline(GMAT)	(40)	55	12.6 (11.8)	*11.5 (13.2)*	8.0 (10.6)	*9.6 (11.8)*	13.0 (18.1)	*14.8 (18.8)*
Baseline("r")	(40)							
Baseline Pooled	(80)							
Q-Trust(GMAT)	(40)	60	24.9 (11.0)	*27.5 (7.9)*	19.4 (12.1)	*23.1 (10.1)*	34.8 (19.7)	*39.8 (15.5)*
Q-Trust("r")	(40)							
Q-Dictator Pooled	(80)							

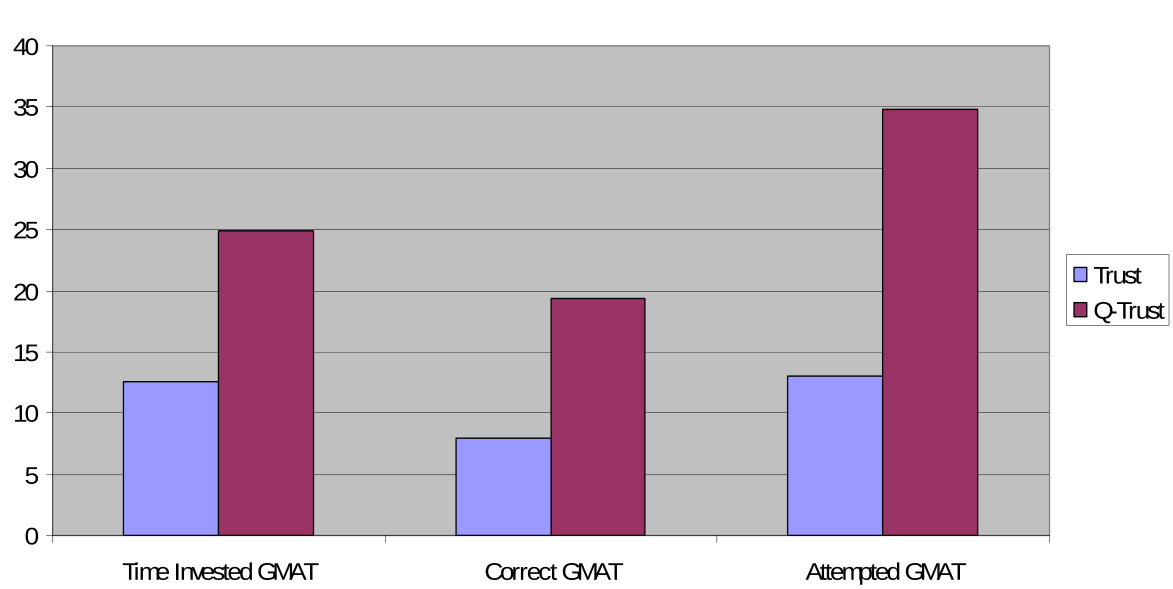
*Figures in cells report summary statistics from the experiment and can be read as follows. In row 1, reading across from left to right, the baseline GMAT treatment had 40 subjects, 70% of proposers chose an equal split, the average time invested in task by proposers (responders) was 14.2 (11.4) minutes, the average number of questions answered correctly by proposers (responders) was 7.8 (5.4), and the average number of questions attempted by proposers (responders) was 14.9 (12.2). Standard deviations are in parentheses. The "r" treatment means represent fraction of the page they finished. These data are in 0.25 increments. Given that very few errors were committed, we have no information on questions attempted since it is merely circling r's on the sheet.

Figure 1. Data Summary for Dictators



Note: Figures represent average time invested in minutes, average number correct, and average number attempted. Correct “r” averages are rescaled to correspond with the number correct in GMAT. Source data are from Table 1.

Figure 2. Data Summary for Trust Game Proposers



Note: Figures represent average time invested in minutes, average number correct, and average number attempted in GMAT. Correct “r” averages are rescaled to correspond with the number correct in GMAT. Source data are from Table 1.