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Symposium

Is More Information Always Better? An Experimental Study of Charitable Giving and Hurricane Katrina

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We report results of an experiment designed to assess the impact of Hurricane Katrina on the pattern and level of charitable contributions of donors. The study includes an experimental measure of charitable giving and targets three charities: the American Red Cross, the Salvation Army, and Oxfam International. In the experiment subjects make allocation decisions from three endowments ($10, $20, and $50) and with four different matching subsidies (0%, 25%, 50%, and 100%), with the matching amount provided by the experimenter. Two locations (Texas and Minnesota) and two information conditions are used. Survey measures of sympathy, risk perceptions, and perceptions of Katrina victims are also collected. The probability and amount of giving are responsive to the experimental design parameters—the endowment and match. We find evidence of "Katrina overload" as those closest to the disaster respond negatively to Katrina-related priming information. Perceptions of the psychological attitudes of the victims of the disaster have a significant effect on the amount given.

Hurricane Katrina was the most catastrophic natural disaster in our nation's history.

—David Paulison, Federal Emergency Management Agency (FEMA) Director

JEL Classification: C91, D81

1. Introduction

The devastation resulting from Hurricane Katrina has elicited unprecedented levels of charitable giving on the part of the general public. In just the first 11 weeks following Katrina, private charities donated approximately $2.7 billion, and $62 billion was appropriated by Congress (Frank 2005). Though motivations for giving to charitable organizations are varied,

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there are at least two reasons that people may increase donations to charitable organizations when a disaster occurs. First, the disaster may change their perceptions of the likelihood and cost of a disaster. Second, donors may be more sympathetic to the plight of others hurt by the disaster and so may increase donations.

When a disaster occurs, images of individuals' suffering are broadcast widely. The pain and suffering that these victims are feeling enters the everyday lives of observers all over the country, even all over the world. Contributions then flow into charities involved in relief efforts. Why does the immediacy of victims' plight increase giving? Research shows that donors are often much more willing to give to a specific, identified victim of a particular event than to disaster relief in the abstract or to efforts to prevent or lessen the potential damage from disasters. Schelling (1968) identified this phenomenon as the "identifiable victim" effect.[1] When a potential problem turns into a real one, its victims are transformed from "statistical victims," probabilities of injury and death, to real live victims. When an event actually occurs and a particular person or group is hurt, this evokes greater sympathy for the victims, and thus greater giving. Schelling phrases it this way: "The more we know, the more we care."

Jenni and Loewenstein (1997) and Small and Loewenstein (2003) focus on the psychological mechanisms that may contribute to the identifiable victim effect. They find evidence that the immediacy and salience of a real victim, which seem intuitively to be responsible for the change in perceptions, are not the most important factors. Their research indicates that the most important factor may be the relative size of the group of victims who can be helped relative to the number of people at risk. In a disaster, the identified victims are their own reference group: 100% of them have been affected and can be helped by assistance.

Another possibility is that information about victims and their suffering, whether provided through the media or direct experience with victims of a disaster, may simply decrease social distance between the donor and the victim, which then causes other-regarding behavior (including charitable contributions) to increase (Bohnet and Frey 1999).

In this study, we examine the impact of perceptions, attitudes, and information, as well as the endowment and price of giving, on donations to charity in a laboratory setting. Subjects complete a set of decisions involving the opportunity to donate to a charity that was active in disaster relief in conjunction with Hurricane Katrina. In addition, we collect data on disaster experience, sympathy for others, and perceptions of the likelihood and cost of various events (weather and non-weather disasters, accidents, etc.). We report analysis of the relationship between these psychological factors and actual giving behavior.

2. Design

The design of the study incorporates an experiment and a survey. The experiment consists of a set of experimental measures of altruism and charitable giving that have been successfully employed by the researchers to study charitable giving (see Eckel and Grossman 2003, 2006a, b). Because these measures involve real trade-offs between a subject's own earnings in the experiment and the amount sent to the charities, these measures are likely to be more accurate

[1] Jenni and Loewenstein (1997) give the example of Jessica McClure ("baby Jessica"), who was trapped in a backyard well in Texas. Donors gave over $700,000 to the family; this amount spent on removing safety hazards for children would have had a much more beneficial effect. But statistical victims don't attract the same attention as "real" victims.

and informative than are survey-based measures of altruism and charitable donations, where little is at stake. The survey component of the study was completed after the experiment and involves collection of information on demographics, other giving behavior, previous disaster experience, sympathy, risk perceptions, and perceptions of Katrina victims.

Experimental Measure of Altruism

We measure preferences for giving using a modified dictator allocation task (see Eckel and Grossman 2003, 2006a, b). For each decision, subjects are provided with an endowment and are offered the opportunity to donate any part of their endowment (in private and anonymously) to a given charitable organization. We use the strategy method: Subjects make a set of allocation decisions with different parameters, one of which is chosen for payment. The set of decisions varies the target charitable organization, the endowment, and the extent to which contributions are subsidized by the experimenter.

Three different charities—the American Red Cross (ARC), the Salvation Army (SA), and Oxfam International (Oxfam)—were selected because all were active in providing aid to Hurricane Katrina victims and because they are likely to vary in terms of how they are perceived by subjects. The ARC is a prominent national and international disaster relief agency and is familiar as such to participating subjects. The SA is another large charity that helped with Hurricane Katrina victims, but one that is likely to be perceived as "more local" in scope and religious in orientation. Oxfam also provides disaster relief, but since its role is less focused on immediate aid to victims and more focused on long-term rebuilding, it is likely to be less familiar to the subjects and is therefore less likely to be associated with stranded, helpless Hurricane Katrina victims.

The experimental design has subjects make 12 separate contribution decisions for each of the three charities. There are four decisions for each of three endowment levels, \$10, \$20, and \$50. The four decisions vary the subsidy level, with matching rates of 0%, 25%, 50%, and 100%. This gives a total of 36 decisions for each subject. Instructions and forms are available upon request.

Survey

The survey consists of several components. In order to look at the empathy and distress levels of our subjects, we employ the Interpersonal Reactivity Scale (Davis 1994). For an instrument to measure risk perceptions regarding catastrophic events, we adapted questions from Halpern-Felsher et al. (2001) and Kunreuther (1996) and added similar items of our own. In addition, we developed a set of questions to elicit the perceptions that our subjects had of the Katrina victims. The survey also collects information on standard demographics, religion, charitable giving, and experience with natural disasters (either direct or indirect).

Locations

Two locations were chosen for the study, one of which was more affected than the other by Katrina. While every part of the country has in some way been influenced by the hurricane, the magnitude of the impact varies. Texas has been host to nearly 135,000 displaced persons, with

all of the attending financial costs and disruption. In addition, as a Gulf Coast state, Texas is at risk for future hurricane devastation, and its residents have experienced such catastrophes in the past. Minnesota, on the other hand, experienced relatively little immediate impact from Katrina (for example, only 1444 victims applied for assistance from that state).[2] However, the two states have in common the risk from other smaller and more localized natural disasters, such as flooding and tornadoes.

Procedures

A total of 10 sessions were conducted, six at the University of Texas at Dallas (UTD) and four at Saint Cloud State University (SCSU), with a total of 265 student participants. Nine sessions were conducted in undergraduate classes in economics and social science, and the 10th session (with eight subjects) was conducted in a master's-level introductory statistics class. Sessions were run in May and November of 2006, about 8 and 15 months following Hurricane Katrina, respectively. Subjects were recruited from, and the sessions were run in, classrooms.[3] Participation was voluntary, and the subjects' professors were not present during the experiment.

The researchers entered the classroom and introduced themselves and their assistants. Subjects were told that participation was voluntary and that six subjects would be chosen at random and paid in cash. Students in the classroom were then given the opportunity to leave: On average about one third of students at UTD and one fourth of students at SCSU opted out. We then distributed consent forms, after which subjects were again given an opportunity to opt out.

At the start of the experiment, we asked for a volunteer to be the monitor for the group. The monitor was paid $20 and was responsible for randomly selecting the subjects for payment, verifying the payment to the subjects, and verifying the payment to the charities. We then distributed and read the instructions aloud. The instruction phase included sample allocation problems (one for each charity) and a quiz to test for understanding of the matching procedure, as well as an explanation of the payment procedure. After the experimenter and assistants verified that everyone understood the task, identification numbers (used to maintain anonymity and for payment), decision sheets, and envelopes were distributed.

A subject was allocated either to the control (NO PRIME) or prime (PRIME) treatment, and the charity order was fully blocked for each. The decision forms looked very similar. Both forms contained a small description of each charity on the first page, followed by the three decision forms. In the NO PRIME treatment, the information was very general, and in the PRIME treatment, the information was phrased specifically to address the charities' involvement in disaster relief after Hurricane Katrina. In addition, the forms in the PRIME treatment group contain a small fact sheet describing the aftermath of Hurricane Katrina (see Appendix A). All subjects were told the following: "Here are your decision forms. Please pay close attention to the information on the first page." When all tasks were completed, the subjects were instructed to seal the decision forms in the envelopes provided and to write their

[2] The FEMA website reports the location of victims by state. See their website (www.fema.gov).

[3] Eckel and Grossman (2000) conduct similar experiments in classrooms and show that overall giving is higher, but treatment effects are unchanged, relative to subjects recruited to another location.

subject numbers on the fronts of the envelopes. We then distributed the survey, which was completed while the experimenter was calculating earnings.

The decision envelopes were placed in a bag and mixed, and the monitor pulled two envelopes out of the bag for each charity (six in total). For each envelope selected, the monitor rolled a 12-sided die to determine which decision (from among the 12 on the decision sheet for that charity) was chosen for payment. Earnings were calculated and placed in a new envelope with the subject's identification number on the outside. The monitor wrote the identification numbers of winners on the board and distributed the earnings envelopes to the subjects who turned in an index card with a matching subject identification number. The experimenter then wrote the checks for the charities: The monitor verified the amount and then accompanied the experimenter to a mailbox to verify that the checks were mailed. Subjects were invited to verify the checks for themselves or to accompany the experimenter to the mailbox if they wished.

3. Hypotheses

The experiment and survey allow us to test three hypotheses concerning the impacts of sympathy, experience, and time on giving behavior.

Sympathy and Giving

Sympathy is an important factor in the decision to give. When an event such as Katrina occurs, images of suffering are broadcast in the media and published in newspapers and magazines. This information makes the victims easier to identify with—it brings them closer, into our homes and everyday conversations. We would expect that the "identifiable victim" effect would be stronger for those individuals who are closer to the disaster. In other words, people who have either direct or indirect experience with disaster victims are likely to be more sympathetic. Our first hypothesis about the decision of how much to give addresses the importance of sympathy in giving decisions.

HYPOTHESIS 1. Since the UTD sample had more direct experience with Hurricane Katrina victims, UTD students should donate more overall and should respond more to the PRIME treatment.

Experience and Giving

Included in our survey were items used in previous research that are designed to assess risk perceptions for catastrophic events. An event such as Katrina is likely to alter perceptions of risk. We hypothesize that subjects who have had direct or indirect experience with a catastrophic event will perceive disasters to be more likely and more costly. In addition, those who have experienced a disaster will be able to identify with the disaster victims in a way that other people will not: Having been through a similar experience brings the plight of victims closer to home; the risk, costs, and emotional turmoil are all more salient for individuals who have experienced a disaster.

Beyond those who have experienced a disaster, we would expect that persons who perceive a high risk of being affected by a catastrophic event will be more generous to charities that are

oriented toward disaster relief, in part as a form of insurance. Increased salience of probabilities and costs may mediate the decision to donate and to focus donations on charities oriented toward disaster relief. This trend would exist among individuals who have experienced a disaster themselves as well as among those individuals who know someone who has experienced a natural disaster, which leads us to our next hypothesis.

HYPOTHESIS 2. Individuals who have either (a) been previously affected by a natural disaster or (b) know someone who has been affected by a natural disaster will donate more to the charities than individuals who have not.

Time and Giving

Feelings of sympathy and perceptions of risk are likely to fade with time, causing behavior to revert to the predisaster pattern. Does an event such as Hurricane Katrina have a long-term impact on the giving levels and patterns, the sympathy, and the risk attitudes of people? If donations are reverting to predisaster levels, then we would expect that donations in the 15-month postdisaster sessions would be lower than in the eight-month postdisaster sessions and that this level should be indistinguishable across the framed and control treatments. Any other pattern of giving would indicate that Hurricane Katrina had a long-term impact on charitable giving. This leads us to our final hypothesis.

HYPOTHESIS 3. If the impact of Hurricane Katrina has no effect or has the same effect on charitable giving in the short run and the long run, then there should be no difference in the amount donated between either of the samples or of the treatments in the 8- and 15-month postdisaster sessions.

4. Results

In total 265 subjects participated, 122 at UTD and 143 at SCSU. All 265 subjects provided complete allocation decisions, but some did not fully complete the survey because of time constraints in the classrooms. In the discussion that follows, we report the number of observations in each component of the analysis.[4]

Appendix Table B1 reports, by location, summary statistics for a selection of the survey questions used in the analysis. Survey responses did not differ significantly between the two locations with two exceptions. The pattern of knowing someone adversely affected by a natural disaster (Question 2) reflects differences in natural disasters prevalent in the two states: UTD subjects were about twice as likely as SCSU subjects to know a hurricane victim; SCSU subjects were about four times as likely to know a tornado victim. The subjects also differed by location in their answers to the question of whether New Orleans should be rebuilt no matter what the cost (Question 6). Texas participants were less likely to agree with this statement. The responses for the other natural disasters were similar.

[4] The subject pools were similar in many respects, including gender composition, giving to nonprofit organizations, student status, and marital status. Significant differences are observed in age (UTD students average 1.5 years older than SCSU students), employment status (UTD students are less likely to have a job), and attendance at religious services (UTD students were more likely than SCSU students to attend services more than once a week as well as to never attend).

Table 1. Impact on the Probability of Giving: Random Effects Logit Model

	Decision Characteristics	
Variable	Model 1 Base Levels	Model 2 Interactions
$20 endowment	0.166 (1.41)	0.166 (1.41)
$50 endowment	−0.119 (−1.03)	−0.119 (−1.04)
25% match	1.986 (15.64)***	2.005 (14.85)***
50% match	2.619 (18.57)***	2.655 (15.76)***
100% match	2.961 (19.69)***	3.030 (12.66)***
PRIME	−0.668 (−3.88)***	−0.309 (−1.20)
UTD	−0.040 (−0.24)	0.652 (2.23)**
Eight months	−0.391 (−2.34)**	−0.205 (−0.90)
ARC	0.459 (3.93)***	0.460 (3.93)***
SA	0.261 (2.28)**	0.262 (2.29)**
UTD × PRIME		−0.895 (−2.51)**
RATE × PRIME		−0.099 (−0.33)
UTD × Eight months		−0.238 (−0.68)
Sigma_u	3.115	3.104
Rho	0.747	0.745
Observations	9540	9540
Groups	265	265
Log likelihood	−1586.515	−1584.478
Wald	591.49	569.99
Wald, *p*-value	0.00	0.00

Marginal effects are shown; *z*-stats appear in parentheses.
* Significance at $p < 0.10$.
** Significance at $p < 0.05$.
*** Significance at $p < 0.01$.

We first discuss the impact of various factors on the probability of making a donation. We then examine in more detail the amount of giving and the differences in patterns of giving across the two locations and time periods.

The Probability of Giving

Before considering the contribution data, we first briefly address the individual's decision whether or not to give. All but six of our 265 subjects gave something in at least one instance (recall each subject made 36 giving decisions); of the 9540 total decisions, 88% were positive. In Table 1 we report results from two random effects logit models, including just experimental design variables (model 1) and including interaction effects (model 2). The variables in the model are dummy variables equal to 1 for the levels of each factor (e.g., $20 endowment = 1 if the endowment is $20; $20 endowment = 0 otherwise). PRIME indicates the treatment that received the information prime about Hurricane Katrina, and UTD = 1 for the experiments that were conducted at UTD. "Eight months" is equal to 1 for the earlier sessions. ARC and SA are equal to 1 for those charities. Interactions are as indicated.

From model 1 we see that the probability of giving is unaffected by the endowment but that matching affects contributions in two ways. First, the presence of a matching contribution significantly increases the probability of giving; second, the probability of giving increases significantly as the matching offer increases.[5] We find no difference in the overall probability of

[5] Test results are available upon request to the authors.

giving between UTD and SCSU subjects. The PRIME treatment is found to have opposite the effect hypothesized; subjects in the PRIME treatment are less likely to donate than are subjects in the NO PRIME treatment. We also find that time has opposite the effect hypothesized; subjects in the eight-month sessions give less than subjects in the 15-month sessions. The probability of giving is significantly higher when ARC or SA is the receiving charity.

When we include the interaction terms, we find that the negative effect of PRIME is driven by the UTD subjects, indicating a Katrina burnout or backlash effect from those more exposed to the disaster and its victims. However, a log likelihood ratio test cannot reject the null hypothesis that, jointly, the interaction terms fail to add explanatory power to the model [$\chi^2(4) = 4.2$, $p = 0.24$].

One way to look at this issue of "Katrina burnout" is by examining the amount and type of coverage by the newspapers in the two different locations. The *Dallas Morning News* had much more active coverage of the hurricane: There were 1962 articles in 2005 and 878 articles in 2006, versus only 186 articles in 2005 and 52 in 2006 in the *St. Cloud Times*.[6] The evidence of burnout in our data is most pronounced in the sessions that were run in Dallas in April and May 2006. Looking at the news articles appearing at this time, we see that there was a pronounced presence of negative press for the Katrina evacuees. For example, there are articles about the number of criminals that had located in the Dallas–Fort Worth Metroplex ("Where they're living"; *Dallas Morning News* April 14, 2006, p. 2A) and different FEMA scams ("Man convicted of using homeless to scam FEMA"; Yan 2006; "FEMA worker accused of OK'ing false claims: Denton officials looking at numerous local applications"; Fielder 2006). The articles appearing in the *St. Cloud Times* had a much more positive slant (for example, "Volunteer efforts earn Sauk Rapids man Citizen of the Year"; Ryan 2006a; "New Orleans deserves credit for its poll turnout"; Ryan 2006b).

We also ran additional specifications of the models, including demographic and survey items. The following results can be seen in those models, which are not reported here but are available upon request: First, in all cases, women are significantly more likely than men to give. Previous giving, whether to church and church-affiliated nonprofits or to nonchurch nonprofits, had no effect on the probability of giving. Subjects who believed FEMA performed well were less likely to give. This finding is consistent with the argument that increased government spending for activities previously funded by private donations can crowd out private giving. Our finding would indicate a refinement to that hypothesis; specifically, effective government spending can crowd out private giving. Finally, those who believe the private relief charities performed well were more likely to give (i.e., effective performance is rewarded).

Contribution Amounts

We next turn to the analysis of the amount contributed. Table 2 provides the average total amount given to the charities (including any matching amounts) by location, treatment, and time. (A full breakdown of results by charity, treatment, location, and time is presented in Appendix Table B2.) Overall, SCSU subjects were more generous than their UTD counterparts. This difference is driven primarily by greater giving on the part of the SCSU subjects in the PRIME treatment. SCSU PRIME subjects are on average about $3.50 more generous than

[6] The search of the *Dallas Morning News* archives was conducted using a search for "Hurricane Katrina" at http://infoweb.newsbank.com. The search of the *St. Cloud Times* was conducted on their website.

Table 2. Average Total Giving (including match) by Location, Treatment, and Time (standard deviation [SD] in parentheses)

		Pooled		8-Month		15-Month	
	All Donors	PRIME	NO PRIME	PRIME	NO PRIME	PRIME	NO PRIME
UTD	15.65	14.79	16.95	13.53	22.86	16.63	14.75
	(9.92)	(9.54)	(10.44)	(8.04)	(10.66)	(11.24)	(9.60)
	$N = 122$	$N = 74$	$N = 48$	$N = 44$	$N = 13$	$N = 30$	$N = 35$
SCSU	17.40	18.16	16.61	17.94	15.43	18.33	17.49
	(8.77)	(9.40)	(8.05)	(7.42)	(8.38)	(10.79)	(7.79)
	$N = 143$	$N = 73$	$N = 70$	$N = 32$	$N = 30$	$N = 41$	$N = 40$

UTD PRIME subjects; this difference is statistically significant at $p = 0.03$. For the NO PRIME subjects, the difference in mean giving was only \$0.34. The effect of time on giving is mixed. UTD PRIME subjects gave significantly less than their NO PRIME counterparts at eight months ($p = 0.001$). In the later session the difference has disappeared, indicating that any burnout effect in the short term may dissipate over time as victims return home or are integrated into their new communities. Mean giving by SCSU PRIME subjects varied insignificantly over time.

A clearer picture of behavior can be gleaned by examining the effect on giving of the endowment and matching treatments. Figure 1 shows the amount of money received by the charity, broken down by location, endowment, and matching level. Total dollar donations (including the matching amount) increase with the endowment and the matching rate. The pattern of giving is similar across locations, with slightly higher giving at SCSU. Table 3 reports both out-of-pocket giving as well as the total received by the charity. Consistent with

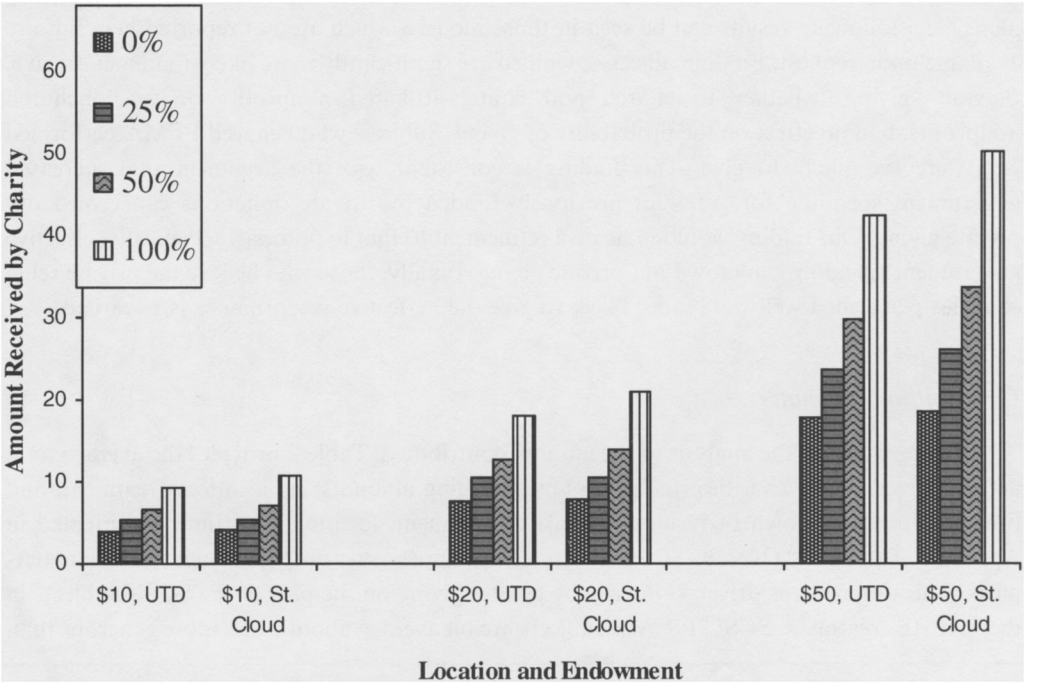

Figure 1. Average Amount Charity Receives, by Location, Endowment, and Matching Rate

Table 3. Average Amount Sent Out-of-Pocket and Received by Charity, in Dollars and as a Percentage of the Endowment

	$10 Endowment		$20 Endowment		$50 Endowment	
Matching rate	Out-of-Pocket	Including Match	Out-of-Pocket	Including Match	Out-of-Pocket	Including Match
0% Match	$4.04	$4.04	$7.68	$7.68	$18.13	$18.13
% of Endowment	40.4	40.4	38.4	38.4	36.3	36.3
25% Match	$4.36	$5.45	$8.48	$10.60	$19.94	$24.93
% of Endowment	43.6	54.5	42.4	53.0	39.9	49.9
50% Match	$4.52	$6.79	$8.90	$13.34	$21.22	$31.83
% of Endowment	45.2	67.9	44.8	66.7	42.4	63.7
100% Match	$4.98	$9.97	$9.82	$19.64	$23.33	$46.66
% of Endowment	49.8	99.6	49.1	98.2	46.7	93.3

expectations, total giving (including any match) increases with endowment and increases with the matching rate (i.e., as the match rate increases, the cost of giving, or the price, declines, so the "quantity" of charitable services purchased should increase). The out-of-pocket giving increases as the endowment increases, but at a decreasing rate, so that the percentage of the endowment being donated slightly decreases as the endowment increases. While matching is expected to increase total giving, out-of-pocket giving could be partially crowded out by the match. As seen in Table 3, the matching rate not only fails to crowd out donations, donations are actually being crowded in. That is, *out-of-pocket* donations increase as the matching rate increases.

Since we have already seen some evidence that behavior is changing over time, it is instructive to look at this same information separately for the 8- and 15-month samples. Figures 2 and 3 illustrate how the impact of the PRIME treatment differentially affects giving behavior as Hurricane Katrina becomes a more distant memory. We see that in the eight-month sample, the PRIME has a large negative impact on giving in the UTD sample but that it increases giving in the SCSU sample. However, the PRIME seems to impact both groups similarly in the 15-month sample, serving to slightly increase donations. This also indicates

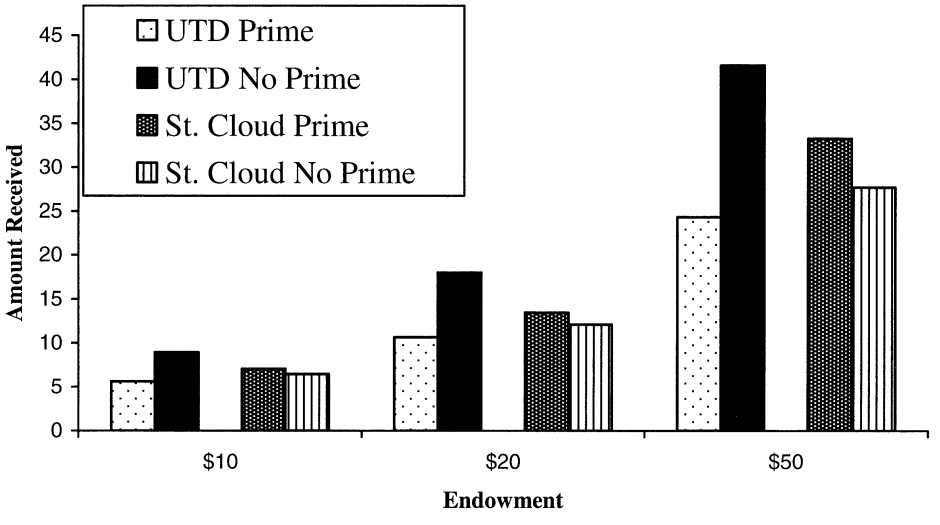

Figure 2. Average Received by Charities, Eight-Month Sample

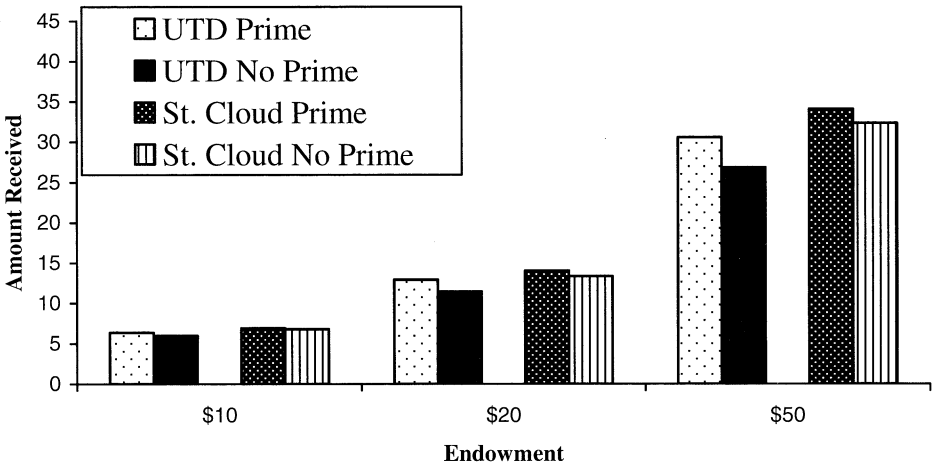

Figure 3. Average Received by Charities, 15-Month Sample

a certain amount of burnout for the UTD subjects in the short term, which diminishes over time.

The three charities for this study—the SA, Oxfam, and the ARC—were chosen because they were all active in the recovery efforts in the aftermath of Hurricane Katrina but vary in how they are perceived by individuals. The ARC and the SA are both large, national charities, but the SA is perceived as being more local in nature as well as more religious in orientation. Oxfam is a large, international charity that many of the subjects may not know about. Even though subjects were given a small profile on each charity (see Appendix A), we hypothesized that the ARC and the SA would receive higher levels of donations than Oxfam, based on familiarity with the charities. However, this is not the case. Donations to Oxfam are, though slightly lower, essentially the same as for the other two charities.

In addition to the differences in visibility, we suspected that the charities with a more visible presence in the hurricane recovery effort would receive larger donations in the PRIME treatment, where subjects were given information about the disaster, making it more salient as they made their donation decisions. However, as Table 4 shows, after pooling across location and time, there is essentially no difference in the impact of the PRIME treatment on giving to any of the charities.

To more completely explore the determinants of giving and to control for the fact that subjects made multiple predictions, we employ a random effects Tobit model with two-way

Table 4. Average Amount Received by Each Charity (including match), by Prime in Dollars and as a Percentage of the Endowment

	Salvation Army		Oxfam International		American Red Cross	
Endowment	PRIME	NO PRIME	PRIME	NO PRIME	PRIME	NO PRIME
$10	$6.59	$6.80	$6.25	$6.41	$6.48	$6.92
% of Endowment	65.9	68.0	62.5	64.1	64.8	69.2
$20	$12.88	$13.19	$12.23	$12.51	$12.93	$13.26
% of Endowment	64.4	66.0	61.2	62.6	64.6	66.3
$50	$30.33	$30.63	$30.18	$29.89	$30.26	$31.12
% of Endowment	60.7	61.3	60.4	59.8	60.5	62.2

Table 5. Determinants of Out-of-Pocket Giving as a Percentage of the Endowment: Random Effects Tobit Model, Two-Way Censoring

	Decision Characteristics	
	Model 1: Base Levels	Model 2: Interactions
Variable		
$20 endowment	−1.560 (−2.56)**	−1.561 (−2.58)***
$50 endowment	−4.463 (−7.30)***	−4.453 (−7.35)***
Match	2.493 (3.17)***	2.447 (3.12)***
RATE	11.439 (12.46)***	8.527 (7.28)***
PRIME	−1.518 (−1.72)*	3.760 (2.41)**
UTD	−0.842 (−0.88)	−2.288 (−1.94)*
Eight months	0.666 (0.73)	−4.754 (−3.85)***
ARC	2.354 (3.87)***	2.349 (3.88)***
SA	2.276 (3.74)***	2.289 (3.78)***
UTD × PRIME		−5.707 (−2.99)***
RATE × PRIME		5.319 (3.95)***
UTD × Eight months		22.135 (10.67)***
Eight months × PRIME		2.757 (1.39)
UTD × Eight months × PRIME		−28.847 (−9.98)***
Constant	38.336 (42.85)***	38.704 (35.31)***
Sigma_u	29.348	27.115
Sigma_e	23.049	22.955
Rho	0.619	0.583
Observations	9540	9540
Left-censored observations	1089	1089
Uncensored observations	7323	7323
Right-censored observations	1128	1128
Groups	265	265
Log likelihood	−35,729.769	−35,702.95
Wald	486.57	808.62
Wald, *p*-value	0.00	0.00

z-Stats appear in parentheses.
* Indicates significance at $p < 0.10$.
** Indicates significance at $p < 0.05$.
*** Indicates significance at $p < 0.01$.

censoring. Because of the nonlinear relationship between endowment and donations, we chose to specify the dependent variable as the percent of endowment passed to the charity.

Table 5 reports results from random effects Tobit models with two-way censoring, including the experimental design variables (model 1) and interaction effects (model 2). The dependent variable is the percentage of the endowment passed to the charity (0–100%). Independent variables are dummy variables for the endowment levels; Match, equal to 1 if there is a match; RATE, the rate at which contributions are matched (0, 0.25, 0.5, 1); and the rest as defined previously.

From model 1 we see that subjects pass significantly smaller percentages of their endowment as the endowment increases, but the decline is far less than the increase in endowment, resulting in more money going to the charities. Donors respond to the offer of a subsidy; the offer has the effect of increasing the share of the endowment passed to the charities (Match), regardless of the subsidy rate. The rate of matching (RATE) also has

a significant impact on giving; the higher the rate (i.e., the lower the price of giving), the greater the share of the endowment contributed. Finally, subjects were significantly more generous (but the magnitude is small) toward the ARC and SA than toward the control charity Oxfam.

Results from model 1 also address Hypotheses 1 and 3. With respect to Hypothesis 1, we find that UTD subjects are neither more nor less generous than their SCSU counterparts. Contrary to expectations, subjects in the PRIME treatment are marginally less generous than the NO PRIME subjects. We also find that subjects in the eight-month sessions were no more generous than those in the 15-month sessions, consistent with Hypothesis 3.

With the inclusion of the interaction effects (model 2), the effect of the PRIME treatment is highlighted.[7] Now, consistent with Hypothesis 1, we find that PRIME subjects are more generous than the NO PRIME subjects; but inconsistent with Hypothesis 3, we find eight-month–session subjects to be less generous than the 15-month–session subjects. However, these effects appear to be location driven. UTD PRIME subjects, and in particular UTD PRIME subjects in the eight-month sessions, are significantly less giving than other subjects. This evidence is further suggestive of a Katrina overload or burnout effect among UTD subjects, those with the most immediate Katrina experience.

Interestingly, the PRIME appears to enhance the effect of the matching subsidy. The interaction of PRIME with RATE carries a positive, significant coefficient, indicating that in the presence of the priming information, the subsidy has a more powerful effect on giving.

Table 6 presents results for three additional models. The variables in model 2 are controlled for but not reported in this table: Coefficients on the suppressed variables are not affected by the inclusion of the new variables. Model 3 adds subject characteristics to model 2; model 4 further adds giving experience, measures of empathy and distress, and disaster experience variables; and model 5 further adds risk attitude and victim perception variables.[8] Independent variables are as follows:

- Age: age in years;
- Itemize: itemized on last year's tax return;
- Relative income 1–5: self-reported relative income. 1 = significantly below average; 3 = average (omitted category); 5 = significantly above average;
- Church giving: log of self-reported giving to churches and church-related charities;
- Nonchurch giving: log of self-reported giving to secular charities;
- Empathy, Distress: indexes of empathy and distress in the face of a disaster, developed from survey questions from the Davis Interpersonal Reactivity Scale;
- Disaster experience: =1 if answered "yes" to question about own or family disaster experience (Question 1 in Appendix Table B1);
- Know a hurricane victim: =1 if the subject knew a disaster victim (Question 2 in Appendix Table B1);
- Good job FEMA: 1–5 scale, see Question 7 in Appendix Table B1;
- Good job charities: range of 0 to 1; sum of answers to Questions 8–10 in Appendix Table B1, each with a range of 1–5, scaled to fall between 0 and 1;

[7] A chi-square test rejects the null hypothesis that the interaction terms are jointly equal to zero [$\chi^2(5) = 53.6$, $p = 0.000$].

[8] In each case, the chi-square test rejects the null hypothesis that the added variables are jointly equal to zero.

Table 6. Determinants of Out-of-Pocket Giving as a Percentage of the Endowment: Random Effects Tobit Model, Controlling for Model 2

	Model 3: Individual Characteristics	Model 4: Giving and Disaster Experience	Model 5: Risk and Victim Perceptions
Variable			
Female	10.626 (15.70)***	9.671 (12.83)***	8.000 (10.51)***
Age	1.184 (19.82)***	0.840 (12.77)***	0.832 (12.74)***
Itemize	2.922 (3.60)***	2.358 (2.58)**	3.601 (4.16)***
Relative income 1	−10.585 (−9.16)***	−7.452 (−6.34)***	−16.941 (−13.95)***
Relative income 2	−3.185 (−3.65)***	−4.314 (−4.47)***	−7.537 (−8.57)***
Relative income 4	−3.035 (−3.25)***	−2.288 (−2.79)***	−4.453 (−5.19)***
Relative income 5	3.099 (1.65)*	2.316 (1.33)	1.429 (0.80)
Church giving (log)		−0.158 (−1.12)	−0.834 (−5.75)***
Nonchurch giving (log)		−0.440 (−2.97)***	−0.615 (−4.12)***
Empathy		0.432 (5.44)***	0.909 (10.77)***
Distress		−0.197 (−2.76)***	−0.077 (−0.97)
Disaster experience (own or others)		4.852 (6.37)***	−0.691 (−0.84)
Know a hurricane victim		−2.994 (−2.75)***	−0.067 (−0.06)
Good job FEMA			−0.119 (−0.35)
Good job charities			7.475 (2.58)**
Needy victim			4.448 (8.58)***
N.O. residents scattered			2.392 (5.87)***
We should assist victims			−1.306 (−3.12)***
N.O. should be rebuilt			−0.977 (−3.21)***
R1: Weather risk attitudes			−0.389 (−1.17)
Constant	13.042 (7.30)***	12.188 (4.69)***	−8.586 (−2.09)**
Sigma_u (individual)	23.726	23.056	25.549
Sigma_e	22.765	21.824	22.112
Rho (% variation explained by individual effects)	0.521	0.527	0.572
Observations	9540	9216	8820
Left-censored observations	1089	994	973
Uncensored observations	7323	7156	6821
Right-censored observations	1128	1066	1026
No. individuals	265	256	245
Log likelihood	−35,663.67	−34,410.70	−32,890.39
Wald	1696.34	1408.64	1531.83
Wald, *p*-value	0.00	0.00	0.00

z-Stats appear in parentheses.
* Indicates significance at $p < 0.10$.
** Indicates significance at $p < 0.05$.
*** Indicates significance at $p < 0.01$.

- Needy victim: 0–3, sum three questions: 1 if victim is somewhat or much below average income (Question 12 in Appendix Table B1); 1 if victim has education, high school or below high school (Question 13); 1 if victim is black, 0 otherwise (Question 14);[9]

[9] "Needy victim" is an index measuring the extent to which people believe the typical victim was poor, black, and uneducated. Specifically, this index ranges from 0 to 3, with one point added when a subject agrees with each of these categories. A victim was perceived to be "poor" if the subject thought that his income was either below or much below average, and the perception was recorded as uneducated if the subject believed the typical victim had either dropped out of high school or had completed high school (but had not attended any college).

- N.O. (New Orleans) resident scattered: 1–5 scale, Question 4 in Appendix Table B1;
- We should assist victims: 1–5 scale, Question 11 in Appendix Table B1;
- N.O. should be rebuilt: 1–5 scale, Question 6 in Appendix Table B1; and
- R1: index of perceptions of weather-related risks.[10]
- Similar to our previous study comparing charitable contributions between Texas and Minnesota (Eckel and Grossman 2003), across all three models, giving to the charities is positively and significantly correlated with subject gender.[11] Female subjects pass approximately 10 percentage points more of their endowment than do male subjects. Giving is also positively and significantly correlated with age, with giving increasing about 1.2 percentage points per year of age, and (unsurprisingly) with itemizing on the previous year's tax return. Income is modeled using a self-reported measure of relative income, with average income (3) the omitted category. Interestingly, those with self-reported average (relative to their peers) family income (the omitted category) are more generous than both those who self-report below- and above-average income (with the exception of those with much–above average income).

The variables added in model 4 address the impact of giving and natural disaster experience. A perplexing finding is that the generosity in giving to both church and nonchurch-related charities is negatively correlated with giving in this study. These effects are negative in both models, and both are statistically significant in model 5. One explanation for this is that generous donors have already given their desired amounts to disaster relief agencies and would, if given the option, have directed their endowment to some alternative charities. Keeping more of the endowment means they can direct their giving to other outlets. Consistent with Hypothesis 2, we find that subjects with direct disaster experience (their own or that of a family member) are more generous than those without such experience. Just knowing a hurricane victim has a small negative effect on giving, perhaps for the same reason as the impact of prior giving: These subjects may feel they already have given by supporting someone they know, or they may keep more of the endowment in order to give it to a specific victim.

The model 5 variables control for victim perceptions and risk attitudes. Giving is positively and significantly associated with subjects' perceptions of how needy the victim is and to the extent that subjects believe New Orleans residents are scattered across the nation. Contrary to what might be expected, giving was significantly less generous on the part of subjects who strongly agree that New Orleans should be rebuilt and that the typical victim of Katrina deserves assistance. However, the magnitudes of the coefficients are small. The effect of perceptions of the cost and likelihood of a weather-related disaster is insignificant. This indicates to us that social distance and immediacy are more important determinants of giving than is rational calculation of the risks and costs of disaster.

In Table 7 we report results for our most extensive model estimated separately for UTD and SCSU. Separating the subject pools reveals some interesting location effects. We see that UTD subjects are responsive to the offer of a subsidy but not to the rate of subsidy provided; SCSU subjects are not responsive to the offer of a subsidy but are responsive to the rate of

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[10] Factor analysis was used to develop these risk measures. We used a Principle Components Factor Analysis, with an Oblique Promax Rotation, which results in three factors with eigenvalues greater than 1. The Kaiser-Meyer-Olkin measure of sampling adequacy is 0.8274. For our purposes, the first factor, which is made up of the questions about weather-related risks, is most appropriate.

[11] However, unlike the previous study, being actively religious did not significantly enter into any of the specifications.

Table 7. Determinants of Out-of-Pocket Giving as a % of the Endowment: Texas Versus Minnesota

	UTD	St. Cloud
Variable		
$20 endowment	−1.429 (−1.69)*	−2.300 (−2.71)***
$50 endowment	−5.236 (−6.2)***	−4.141 (−4.89)***
Match	4.114 (3.77)***	1.703 (1.56)
RATE	−0.864 (−0.5)	10.676 (6.77)***
PRIME	−0.885 (−0.57)	−0.050 (−0.03)
Eight months	10.058 (5.84)***	−8.891 (−6.22)***
ARC	1.850 (2.19)**	2.729 (3.22)***
SA	3.265 (3.86)***	1.604 (1.90)*
RATE × PRIME	9.415 (4.90)***	7.072 (3.77)***
Eight months × PRIME	−17.765 (−8.43)***	7.260 (3.88)***
Female	15.746 (15.05)***	4.490 (4.11)***
Age	0.662 (6.74)***	1.303 (12.46)***
Itemize	1.390 (1.27)	0.933 (0.65)
Relative income 1	−5.877 (−3.34)***	−17.935 (−9.70)***
Relative income 2	−8.022 (−6.42)***	−2.725 (−2.28)**
Relative income 4	−5.298 (−4.53)***	−7.019 (−5.21)***
Relative income 5	−1.060 (−0.40)	−5.119 (−1.47)
Church giving (log)	−1.113 (−5.22)***	−0.913 (−4.46)***
Nonchurch giving (log)	1.824 (8.73)***	−2.169 (−9.67)***
Empathy	0.732 (6.93)***	0.355 (2.54)**
Distress	0.122 (1.18)	−0.156 (−1.51)
Disaster experience (own or others)	2.774 (2.04)**	4.487 (4.45)***
Know a hurricane victim	−5.421 (−3.57)***	7.468 (4.67)***
Good job FEMA	0.387 (0.83)	−0.683 (−1.23)
Good job charities	14.798 (4.03)***	−11.244 (−2.65)***
Needy victim	6.349 (11.21)***	1.500 (2.63)***
N.O. residents scattered	2.263 (4.53)***	4.263 (8.92)***
We should assist victims	2.117 (3.71)***	−1.511 (−2.06)**
N.O. should be rebuilt	−0.007 (−0.02)	0.095 (0.18)
R1: Weather risk attitudes	−2.737 (−5.60)***	−0.244 (−0.47)
Constant	−40.669 (−8.01)***	6.522 (1.34)
Sigma_u (individual)	22.885	23.559
Sigma_e	20.973	22.552
Rho (% variation explained by individual effects)	0.544	0.522
Observations	4140	4680
Left-censored observations	496	477
Uncensored observations	3182	3639
Right-censored observations	462	564
No. individuals	115	130
Log likelihood	−15,136.167	−17,674.778
Wald	1234.12	931.22
Wald, *p*-value	0.00	0.00

z-Stats appear in parentheses.
* Indicates significance at $p < 0.10$.
** Indicates significance at $p < 0.05$.
*** Indicates significance at $p < 0.01$.

subsidy provided. However, in both locations, the interaction between PRIME and RATE is strong and positive, indicating that subjects receiving the PRIME are more responsive to the subsidy. Among UTD subjects, giving declines with time for the NO PRIME subjects but increases with time for the PRIME subjects, as donations become more similar and less responsive to the prime; among SCSU subjects, giving declines with time for the PRIME subjects but increases with time for the NO PRIME subjects.

The effects of gender, age, itemizing, and income show similar patterns across the two locations, but nonchurch giving is positively correlated with giving to the charities among UTD subjects and inversely correlated with giving to the charities among SCSU subjects. UTD subjects who know a hurricane victim are less generous than those who do not; SCSU subjects who know a hurricane victim are more generous than those who do not. This indicates that Katrina burnout is less likely to be an issue in Minnesota than in Texas.

5. Discussion

In this study we report the results of laboratory experiments designed to gauge the impact of Hurricane Katrina on donations to charity. Lab experiments provide a useful window on the effect of the hurricane on giving, as they allow us to control for various factors affecting giving, while assessing others. In the experiment we vary the location (one relatively near Katrina and one more remote), timing (sessions are conducted at 8 and 15 months following the hurricane), the information given to subjects (with and without information about the impact of Katrina—PRIME and NO PRIME treatments), the endowment given to the subject ($10, $20, $50), and the price of giving (matching contributions at rates 0, .25, .5, and 1.00). We collect information on risk perceptions of natural disasters, sympathy and distress in response to bad situations, perceptions of the victims of the Katrina disaster, and disaster experience.

We find that while the probability of giving is not related to the size of the endowment, the presence of a match positively and significantly affects giving. The size of the match further increases the probability of giving. The effect of priming information on the probability of giving is negative overall; interactions show that this effect is primarily in the UTD sample. Giving is also slightly lower overall in the eight-month sample. This indicates that "Katrina overload" may have come into play, particularly in Texas, which is closer to the location of the disaster. People care, but demand that continues for too long—even as little as eight months—can cause burnout. This effect seems to diminish with time, as victims return to their communities or are assimilated and as the public appeal for support diminishes. Additional results show that if a subject thinks FEMA did a good job, they are less likely to donate; this indicates that good government spending can crowd out private giving. However, good performance by the charities is associated with a higher probability of giving.

The amount of money received by the charity, including any matching amounts, increases with the endowment (though at a decreasing rate) and match level. The percent of the endowment that subjects pass to the charity (not including any match) declines slightly with the endowment, but increases with the match level. This interesting result shows that matching does not crowd out subjects' giving, but rather crowds in additional giving. As with the probability of giving, the prime has a slightly negative impact on giving overall, in contrast to our expectations. The pattern of responses indicates that this is primarily due to the very strong negative effect of the prime at UTD, especially for the earlier eight-month sessions.

Interestingly, however, the PRIME increases the impact of the match on giving, making subjects more responsive to the matching level. This partially offsets the negative effect of the prime on giving. Comparing the 8-month and 15-month periods, it appears that "Katrina overload" significantly affected the donation decisions of the Texas participants during the earlier time frame. This burnout effect diminishes at the later sample date.

Turning to the survey items, we see that women give more than men and that older participants give more, results that are consistent with stereotypes. These results remain after adjusting for experience and perceptions. Direct experience with natural disaster (own or family) makes the impact of the disaster more salient, resulting in an increase in giving. This experience may reduce the social distance between the donor and victim or may make the donor more aware of the cost of a disaster, and so more willing to help. Psychological measures of empathy and distress are related to giving: More empathetic subjects give more, and those who react to a disaster with distress give slightly less. Perceptions of the victims also affect giving: If victims are perceived as needy, subjects donate more.

Overall the effect of the disaster is a spike in short-run giving. But even as soon as eight months after a disaster, burnout appears to be a factor, negatively impacting giving from those closest to the disaster. A natural disaster might not affect permanent giving: In the long run, giving is likely to return to pre-disaster levels.

This study allows us to evaluate, to a limited extent, the effect of psychological propensities and perceptions on giving. These factors have substantial effects on giving, effects that are as large in magnitude as the effects of subsidies on giving. Understanding the effects of a disaster like Hurricane Katrina on giving can be enhanced by a careful consideration of these factors.

Appendix A: Charity Information in Each Treatment

CONTROL

For this study, each of you will be paired with three different charities, each of which is described below.

	Salvation Army (Dallas Metroplex) Doctors and nurses volunteer to provide urgent medical care in some 70 countries to civilian victims of war and disaster regardless of race, religion, or politics.
	Oxfam America Invests privately raised funds and technical expertise in local organizations around the world that hold promise in their efforts to help poor move out of poverty; committed to long-term relationships in search of lasting solutions to hunger, poverty, and social inequities.
	American Red Cross (Dallas Area Chapter) Offers blood donation information and services, disaster relief, many helpful educational classes, as well as HIV/AIDS support groups.

PRIME

For this study, each of you will be paired with three different charities, each of which is described below.

	Salvation Army (Dallas Metroplex) Doctors and nurses volunteer to provide urgent medical care in some 70 countries to civilian victims of war and disaster regardless of race, religion, or politics. In the aftermath of Katrina, the Salvation Army served meals in the affected areas and gave shelter to tens of thousands of displaced persons in seven states.
	Oxfam America Invests privately raised funds and technical expertise in local organizations around the world that hold promise in their efforts to help poor move out of poverty; committed to long-term relationships in search of lasting solutions to hunger, poverty, and social inequities. In the first two months following Katrina, Oxfam funded its local partners ($500,000) to help with the recovery. It is currently working with local organizations on long-term recovery.
	American Red Cross (Dallas Area Chapter) Offers blood donation information and services, disaster relief, many helpful educational classes, as well as HIV/AIDS support groups. Overall, the ARC raised over $2 billion and fielded 230,000 volunteers in Katrina-related efforts. Over $11 million was raised in Dallas.

Each of these charities is involved to some extent with relief efforts related to Hurricane Katrina. Here are some facts about the Hurricane and its aftermath:

Did you know?

Hurricane Katrina made landfall 3 times between August 28, 2005, and August 29, 2005. Category 5 at its peak, Hurricane Katrina hit the Gulf Coast along the Louisiana/Mississippi border as a Category 4 Hurricane. There were wind speeds of over 140 miles per hour, hurricane force winds extending 190 miles from the center, and a storm surge of up to 30 feet. After Hurricane Katrina passed, the levees in New Orleans failed, leaving parts of the city under up to 20 feet of water.

- In Louisiana, damage estimates are about $40 billion just in insured losses. Almost 650,000 Louisianans and 110,000 Mississippians were displaced by Hurricane Katrina.
- Over 83,000 college students were displaced from Louisiana, and as of February 2006, only 16,480 have re-enrolled within Louisiana.
- As of December, over 1400 people were killed and 3700 people were missing.
- On the federal level, over $88 billion in aid has already been allocated for relief, recovery, and rebuilding, and another $20 billion have been requested.
- The levee repairs alone are expected to cost $10 billion, with another $1.46 billion needed for improvements.
- As of April 2006, FEMA had over 1.7 million registrations for aid, and had disbursed $5,582,306,402 in aid. The FEMA cost, just for those affected in Louisiana, was $8244 per person.
- As of April, there were 637,487 individuals filing Katrina-related aid applications, and 52,106 of these were in the DFW-Metroplex. There are evacuees located in all 50 states, plus Puerto Rico, the Virgin Islands, and other locations.
- As of April, the Parishes of New Orleans have regained only 20%–60% of their populations. Many neighborhoods remain empty.

Appendix B: Additional Tables

Table B1. Responses to Survey Questions: (*n* [% of total])

Survey Question	UTD	SCSU	*p*-Value
1. Immediate family adversely affected by a natural disaster			
Flood	5 (4.1)	7 (4.9)	0.12[a]
Hurricane	9 (7.4)	7 (4.9)	
Tornado	2 (1.6)	10 (7.0)	
Other	2 (1.6)	7 (4.9)	
None	104 (85.2)	112 (78.3)	
2. Know someone adversely affected by a natural disaster			
Flood	15 (12.3)	13 (12.3)	0.00[a]
Hurricane	33 (27.0)	13 (12.3)	
Tornado	7 (5.7)	31 (21.7)	
Other	4 (3.3)	9 (6.3)	
None	63 (51.6)	77 (53.8)	
3. Hurricane Katrina caused so much damage to New Orleans and the Gulf Coast that it will never be the same.			
A. Strongly disagree	13 (10.8)	5 (3.6)	0.77[a]
B.	30 (25.0)	17 (12.3)	
C.	29 (24.2)	41 (29.7)	
D.	33 (27.5)	50 (36.2)	
E. Strongly agree	15 (12.5)	25 (18.1)	
4. People who used to live in New Orleans are scattered all over the country now.			
A. Strongly disagree	2 (1.7)	0 (0.0)	0.18[a]
B.	24 (19.8)	18 (13.0)	
C.	42 (34.7)	46 (33.3)	
D.	39 (32.2)	53 (38.4)	
E. Strongly agree	14 (11.6)	21 (15.2)	
5. People who were hurt or killed by Hurricane Katrina deserved what they got.			
A. Strongly disagree	52 (65.0)	109 (79.0)	0.18[a]
B.	20 (25.0)	21 (15.2)	
C.	6 (7.5)	5 (3.6)	
D.	1 (1.3)	3 (2.2)	
E. Strongly agree	1 (1.3)	0 (0.0)	
6. New Orleans should be rebuilt no matter what the cost.			
A. Strongly disagree	28 (23.0)	7 (5.1)	0.00[a]
B.	35 (28.7)	31 (22.5)	
C.	27 (22.1)	36 (26.1)	
D.	19 (15.6)	39 (28.3)	
E. Strongly agree	13 (10.7)	25 (18.1)	
7. Government agencies such as FEMA did a good job of helping the hurricane victims.			
A. Strongly disagree	25 (21.9)	25 (18.1)	1.00[a]
B.	48 (42.1)	34 (24.6)	
C.	31 (27.2)	56 (40.6)	
D.	9 (7.9)	19 (13.8)	
E. Strongly agree	1 (0.9)	4 (2.9)	

Table B1. Continued

Survey Question	UTD	SCSU	*p*-Value
8. The American Red Cross did a good job of helping the hurricane victims.			
A. Strongly disagree	4 (3.3)	1 (0.7)	0.66[a]
B.	24	10	
	54	59	
C.	(19.7)	(7.3)	
	(44.3)	(43.1)	
D.	30 (24.6)	52 (38.0)	
E. Strongly agree	10 (8.2)	15 (11.0)	
9. Oxfam International did a good job of helping the hurricane victims.			
A. Strongly disagree	15 (12.3)	13 (12.3)	0.12[a]
B.	33 (27.0)	13 (12.3)	
C.	7 (5.7)	31 (21.7)	
D.	4 (3.3)	9 (6.3)	
E. Strongly agree	63 (51.6)	77 (53.8)	
10. The Salvation Army did a good job of helping the hurricane victims.			
A. Strongly disagree	15 (12.3)	13 (12.3)	0.10[a]
B.	33 (27.0)	13 (12.3)	
C.	7 (5.7)	31 (21.7)	
D.	4 (3.3)	9 (6.3)	
E. Strongly agree	63 (51.6)	77 (53.8)	
11. The typical victim of Hurricane Katrina deserves assistance.			
A. Strongly disagree	15 (12.3)	13 (12.3)	0.69[a]
B.	33 (27.0)	13 (12.3)	
C.	7 (5.7)	31 (21.7)	
D.	4 (3.3)	9 (6.3)	
E. Strongly agree	63 (51.6)	77 (53.8)	
12. Prior to the hurricane, the typical victim of Hurricane Katrina had income that was:			
Much below average	13 (23.21)	15 (25.42)	0.45[a]
Somewhat below average	25 (44.64)	30 (50.85)	
About average	16 (28.57)	14 (23.73)	
Somewhat above average	2 (3.57)	0 (0.00)	
Much above average	0 (0.00)	0 (0.00)	
13. The typical victim of Hurricane Katrina had a level of education that was:			
High school dropout	21 (17.36)	19 (14.62)	0.70[a]
High school graduate	74 (61.16)	75 (57.69)	
Some college	24 (19.83)	33 (25.38)	
College graduate	2 (1.65)	3 (2.31)	
Post-graduate degree	0 (0.00)	0 (0.00)	
14. The typical victim of Hurricane Katrina is:			
African-American	81 (67.50)	85 (62.96)	0.32[b]
White	0 (0.00)	3 (2.22)	
Other	2 (1.67)	1 (0.74)	
Don't know	37 (30.83)	46 (34.07)	

[a] Chi-square contingency table test (d.f. = 4).
[b] Chi-square contingency table test (d.f. = 3).

Table B2. Average Dollar Amount Received by Each Charity, by Treatment and Location

			UTD				SCSU			
			Rate				Rate			
PRIME	Charity	Endowment	0%	25%	50%	100%	0%	25%	50%	100%
		$10	3.59	5.06	5.84	9.30	4.05	5.57	7.46	11.01
		$20	7.04	9.66	11.64	18.43	8.25	10.99	14.57	22.90
	ARC	$50	16.55	21.39	27.57	42.09	18.29	26.93	35.94	53.53
		$10	4.09	5.29	6.42	9.16	3.95	5.49	7.25	11.12
		$20	7.34	10.37	12.31	17.54	7.45	11.46	14.82	21.81
	SA	$50	16.08	22.34	28.31	42.59	17.53	27.47	35.77	52.71
		$10	3.28	4.85	5.90	8.28	3.95	5.72	7.19	10.88
		$20	6.66	9.45	11.41	17.16	7.53	10.62	14.30	20.77
	Oxfam	$50	16.06	22.51	26.85	39.78	20.47	27.69	35.82	52.49
		$10	4.33	6.08	7.22	9.51	4.51	5.48	7.20	10.83
		$20	8.10	11.83	14.17	19.78	8.21	10.19	13.70	20.37
NO PRIME	ARC	$50	19.50	26.99	33.09	46.51	17.86	24.94	31.95	48.63
		$10	4.79	6.36	7.36	9.77	4.51	5.48	7.20	10.83
		$20	8.73	11.97	14.35	18.79	8.21	10.19	13.70	20.37
	SA	$50	21.29	25.92	33.11	41.87	17.86	24.94	31.95	48.63
		$10	4.31	5.64	6.70	9.24	3.94	5.07	6.65	9.77
		$20	7.98	11.60	13.77	17.76	7.40	9.48	12.93	19.51
	Oxfam	$50	19.75	25.33	32.95	43.59	18.06	23.37	30.69	46.03

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