Available online at www.sciencedirect.com
ScienceDirect
Journal of Economic Psychology 28 (2007) 197–213
JOURNAL OF Economic Psychology
www.elsevier.com/locate/joep

Status and distrust: The relevance of inequality and betrayal aversion

Kessely Hong *, Iris Bohnet

Kennedy School of Government, Harvard University, 79 John F. Kennedy Street, Cambridge, MA 02138, United States

Received 21 October 2005; received in revised form 7 June 2006; accepted 13 June 2006
Available online 25 July 2006

Abstract

Trust involves a willingness to accept vulnerability, comprised of the risk of being worse off than by not trusting, the risk of being worse off than the trusted party (disadvantageous inequality), and the risk of being betrayed by the trusted party. We examine how people's status, focusing on sex, race, age and religion, affects their willingness to accept these three risks. We experimentally measure people's willingness to accept risk in a decision problem, a risky dictator game, and a trust game, and compare responses across games. Groups typically considered having lower status in the US – women, minorities, young adults and non-Protestants – are averse to disadvantageous inequality while higher status groups – men, Caucasians, middle-aged people and Protestants – dislike being betrayed.

JEL classification: C72; C91

PsycINFO classification: 3020; 2360

Keywords: Trust (social behavioral); Status; Risk perception; Equity (payment)

* Corresponding author. Tel.: +1 617 256 9019; fax: +1 617 496 6154.
E-mail address: Kessely_Hong_2000@ksgalum.harvard.edu (K. Hong).

0167-4870/$ - see front matter
doi:10.1016/j.joep.2006.06.003

1. Introduction

Distrust is pervasive in the US and elsewhere. Approximately 64% of Americans do not believe that "most people can be trusted", but think that "you need to be very careful" in dealing with others; throughout the world, distrust is even higher, with approximately 70% of respondents in the most recent European and World Values Surveys not believing that "most people can be trusted" (European Values Study Group & World Values Survey Association, 1999–2002, A165). A 2002 survey of 49 communities in the US found similar results when asking the same question (Rahn, Yoon, Lipson, & Garet, 2002). Experiments designed to elicit behavioral responses also suggest low levels of trust in others in one-shot interactions. For example, in binary-choice trust games where people can either trust or end the relationship, on average about two thirds of the subjects are unwilling to trust, varying with the degree of risk involved when trusting (e.g., Bohnet & Huck, 2004; Malhotra, 2004; and for a survey, Camerer, 2003).

Low levels of trust are associated with a host of social problems. For example, a lack of generalized trust in others decreases democratic stability (Inglehart, 1999), government performance (Knack, 2002; LaPorta, Lopez-de-Silanes, Shleifer, & Vishny, 1997; Putnam, 1993, 2000), and inter-organizational cooperation (Kramer & Tyler, 1996; Mayer, Davis, & Schoorman, 1995; Smith, Carroll, & Ashford, 1995). Distrust contributes to economic stagnation (Fukuyama, 1995; Knack & Keefer, 1997; Zak & Knack, 2001) and is associated with lower individual income (Slemrod & Katuscak, 2002).

This paper examines why people do not trust others. We hypothesize that the reasons for distrust are related to a person's status. Status has been defined as holding "high rank on some dimension that is held by society to be important" (Ball & Eckel, 1996, p. 381), and as "the outcome of an evaluation of attributes that produces differences in respect and prominence" (Keltner, Gruenfeld, & Anderson, 2003, p. 266). We focus on demographic groups generally considered to have high or low social status in the US (and more generally, in many Western countries): men, Caucasians, Protestants, and middle-aged people versus women, members of minority groups, members of other religions, and young adults, respectively.

We adopt the definition of trust recently proposed by a cross-disciplinary review as "a psychological state composing the intention to accept vulnerability based on positive expectations of the intentions or behavior of another" (Rousseau, Sitkin, Burt, & Camerer, 1998, p. 395). A binary-choice trust game (Camerer & Weigelt, 1988; Dasgupta, 1988; Kreps, 1990) allows the measurement of trust behavior in the laboratory. In the trust game, a decision maker decides whether or not to trust an anonymous counterpart. If she does not trust,[1] the game ends and both parties receive a moderate outcome. If she trusts, the trusted party can either reward or betray trust. If he rewards trust, both he and the decision maker are better off than if trust had not been offered. If he betrays trust, he receives the highest possible, and the decision maker the lowest possible, outcome. In either case, trust increases efficiency and the trusted party's earnings. At the same time, trust may make the decision maker worse off than if she had not trusted and enhance payoff differences between the two parties (in case of betrayal). In this game, decision makers make themselves vulnerable by trusting, based on their beliefs about their counterpart's trustworthiness.

[1] For simplicity, we refer to decision makers as female and second players as male throughout the paper.

Much previous research has focused on explanations for why different groups might have *different estimates of the likelihood of trustworthiness versus betrayal* – essentially, suggesting causes for different levels of optimism. For example, "experiential views" of trust assume that willingness to trust is based on the frequency of successful trust interactions in prior life experiences (see Brehm & Rahn, 1997; Hardin, 2002; Rotter, 1980). Along these lines, Alesina and La Ferrara (2002) argue that groups facing historic discrimination are less trusting.

We focus on the first part of the trust definition and study the factors that might influence a person's *willingness to accept vulnerability* and hold expectations of trustworthiness constant by experimental design. Presumably, everyone would be more inclined to trust when the odds of betrayal are low than when they are high. However, for a given probability of betrayal, some people may choose to trust and others may not. What is it, aside from subjective estimates of the probability of success, that makes these risky trust situations appealing to some and unappealing to others?

We decompose the willingness to accept vulnerability into three components: the willingness to accept the risk of being worse off than if one had not trusted; the willingness to accept the risk of being worse off than one's counterpart, the trusted party; and the willingness to accept the risk of being betrayed by the trusted party.

The first component of vulnerability is based on a person's attitude toward risk. The second vulnerability component builds on recent work on fairness suggesting that people do not like to be worse off than others (e.g., Bolton & Ockenfels, 2000; Fehr & Schmidt, 1999; Loewenstein, Thompson, & Bazerman, 1989). These two vulnerability components deal with a person's attitude toward end results and not the process by which they were achieved. A person's willingness to accept the risk of betrayal inherent in the trust decision, the third vulnerability component, takes into account that people may care not only about outcomes but also about how outcomes came to be. People may care about the process because it allows them to make attributions about their counterpart's intentions (Blount, 1995; Bolton, Brandts, & Ockenfels, 2000; Charness & Rabin, 2002; Rabin, 1993).

In all three cases, we describe a net effect. For example, a person's willingness to accept the risk of disadvantageous inequality involved in trust is based on a person's concerns for another person's payoffs, such as disadvantageous inequality aversion, but also altruism and a person's efficiency preferences (e.g., Andreoni & Miller, 2002; Charness & Rabin, 2002). The willingness to accept the risk of betrayal is based not only on concerns about betrayal but also about trustworthiness. While a person may dislike experiencing betrayal, she may also enjoy experiencing trustworthiness.[2] The more averse an individual is to the

[2] Trustworthiness benefits and betrayal costs are in line with recent findings in neuroscience. Functional MRI scans reveal in a prisoner's dilemma game that rewarded trust is associated with activation of brain areas linked with reward processing (nucleus accumbens, ventromedial frontal/orbifrontal cortex and rostral anterior cingulated cortex) (Rilling et al., 2002). In contrast, unfairness in an ultimatum game triggers activity in an area of the brain well known for its involvement in negative emotions (the anterior insula) (Sanfey, Rilling, Aronson, Nystrom, & Cohen, 2003). Recently, Kosfeld, Heinrichs, Zak, Fischbacher, and Fehr (2005) employed the neuropeptide oxytocin, which has been shown to promote prosocial behavior, in an Investment Game. They found that people who were given oxytocin were more willing to trust but that their expectations of trustworthiness were not affected. They concluded that the substance decreased agents' "exploitation aversion", a sister concept to betrayal aversion.

(net) risk of being worse off, the (net) risk of inequality and the (net) risk of betrayal, the less likely she is to trust.

Most research on trust and vulnerability has focused on the first vulnerability component, a person's attitude toward risk, both theoretically (e.g., Ben-Ner & Putterman, 2001; Cook & Cooper, 2003; Luhmann, 1979) as well as experimentally (e.g., Eckel & Wilson, 2004; Malhotra, 2004; Schechter, 2003; Snijders & Keren, 1999). This paper focuses on the second and third vulnerability components. Recently, Ashraf, Bohnet, and Piankov (forthcoming), Bohnet and Zeckhauser (2004), and Bohnet, Greig, Herrmann, and Zeckhauser (2005) questioned the widely held assumption that the decision to trust can be conceptualized as just another investment decision under uncertainty. Ashraf et al. show that trust is also closely related to people's concerns about the other's payoff – the second vulnerability component – and Bohnet and Zeckhauser show that concerns about betrayal come into play when people have to decide whether or not to trust – the third vulnerability component.

The possibility of "altruistic trust" has also been noted by Mansbridge (1999) and Kramer (1999), who observes: "Trust needs to be conceptualized not only as a calculative orientation toward risk, but also a social orientation toward other people and toward society as a whole" (p. 573). While the relationship between trust and betrayal aversion has not been studied widely, Koehler and Gershoff (2003) suggest that people are deeply concerned about betrayal. Their recent survey on criminal and product safety betrayals finds that subjects feel worse and assign larger (hypothetical) punishments to intentional betrayals than to accidental non-fulfillments with equivalent payoff consequences. Intentional betrayals violate a duty or break a promise.

Our paper builds on the conceptual framework introduced by Bohnet and Zeckhauser (2004) and Bohnet et al. (2005), which allows for the evaluation of the relative importance of the three possible motives for distrust: attitudes toward general risk, the risk of disadvantageous inequality and the risk of betrayal. Here, we are particularly interested in the less-studied risk of disadvantageous inequality and risk of betrayal. We modify the framework to examine how these motives for distrust are related to the status characteristics, sex, ethnicity, religion and age. We focus on general status characteristics applying across situations rather than specific characteristics dependent upon the specific role or power structure of a given situation (e.g., Ball & Eckel, 1996; Ridgeway, Berger, & Smith, 1985) and limit our inquiry to the effect one's own status has on people's willingness to accept vulnerability in different decision situations.

Our paper is organized as follows: in Section 2, we focus on the relationship between status and vulnerability. Section 3 presents our experimental design and in Section 4, we report our results. Section 5 discusses our findings and concludes.

2. Status and willingness to accept vulnerability

Status has long been studied by sociologists as a means of predicting social interactions. Expectation States Theory asserts that people use general status characteristics as a basis for guiding their own and predicting others' behaviors, most notably in the absence of other personal information (Meeker & Weitzel-O'Neill, 1977; Ridgeway et al., 1985).

Since status is socially conferred, its impact on behavior depends on the society in which one is living. We limit our status evaluations to the US because that is where we conduct our study. Most research on status has focused on sex. In fact, sex has been found to be

such a strong indicator of status that some have termed it the "master status" (Hughes, 1945). Men are generally acknowledged to hold higher status than women (Lips, 1991). Similarly, in the US, Caucasians, Protestants and middle-aged people are considered to have higher status than their respective counterparts. Since the arrival of the first European colonists, who came to dominate the political, economic, and social landscape, non-Caucasians in the US have historically been at a disadvantage in terms of access to power and resources, making them the lower status group compared to higher status Caucasians. Similarly, non-Protestants have often been considered to hold lower status than Protestants (e.g., John F. Kennedy had to downplay his Catholicism in order to be elected President, and every other President has been Protestant). Young adults have had less time to amass knowledge, skills, and wealth than middle-aged people, and therefore can be considered lower status, as well. Everyone has multiple facets for which status could be considered; holding high status along several dimensions should yield the highest overall status, and similarly holding low status along several dimensions should yield the lowest overall status. Thus, the subgroup comprising the highest status in our study includes white, middle-aged, male Protestants.

The impact of status on behavior is pervasive. General status characteristics have been found to influence behavior not only in everyday life, but also in experimental laboratory settings where all participants are nominally assigned to the same role and given the same level of resources (Berger, Fisek, Norman, & Zelditch, 1977). Eagly observes that experimental participants see sex, for example, as a "status cue because of their extensive prior experience in natural settings where sex was observed to be correlated with power and prestige" (Eagly, 1983, p. 975).

2.1. Status and willingness to accept the risk of inequality

By trusting, people expose themselves to the risk of ending up worse off than the trusted party. At the same time, by trusting, they increase efficiency and make the trusted party better off than he would have been if no trust had been offered. Status theory suggests that low status groups are more concerned about achieving equality, whereas high status groups are interested in making someone else better off. For example, Meeker and Weitzel-O'Neill (1977) argue that people of low status are focused on equality – they prefer equality to other allocation procedures such as equity, because they feel that absent equality they will not get what they deserve to receive as their input is not considered as valuable as a high status person's input, keeping everything else equal.

People of high status do not need to fight for equality, and are able to pay attention to helping others. This willingness to make someone else better off can be seen in two lights: first, as altruism and second, as a "warm glow" to the benefactor, confirming his or her own superiority and largesse. Both non-selfish and selfish motives such as a "warm glow" have been found to affect regard for others in a wide variety of circumstances (see, e.g., Andreoni, 1990 and for a survey, Fehr & Schmidt, 2002). In this way, generosity also serves as a means for high status benefactors to preserve their own status (Jackman, 1994; Swim & Campbell, 2003). In the particular case of male donors and female recipients, research suggests "chivalry" and "paternalism": men see women as objects to protect and treasure but also as inferior (e.g., Glick & Fiske, 1996). We predict:

Hypothesis 1. Members of low status groups are less willing to accept the risk of disadvantageous inequality than members of high status groups.

2.2. Status and willingness to accept the risk of betrayal

By trusting, people expose themselves to the risk of being betrayed by the trusted party. They cede power over their own outcome to the trusted party and accept some degree of submission to another's will. Members of high status groups are more used to assuming powerful roles than members of low status groups (Lips, 1991). Multiple research studies suggest that men are more likely than women to view themselves as powerful and strong (e.g., for a review of earlier literature, see Ashmore, 1981; see also Wehmeyer, 1993). People of higher status generally believe they exert more control over their lives than people of lower status, and belonging to a high status category is a predictor of dominant behavior (Lips, 1991; Meeker & Weitzel-O'Neill, 1977). In contrast, low status groups have been found to be more willing to accept powerlessness (Ridgeway & Berger, 1986; Mainiero, 1986) and to be more likely to opt for a democratic, or communal, leadership style as opposed to an authoritative, commanding style (Eagly & Johnson, 1990).

Women, minorities, non-Protestants and young adults – members of lower status groups – are less accustomed to holding power, viewing themselves as powerful, and acting to protect their power. When confronted with a situation in which they are less powerful than someone else, they tend to focus on "cost reduction" strategies (Emerson, 1962): rather than fight against their lack of power, they change their own outlook and values in order to decrease the pain of giving in to the other, more powerful person. Conversely, people from high status groups react to being placed in a position of inferior power by selecting a "balancing" action, namely quitting the relationship, thereby restoring their own control (Emerson, 1962). Thus, people of low status are likely to accept someone else having the power to betray them, whereas people of high status are likely to avoid such situations. We predict:

Hypothesis 2. Members of low status groups are more willing to accept the risk of betrayal than members of high status groups.

3. Method

We use a between-subjects design to compare responses to three games: the "Decision problem", the "Risky dictator game" and the "Trust game", in order to assess different causes for distrust (Bohnet & Zeckhauser, 2004). The decision problem (DP) measures people's willingness to accept general risk. In the DP, people are confronted with a certain payoff and a gamble yielding one outcome higher and one lower than the certain payoff. In our study, the certain payoff is worth \$10, whereas the gamble yields either \$15 or \$8.

Usually, when risk assessment questions similar to this one are used in experimental settings, participants are told the probability of getting the higher outcome in the gamble and are asked whether they want the gamble or the certain payoff (e.g., Siegrist, Cvetkovich, & Gutscher, 2002). In our study, participants are told only that if they choose the gamble, their payoff will be determined by a random draw. Participants are asked (in simpler language) to name their minimum acceptable probability (MAP) of gaining the higher payoff in the gamble that makes them prefer the gamble to the sure payoff of \$10. If the MAP is equal to or less than the actual likelihood of getting the higher payoff, then the decision maker receives the gamble and her result is determined by the random draw; if the MAP is higher than the actual likelihood of getting the higher payoff, then the decision maker receives \$10. Participants are informed that the probability of getting the higher

payoff (p^*) has been determined before the beginning of the study. It is $p^* = 0.29$ and corresponds to the likelihood of trustworthiness found in prior experimental sessions conducted by Bohnet and Zeckhauser (2004) using a related trust game with identical payoffs to the decision maker.[3] Coincidentally, it is also the probability that makes a risk neutral decision maker indifferent between choosing the sure outcome and the gamble.

From the DP, we can learn a participant's general attitude toward risk. Since the probability of getting the higher payoff of \$15 instead of \$8 that would make the expected value of the gamble equal to the sure \$10 outcome is 0.29, by subtracting 0.29 from the participant's MAP_{DP}, we get her risk attitude: a positive score indicates risk-aversion, zero (a MAP of exactly 0.29) indicates risk-neutrality, and a negative score indicates risk-seeking behavior.

The risky dictator game (RDG)[4] is similar to the Decision Problem, but adds another level of complexity. Here, again, participants confront a choice between a certain outcome and a gamble whose outcome is determined by a random draw. Also, as before, they are asked to name the MAP of getting the higher payoff instead of the lower payoff that makes them prefer the gamble to the certain payoff. However, their decision now affects not only themselves but also another, randomly selected, unidentified, participant. The certain outcome yields payoffs of \$10 each to both the decision maker and the other participant with whom she is paired. The gamble results either in payoffs of \$15 each to both the decision maker and the other participant or \$8 to the decision maker and \$22 to the other participant.

As with the decision problem, one factor which is likely to affect the decision-making process in the RDG is the decision maker's own risk attitude. Additionally, the decision maker may also care about the payoff received by the other person as a result of her choice. In order to figure out how prominently concerns about the other's payoff factor into the decision, aside from the decision maker's own risk attitude, we can subtract the MAP_{DP} (here, the average MAP_{DP} from a group of similar participants since we use a between-subjects design) from the MAP_{RDG}. This yields a measure of a person's willingness to accept the risk of inequality. A positive difference between the MAP_{RDG} and the MAP_{DP} indicates that the decision maker is averse to the risk of inequality; if the MAP_{RDG} minus the MAP_{DP} is negative, this suggests that the decision maker seeks the risk of inequality – because she likes making someone else better off or has efficiency preferences, and these motives outweigh any concerns about payoff differences.

The final game in this framework is a modified version of the trust game (TG) introduced earlier. From the standpoint of the decision maker, it is identical to the RDG, except that if the gamble is chosen then the outcome is decided by the other person, the second party, rather than by nature.[5] As before, the payoffs are \$10 each to both parties if the sure option is chosen, and either \$15 each to both parties or \$8 to the decision maker and \$22 to the second party if the gamble is chosen.

[3] See Bohnet and Zeckhauser (2004). They also explain why this mechanism is incentive compatible, i.e., induces people to reveal the truth.

[4] The word "Dictator" in the title of this game is a nod to the classic "Dictator" game (Kahneman, Knetsch, & Thaler, 1986), in which participants are given an amount of money and told they can share all, some, or none of it with someone else. The word "Risky" refers to the fact that the decision maker faces some risk regarding the outcome of her decision.

[5] For related designs also comparing decisions made by a person with outcomes determined by nature in the Ultimatum Game, see Blount (1995), Pillutla and Murnighan (1996) and Bolton et al. (2000).

The way this works is as follows: the second parties are told the structure of the game and that they will be randomly paired with an unknown decision maker. Then, they are asked which of the two outcomes ($15 to decision maker and $15 to self versus $8 to decision maker and $22 to self) they choose in case the decision maker selects the gamble. The fraction of second parties choosing $15/$15 from the gamble outcome is then calculated. The decision makers, who know they will be randomly paired with an unknown counterpart, are simultaneously asked for their MAP of being paired with a counterpart who chose the $15/$15 outcome to make them prefer the gamble to the certain option.

If the MAP named by a particular decision maker is equal to or less than the fraction of second parties having chosen the $15/$15 outcome, then the decision maker and her randomly selected counterpart are in the gamble scenario and the outcome is decided by that particular second party's choice; if the decision maker's MAP is higher than the fraction of second parties having chosen the $15/$15 outcome, then both people in the pair receive $10 each.

This game incorporates all the potential decision-making concerns as the previous game (attitude to risk and inequality) as well as a new possible concern: betrayal. By subtracting the MAP_{RDG} (again, here we use the average MAP_{RDG} from a group of similar participants) from the MAP_{TG}, we can calculate a measure for a person's willingness to accept the risk of betrayal. Positive values indicate betrayal risk aversion, while negative values indicate that the decision maker seeks the risk of betrayal – because she enjoys experiencing rewarded trust, and such concerns outweigh any dislike of experiencing betrayal.

To study the impact of status, we collect demographic information on sex, ethnicity/race (African or African–American, Arab, Asian or Pacific Islander, Caucasian, Hispanic, Native American, or Other), religion (Buddhist, Catholic, Hindu, Jewish, Muslim, Orthodox Christian, Protestant, None, or Other) and age in a post-experimental questionnaire. To give what has been termed the "master status" special salience, we examine sex in more detail. We study same-sex and mixed-sex pairs in the Risky Dictator and the trust game. The sex of their counterpart is known to all subjects in all conditions.

3.1. Participants

Two hundred and ninety nine subjects participated in the experiment. Participants were recruited from universities in the greater Boston area. While students typically comprise the majority of participants in this subject pool, there is always a sizable number of community members older than the typical student participating. There is a pretty even gender split, with 49% females and 51% males. In terms of ethnicity, 62% are Caucasian, 19% Asian or Pacific Islander, 10% African or African–American, 7% Hispanic, 1% Arab, and there is one Native American participant. Most of the subjects are 30 or younger – in fact, more than we had hoped (90%); the oldest participant is 59. Almost one third of participants (31%) are not religious; of those participants who espouse a religion, Protestants comprise the largest category at 22%, followed by Catholics at 20%, Jews at 11%, Buddhists at 4%, Hindus at 3%, Orthodox Christians at 2%, and Muslims at 2% (5% listed "other").

Participants received a $10 show-up fee, plus additional earnings ranging from $8 to $22. We ran 13 experimental sessions, each taking approximately 30 to 45 minutes. All sessions were run in February and March 2004.

3.2. Design and procedure

We employ a complete three-by-two between-subject design, with three decision situations and male or female decision makers. In addition, in the decision situations involving a second person, the Risky Dictator and the trust game, we also vary the second person's sex. We select a between-subjects design to avoid the possibility of order or demand effects. Each participant took part in only one treatment condition and played either the role of the decision maker or of the second player (in the RDG or the TG).[6]

Upon entering a session, each participant was asked to sign a consent form and received an index card with a code number to be used for identification purposes during the experiment. Then, an introduction was distributed, followed by the instructions for the specific decision situation for that session (DP, RDG, or TG), and then a questionnaire. Participants in the risky dictator and trust games were told the sex of their counterpart, but no other identifying information. During the questionnaire period, the researchers examined whether each person or pair ended up with the certain option or the gamble, and began to calculate payments. After the questionnaires were completed, the researchers explained how the payments would work, identified the code numbers of the individuals or pairs participating in the gamble, and conducted the lottery (DP and RDG) or revealed the second party's decisions (TG). Payment was made to subjects in sealed envelopes, identified by code numbers.[7]

4. Results

Decision makers' status is related to their willingness to accept both the risk of inequality and the risk of betrayal. To measure attitudes toward these risks, we focus on decision makers' MAPs. The difference between a group's MAPs in the decision problem and the value of p that would leave a risk neutral person indifferent between choosing the sure outcome and the lottery, $p = 0.29$, indicates a group's attitude toward general risk. All our demographic groups are risk averse – their MAPs in the decision problem exceed $p = 0.29$. We do not find any significant differences in behavior for low and high status groups. Typically, women have been found to be more risk averse than men (e.g., Powell & Ansic, 1997; and for a survey, Croson & Gneezy, 2004). In the remainder of the analysis, we will focus on inequality and betrayal aversion.

The difference between a group's MAPs in the risky dictator game and the decision problem indicates a group's attitude toward the risk of inequality, and between a group's MAPs in the trust game and the risky dictator game a group's attitude toward the risk of betrayal. For a given group, we calculate inequality aversion by subtracting the mean MAP in the decision problem from each decision maker's MAP in the risky dictator game, and betrayal aversion by subtracting the mean MAP in the risky dictator game from each decision maker's MAP in the trust game.[8] To compare the behavior of different status groups, we conduct non-parametric tests for differences in these differences

[6] Note that of our 299 participants, only 168 are assigned to the decision maker role in the three games, and it is the responses of these 168 decision makers that we analyze later in this paper.

[7] The instructions are available from the authors upon request.

[8] As our procedure assumes that there is no variance in the subtracted group MAPs, we also used bootstrapping to determine a group's typical MAP in a game. It does not change our results.

Table 1
MAPs in the three decision situations (**mean**, median, [*N*], *standard deviation*)

First mover	Decision problem	Risky dictator game	Trust game
All	**0.40**, 0.35, [37], *0.17*	**0.39**, 0.40, [57], *0.23*	**0.46**, 0.44, [74], *0.23*
Men	**0.41**, 0.35, [16], *0.13*	**0.34**, 0.32, [32], *0.20*	**0.41**, 0.44, [31], *0.21*
Women	**0.39**, 0.40, [21], *0.19*	**0.47**, 0.50, [25], *0.25*	**0.49**, 0.50, [43], *0.24*
Caucasian	**0.44**, 0.43, [18], *0.17*	**0.35**, 0.34, [35], *0.22*	**0.46**, 0.44, [46], *0.23*
Minority (all non-Caucasian)	**0.35**, 0.30, [18], *0.16*	**0.46**, 0.48, [22], *0.23*	**0.46**, 0.46, [28], *0.24*
Middle-aged (ages 31–59)	**0.45**, 0.45, [6], *0.20*	**0.20**, 0.10, [5], *0.25*	**0.44**, 0.46, [10], *0.09*
Young (ages 18–30)	**0.39**, 0.35, [30], *0.16*	**0.41**, 0.40, [52], *0.22*	**0.46**, 0.44, [64], *0.25*
Protestant	**0.44**, 0.45, [6], *0.13*	**0.31**, 0.33, [15], *0.22*	**0.45**, 0.45, [20], *0.25*
Non-Protestant	**0.39**, 0.35, [31], *0.17*	**0.42**, 0.40, [42], *0.23*	**0.46**, 0.45, [54], *0.23*

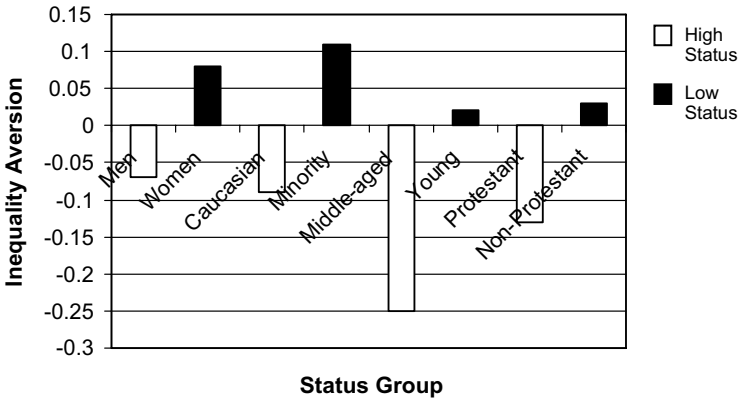

Fig. 1. Attitude to inequality risk by status group.

(Mann–Whitney *U*-test).[9] All *p*-values reported are based on this test. We do not find significant differences according to the second player's sex and thus combine our data across male and female second players. The results are summarized in Table 1.

4.1. Attitude toward the risk of inequality

Status is strongly related to people's willingness to accept the risk of inequality. Low status groups exhibit strong inequality risk aversion while high status groups show strong inequality risk proneness ($p < 0.01$ for men versus women and Caucasians versus minorities, $p = 0.034$ for middle-aged versus young adults, and $p = 0.037$ for Protestants versus non-Protestants). This suggests that concerns about disadvantageous payoff differences outweigh regard for others or considerations about efficiency in low status groups while the reverse is true for high status groups, supporting Hypothesis 1. The mean attitude toward the risk of inequality by status group can be seen in Fig. 1.

[9] The Mann–Whitney or Wilcoxon test is an alternative to the parametric *t*-test, whose assumptions do not apply to our data (or to most experimental data, for that matter), see, e.g., Siegel and Castellan (1988).

The status differences in the willingness to accept the risk of inequality are magnified when comparing groups holding high versus low status on multiple dimensions. For example, Caucasian men's MAPs drop from 0.45 in the decision problem ($N = 8$) to 0.31 in the Risky Dictator Game ($N = 20$), indicating that they have strong other-regarding/efficiency concerns, while Minority women's MAPs increase from 0.33 in the decision problem ($N = 10$) to 0.57 in the risky dictator game ($N = 10$), indicating that they are highly inequality averse ($p < 0.01$). Similarly, Protestant men's MAPs decrease from 0.50 in the DP ($N = 3$) to 0.26 in the RDG ($N = 11$), again indicating strong other-regarding/efficiency concerns, while non-Protestant women's MAPs jump from 0.39 in the DP ($N = 18$) to 0.47 in the RDG ($N = 21$), again indicating high inequality aversion ($p < 0.01$). Table A.1 in Appendix A presents the results for various status combinations. While the sample sizes typically get very small, double-category status generally enhances single-category status differences.

4.2. Attitude toward the risk of betrayal

Greater status is associated with significantly greater betrayal risk aversion for most of our status categories, mostly supporting Hypothesis 2. The status-related difference in betrayal risk aversion is highly significant for middle-aged versus younger people, with $p < 0.01$; moderately significant for Caucasians versus minorities, with $p = 0.090$, and for Protestants versus non-Protestants, with $p = 0.098$; but not significant for men versus women, with $p = 0.280$. Betrayal costs generally outweigh trustworthiness benefits in high status groups while the two motives nearly cancel each other out in low status groups, leading to no or only small differences between the Trust and the risky dictator game MAPs. The mean attitude to betrayal risk by status group can be seen in Fig. 2.

The status differences in willingness to accept the risk of betrayal are again larger when comparing groups holding high versus low status on multiple dimensions. For example, Caucasian men's MAPs increase from 0.31 in the risky dictator game ($N = 20$) to 0.44 in the Trust Game ($N = 20$), indicating high betrayal aversion, while Minority women's

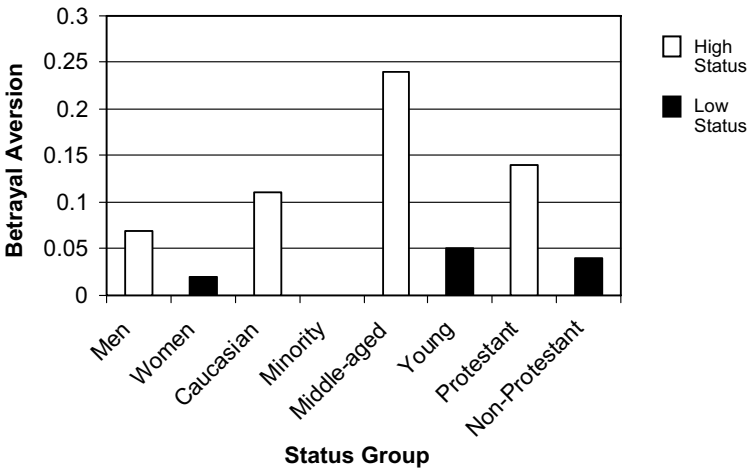

Fig. 2. Attitude to betrayal risk by status group.

MAPs slightly drop from 0.57 in the risky dictator game ($N = 10$) to 0.54 in the trust game ($N = 17$), indicating the absence of betrayal aversion ($p = 0.01$). Likewise, Protestant men's MAPs go up from 0.26 in the RDG ($N = 11$) to 0.45 in the TG ($N = 12$), again indicating high betrayal aversion, while non-Protestant women's MAPs remain similar across the two games, at 0.47 in the RDG ($N = 21$) versus 0.50 in the TG ($N = 35$), again indicating the absence of betrayal aversion ($p = 0.03$) Table A.1 in Appendix A shows that this pattern generally applies to double-status category comparisons.

4.3. Motives for distrust

Low status and high status groups are similarly unlikely to trust others. The MAPs of the different status groups in the trust game do not significantly differ from each other. However, the motives for distrust are quite different: high status groups do not trust because they fear the risk of betrayal – their betrayal risk aversion compensates for the positive regard they have for others and/or their preferences for efficiency; low status groups do not trust because they are concerned about the risk of inequality, but they are generally indifferent about the risk of betrayal. The correlation of inequality aversion and betrayal aversion across groups is −0.91 and significant at the 0.002 level.

4.4. Related work

To put our findings into perspective, we compare our results to related games, such as the Dictator (Kahneman et al., 1986), Ultimatum (Güth, Schmittberger, & Schwarze, 1982), and Investment Games (Berg, Dickhaut, & McCabe, 1995), and related decision scenarios involving concerns about equality. While there exists a relatively rich literature on sex differences in these games, research on other status dimensions is rare. In Dictator Games involving efficiency gains when money is sent to the second person, Andreoni and Vesterlund (2001) and Ashraf et al. (forthcoming) find that men respond more strongly to efficiency gains than women, while women are more focused on equality. Women are more likely to favor an equal distribution when allocating rewards (Major & Adams, 1983; Sampson, 1975) and are more inequality averse than men when choosing among hypothetical societies on behalf of imaginary grandchildren (Carlsson, Daruvala, & Johansson-Stenman, 2001). Note that in standard Dictator Games where amounts sent are compatible with concerns for equality (or more precisely, with concerns about decreasing advantageous inequality) and regard for others, and efficiency concerns do not come into play, women typically send larger amounts than men (e.g., Eckel & Grossman, 1998; see Croson & Gneezy, 2004 for a survey). Finally, African–Americans are found to be more likely to reject offers below an equal split in the Ultimatum Game (Eckel & Grossman, 2001), which could be due to concerns about equality but also to reciprocal preferences (Rabin, 1993). In general, earlier findings are consistent with our current study.

We do not know of any research examining the determinants of people's attitudes toward betrayal. Previous experimental research on trust has focused on explaining the heterogeneity in trust behavior, finding that generally, women, minorities, non-Protestants and young adults are more likely to distrust others than their respective comparison groups (e.g., Buchan, Croson, & Solnick, 2004). Croson and Gneezy (2004) survey the results on gender. Survey evidence generally suggests no sex differences. According to the 1999–2002 European and World Values Surveys, US men and women have fairly

similar rates of trust: approximately 34% of men and 38% of women think "most people can be trusted" (A165).

In Investment Game experiments, Glaeser, Laibson, Scheinkman, and Soutter (2000), Ashraf et al. (forthcoming) and Eckel and Wilson (2004) find that members of minority groups are less trusting than Caucasians. In the European and World Values Surveys, Caucasian Americans are more likely to trust (41%) than non-Caucasian Americans (21%) (1999–2002). According to Rahn et al. (2002), Caucasians are about 21% more likely to trust than African–Americans in the US (holding other factors constant).

Sutter and Kocher (2003), also using the Investment Game, find that trust increases throughout childhood into early adulthood, but then flattens out in adulthood. Only 24% of US respondents to the 1999–2002 European and World Values Surveys between the ages of 18–30 trust, whereas 37% of respondents ages 31–60 trust. Based on the GSS (1972–1994), Glaeser et al. (2000) find that Protestant denominations (except Baptists) are more trusting than Catholics, Jews, or non-religious people (p. 15–16). LaPorta et al. (1997) find similar results across the world, based on the European and World Values Surveys.

5. Summary and conclusions

Trust has been defined as the "willingness to accept vulnerability". We open the black box of vulnerability and argue that people may distrust because they are averse to the risk of being worse off compared to the status quo of no trust, the risk of being worse off than someone else and/or the risk of being betrayed by the trusted party. This paper disentangles these effects and shows which motives matter for different groups of people. We focus on demographic groups generally considered to have a high or a low social status: men, Caucasians, Protestants, and middle-aged people versus women, members of minority groups, other religions, and young adults, respectively. A group's status helps us understand why people do not trust each other.

We employ a method allowing participants to indicate how vulnerable they are willing to be in different situations. Their MAP, the minimal acceptable probability of success, gives us their willingness to choose a gamble over a certain option – thereby eliminating consideration of different estimates of the probability of betrayal.

We find that all groups are averse to the risk of losing money compared to the status quo. Any policy intervention or management strategy aimed at encouraging trust has to take this into account. Interventions can focus on decreasing the magnitude of the (net) losses involved or the (net) likelihood that the losses will occur. Based on our results, we expect the former strategy to work well for lower status individuals while the latter strategy seems advisable for higher status individuals. Given their risk preferences, people with higher status tend to distrust because they fear betrayal. People with lower status tend to distrust because they have a strong aversion to receiving an inferior outcome compared to their counterpart; the specter of betrayal does not loom large in their consideration.

Institutional mechanisms such as insurance and compensation encourage trust by decreasing general risk and the risk of inequality in case of betrayal. Our results suggest that such protection may successfully enhance lower status groups' trust. They fear losses and comparative disadvantage more than they feel any sting of pride brought on by betrayal. In contrast, higher status individuals will not be as impressed by decreases in losses and payoff differences. To encourage their trust, the potential for betrayal has to

be decreased, for example, by creating incentives for the trusted party to be trustworthy. Stricter law enforcement and punishment for breaches of trust, repeated interactions and reputational concerns may align the trusted party's interests. Another route toward improving the willingness to trust of people from high status groups may be to increase the efficiency afforded by trust situations.

Recently, Alan Greenspan remarked: "American capitalism is turning back to trust and integrity as an antidote to corporate scandal" (Balls, 2004, p. 1). This paper suggests that anyone wishing to increase people's willingness to trust may benefit from taking the status differences in the relative importance of various motives into account and using the corresponding institutional devices to address them.

Acknowledgement

The authors would like to thank Linda Babcock, Max Bazerman, Hannah Riley Bowles, Kathleen McGinn, Sara Solnick, Richard Zeckhauser, and two anonymous reviewers for their most helpful comments, as well as Fiona Greig, Ted Hong, and Marc Manara for their excellent research assistance. Financial support from the Program on Negotiation (PON), the Center for Basic Research in the Social Sciences (CBRSS) and the Women and Public Policy Program (WAPPP) at Harvard is gratefully acknowledged.

Appendix A

Table A.1
MAPs by double-category status group in the three decision situations (**mean**, median, [*N*], *standard deviation*)

First mover	Decision problem	Risky dictator game	Trust game
Caucasian men	**0.45**, 0.38, [8], *0.15*	**0.31**, 0.30, [20], *0.20*	**0.44**, 0.44, [20], *0.20*
Caucasian women	**0.44**, 0.45, [10], *0.19*	**0.40**, 0.40, [15], *0.25*	**0.46**, 0.45, [26], *0.26*
Minority men	**0.37**, 0.33, [8], *0.10*	**0.38**, 0.37, [12], *0.22*	**0.34**, 0.33, [11], *0.22*
Minority women	**0.33**, 0.30, [10], *0.20*	**0.57**, 0.61, [10], *0.21*	**0.54**, 0.55, [17], *0.22*
Middle-aged men	**0.54**, 0.54, [2], *0.19*	**0.20**, 0.10, [5], *0.25*	**0.41**, 0.44, [5], *0.08*
Middle-aged women	**0.40**, 0.45, [4], *0.22*	[0]	**0.47**, 0.50, [5], *0.09*
Young men	**0.40**, 0.34, [13], *0.12*	**0.36**, 0.34, [27], *0.19*	**0.41**, 0.42, [26], *0.22*
Young women	**0.39**, 0.35, [17], *0.19*	**0.47**, 0.50, [25], *0.25*	**0.50**, 0.50, [38], *0.26*
Protestant men	**0.50**, 0.50, [3], *0.11*	**0.26**, 0.29, [11], *0.23*	**0.45**, 0.45, [12], *0.21*
Protestant women	**0.37**, 0.35, [3], *0.13*	**0.45**, 0.45, [4], *0.06*	**0.46**, 0.45, [8], *0.33*
Non-Protestant men	**0.39**, 0.34, [13], *0.13*	**0.37**, 0.40, [21], *0.18*	**0.38**, 0.33, [19], *0.21*
Non-Protestant women	**0.39**, 0.43, [18], *0.20*	**0.47**, 0.50, [21], *0.27*	**0.50**, 0.50, [35], *0.23*

References

Alesina, A., & La Ferrara, E. (2002). Who trusts others? *Journal of Public Economics, 85*, 207–234.

Andreoni, J. (1990). Impure altruism and donations to public goods: A theory of warm-glow giving? *Economic Journal, 100*, 464–477.

Andreoni, J., & Miller, J. (2002). Giving according to GARP: An experimental test of the consistency of preferences for altruism. *Econometrica, 70*(2), 737–753.

Andreoni, J., & Vesterlund, L. (2001). Which is the fair sex? Gender differences in altruism. *Quarterly Journal of Economics, 116*, 293–312.

Ashmore, R. D. (1981). Sex stereotypes and implicit personality theory. In D. L. Hamilton (Ed.), *Cognitive processes in stereotyping and intergroup behavior* (pp. 37–81). Hillsdale, NJ: Erlbaum.

Ashraf, N., Bohnet, I., & Piankov, N. (forthcoming). Decomposing trust and trustworthiness [Special issue on behavioral economics]. *Experimental Economics*.

Ball, S. B., & Eckel, C. C. (1996). Buying status: Experimental evidence on status in negotiation. *Psychology and Marketing, 13*(4), 381–405.

Balls, A. (2004). Trust can redeem business, Greenspan believes. *Financial Times*, April 17, 2004, 1.

Ben-Ner, A., & Putterman, L. (2001). Trusting and trustworthiness. *Boston University Law Review, 81*, 523–551.

Berg, J., Dickhaut, J., & McCabe, K. A. (1995). Trust, reciprocity and social history. *Games and Economic Behavior, 10*, 290–307.

Berger, J., Fisek, M. H., Norman, R. Z., & Zelditch, M. Jr. (1977). *Status characteristics and social interaction: An expectation states approach*. New York: American Elsevier.

Blount, S. (1995). When social outcomes aren't fair: The effect of causal attributions on preferences. *Organizational Behavior and Human Decision Processes, 63*(2), 131–144.

Bohnet, I., Greig, F., Herrmann, B., & Zeckhauser, R. (2005). Betrayal aversion. Working Paper, Kennedy School of Government, Harvard University.

Bohnet, I., & Huck, S. (2004). Repetition and reputation: Implications for trust and trustworthiness when institutions change. *American Economic Review, 94*(2), 362–366.

Bohnet, I., & Zeckhauser, R. J. (2004). Trust, risk and betrayal. *Journal of Economic Behavior and Organization, 55*(4), 467–484.

Bolton, G., & Ockenfels, A. (2000). ERC: A theory of equity, reciprocity, and competition. *American Economic Review, 90*(1), 166–193.

Bolton, G. E., Brandts, J., & Ockenfels, A. (2000). Fair procedures: Evidence from games involving lotteries. Working Paper, Pennsylvania State University.

Brehm, J., & Rahn, W. M. (1997). Individual-level evidence for the causes and consequences of social capital. *American Journal of Political Science, 41*, 999–1023.

Buchan, N., Croson, R., & Solnick, S. (2004). Trust and gender: An examination of behavior, biases, and beliefs in the investment game. Working Paper, The Wharton School, University of Pennsylvania.

Camerer, C., & Weigelt, K. (1988). Experimental tests of a sequential equilibrium reputation model. *Econometrica, 56*(1), 1–36.

Camerer, C. F. (2003). *Behavioral game theory*. Princeton, NJ: Princeton University Press and Russell Sage Foundation.

Carlsson, F., Daruvala, D., & Johansson-Stenman, O. (2001). Are people inequality averse or just risk averse? Working Paper in Economics no. 43. Department of Economics, Göteborg University.

Charness, G., & Rabin, M. (2002). Understanding social preferences with simple tests. *Quarterly Journal of Economics, 117*(3), 817–870.

Cook, K. S., & Cooper, R. M. (2003). Experimental studies of cooperation, trust, and social exchange. In E. Ostrom & J. Walker (Eds.), *Trust and reciprocity* (pp. 209–244). New York: Russell Sage.

Croson, R., & Gneezy, U. (2004). Gender differences in preferences. Working Paper, The Wharton School, University of Pennsylvania.

Dasgupta, P. (1988). Trust as commodity. In D. Gambetta (Ed.), *Trust: Making and breaking cooperative relations* (pp. 49–72). Oxford: Blackwell.

Eagly, A. H. (1983). Gender and social influence: A social psychological analysis. *American Psychologist, 30*, 971–981.

Eagly, A. H., & Johnson, B. T. (1990). Gender and leadership style: A meta-analysis. *Psychological Bulletin, 108*, 233–256.

Eckel, C. C., & Grossman, P. J. (1998). Are women less selfish than men? Evidence from dictator experiments. *Economic Journal, 108*, 726–735.

Eckel, C. C., & Grossman, P. J. (2001). Chivalry and solidarity in ultimatum games. *Economic Inquiry, 39*(2), 171–188.

Eckel, C. C., & Wilson, R. K. (2004). Is trust a risky decision? *Journal of Economic Behavior and Organization, 55*(4), 447–466.

Emerson, R. M. (1962). Power-dependence relations. *American Sociological Review, 27*(1), 31–41.

European Values Study Group and World Values Survey Association (1999–2002). European and world values surveys integrated data file, release I [Data file]. Available from Inter-university Consortium for Political and Social Research website, http://www.worldvaluessurvey.org.

Fehr, E., & Schmidt, K. (1999). A theory of fairness, competition, and cooperation. *Quarterly Journal of Economics, 114*(3), 817–868.

Fehr, E., & Schmidt, K. (2002). Theories of fairness and reciprocity – Evidence and economic applications. In M. Dewatripont, L. P. Hansen, & S. J. Turnovsky (Eds.), *Advances in economics and econometrics – 8th world congress, econometric society monographs*. Cambridge: Cambridge University Press.

Fukuyama, F. (1995). *Trust: The social virtues and the creation of prosperity*. New York: The Free Press.

Glaeser, E. L., Laibson, D. I., Scheinkman, J. A., & Soutter, C. L. (2000). Measuring trust. *Quarterly Journal of Economics, 115*(3), 811–846.

Glick, P., & Fiske, S. T. (1996). The ambivalent sexism inventory: Differentiating hostile and benevolent sexism. *Journal of Personality and Social Psychology, 70*, 491–512.

Güth, W., Schmittberger, R., & Schwarze, B. (1982). An experimental analysis of ultimatum bargaining. *Journal of Economic Behavior and Organization, 3*, 367–388.

Hardin, R. (2002). *Trust and trustworthiness*. New York: Russell Sage Foundation.

Hughes, E. C. (1945). Dilemmas and contradictions of status. *American Journal of Sociology, 50*, 353–354.

Inglehart, R. (1999). Trust, well-being and democracy. In M. Warren (Ed.), *Democracy and trust* (pp. 88–120). New York and Cambridge: Cambridge University Press.

Jackman, M. R. (1994). *The velvet glove, paternalism and conflict in gender, class, and race relations*. Berkeley, CA: University of California Press.

Kahneman, D., Knetsch, J., & Thaler, R. (1986). Fairness as constraint on profit seeking: Entitlements in the market. *American Economic Review, 76*, 728–741.

Keltner, D., Gruenfeld, D. H., & Anderson, C. (2003). Power, approach, and inhibition. *Psychological Review, 110*(2), 265–284.

Knack, S. (2002). Social capital and the quality of government: Evidence from the American states. *American Journal of Political Science, 46*, 772–785.

Knack, S., & Keefer, P. (1997). Does social capital have an economic payoff? A cross-country investigation. *Quarterly Journal of Economics, 112*(4), 1251–1288.

Koehler, J. J., & Gershoff, A. (2003). Betrayal aversion: When agents of protection become agents of harm. *Organizational Behavior and Human Decision Processes, 90*, 244–261.

Kosfeld, M., Heinrichs, M., Zak, P. J., Fischbacher, U., & Fehr, E. (2005). Oxytocin increases trust in humans. *Nature, 435*(2), 673–676.

Kramer, R. (1999). Trust and distrust in organizations: Emerging perspectives, enduring questions. *Annual Review of Psychology, 50*, 569–598.

Kramer, R. M., & Tyler, T. R. (1996). *Trust in organizations*. Thousand Oaks: Sage.

Kreps, D. M. (1990). Corporate culture and economic theory. In J. E. Alt & K. A. Shepsle (Eds.), *Perspectives on positive political economy* (pp. 90–143). Cambridge: Cambridge University Press.

LaPorta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1997). Trust in large organizations. *American Economic Review, 87*(May), 333–338.

Lips, H. M. (1991). *Women, men, and power*. Mountain View, CA: Mayfield Publishing.

Loewenstein, G. F., Thompson, L., & Bazerman, M. (1989). Social utility and decision making in interpersonal contexts. *Journal of Personality and Social Psychology, 57*(3), 426–441.

Luhmann, N. (1979). Trust: A mechanism for the reduction of social complexity. In N. Luhmann (Ed.), *Trust and power*. New York: Wiley.

Mainiero, L. A. (1986). Coping with powerlessness: The relationship of gender and job dependency to empowerment-strategy usage. *Administrative Science Quarterly, 31*, 633–653.

Major, B., & Adams, J. B. (1983). Role of gender, interpersonal orientation, and self-presentation in distributive-justice behavior. *Journal of Personality and Social Psychology, 45*(3), 598–608.

Malhotra, D. (2004). Trust and reciprocity decisions: The differing perspectives of trustors and trusted parties. *Organizational Behavior and Human Decision Processes, 94*, 61–73.

Mansbridge, J. (1999). Altruistic trust. In M. E. Warren (Ed.), *Democracy and trust* (pp. 290–309). Cambridge: Cambridge University Press.

Mayer, R. C., Davis, J. H., & Schoorman, F. D. (1995). An integrative model of organizational trust. *Academy of Management Review, 20*, 709–734.

Meeker, B. F., & Weitzel-O'Neill, P. A. (1977). Sex roles and interpersonal behavior in task-oriented groups. *American Sociological Review, 42*, 91–105.

Pillutla, M. M., & Murnighan, J. K. (1996). Unfairness, anger and spite: Emotional rejections of ultimatum offers. *Organizational Behavior and Human Decision Processes, 68*, 208–224.

Powell, M., & Ansic, D. (1997). Gender differences in risk behaviour in financial decision-making: An experimental analysis. *Journal of Economic Psychology, 18*(6), 605–628.

Putnam, R. D. (1993). *Making democracy work: Civic traditions in modern Italy*. Princeton, NJ: Princeton University Press.

Putnam, R. D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon and Schuster.

Rabin, M. (1993). Incorporating fairness into game theory and economics. *American Economic Review, 83*(5), 1281–1302.

Rahn, W. M., Yoon, K. S., Lipson, S. J., & Garet, M. S. (2002). Geographies of trust: Examining variation in generalized social trust across Knight communities. Working Paper, University of Minnesota.

Ridgeway, C. L., & Berger, J. (1986). Expectations, legitimating, and dominance behavior in task groups. *American Sociological Review, 51*, 603–617.

Ridgeway, C. L., Berger, J., & Smith, L. R. (1985). Nonverbal cues and status: An expectation states approach. *American Journal of Sociology, 90*(5), 955–978.

Rilling, J. K., Gutman, D. A., Zeh, T. R., Pagnoni, G., Berns, G. S., & Kilts, C. D. (2002). A neural basis for social cooperation. *Neuron, 35*(2), 395–405.

Rotter, J. B. (1980). Interpersonal trust, trustworthiness, and gullibility. *American Psychologist, 35*(1), 1–7.

Rousseau, D., Sitkin, S., Burt, R., & Camerer, C. (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management Review, 23*, 393–404.

Sampson, E. E. (1975). On justice as equality. *Journal of Social Studies, 31*(3), 45–64.

Sanfey, A. G., Rilling, J. K., Aronson, J. A., Nystrom, L. E., & Cohen, J. D. (2003). The Neural Basis of Economic Decision-Making in the Ultimatum Game. *Science, 300*(June), 1755–1758.

Schechter, L. (2003). Traditional trust measurement and the risk confound: An experiment in rural Paraguay. Working Paper, University of California at Berkeley.

Siegel, S., & Castellan, J. N. (1988). *Nonparametric statistics for the behavioral sciences*. New York: McGraw-Hill.

Siegrist, M., Cvetkovich, G., & Gutscher, H. (2002). Risk preference predictions and gender stereotypes. *Organizational Behavior and Human Decision Processes, 87*(1), 91–102.

Slemrod, J., & Katuscak, P. (2002). Do trust and trustworthiness pay off? Retrieved January 23, 2005, from National Bureau of Economic Research website (Working Paper #9200). Available from http://papers.nber.org/papers/w200.

Smith, K., Carroll, S., & Ashford, S. (1995). Intra- and interorganizational cooperation: Toward a research agenda. *Academy of Management Journal, 38*, 7–23.

Snijders, C., & Keren, G. (1999). Determinants of trust. In D. V. Budescu, I. Erev, & R. Zwick (Eds.), *Games and human behavior: Essays in honor of amnon rapoport* (pp. 355–385). Mahwah, NJ: Lawrence Erlbaum.

Sutter, M., & Kocher, M. (2003). Age and the development of trust and reciprocity. Working Paper, University of Innsbruck.

Swim, J. K., & Campbell, B. (2003). Sexism: Attitudes, beliefs, and behaviors. In R. Brown & S. Gaertner (Eds.), *Blackwell handbook of social psychology: Intergroup processes* (pp. 218–237). Oxford, UK: Blackwell Publishing.

Wehmeyer, M. L. (1993). Gender differences in locus of control scores for students with learning disabilities. *Perceptual and Motor Skills, 77*(2), 359–366.

Zak, P., & Knack, S. (2001). Trust and growth. *Economic Journal, 111*, 207–243.