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BRIEF REPORT

Gratitude and prosocial behaviour: An experimental test of gratitude

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McCullough, Kilpatrick, Emmons, and Larson (2001) posited that gratitude prompts individuals to behave prosocially. However, research supporting the prosocial effect of gratitude has relied on scenario and self-report methodology. To address limitations of previous research, this experiment utilised a laboratory induction of gratitude, a method that is potentially more covert than scenarios and that elicits actual grateful emotion. Prosocial responses to gratitude—operationalised as the distribution of resources to another—were paired with a self-report measure of gratitude to test the prosocial effect of gratitude. To investigate positive mood as an alternative explanation, this experiment compared responses of individuals receiving a favour to responses of individuals receiving a positive outcome by chance. A total of 40 participants were randomly assigned to either a Favour or Chance condition. Participants receiving a favour helped more and reported more gratitude compared to participants in the Chance condition.

Gratitude is a significant emotion in modern day society. Several world religions teach about the importance of gratitude (Emmons & Crumpler, 2000), and many people claim that expressing gratitude brings them happiness (Gallup, 1998). Yet there has been a paucity of psychological work on gratitude (Emmons & Shelton, 2002; McCullough et al., 2001). Much research on gratitude uses scenario and self-report methods, which introduce potential limitations of social

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desirability and low psychological realism. The current experiment addresses these limitations by pairing a laboratory induction of gratitude with behavioural and self-report measures of gratitude.

Prosocial nature of gratitude

Psychologists typically define gratitude as a positive emotion. For example, Emmons and Crumpler (2000) described gratitude as ‘‘an emotional response to a gift’’ (p. 56), adding that gratitude is an interpersonal emotion that is felt toward other people or entities, and not toward oneself. Research has demonstrated gratitude’s positive valence (e.g., Baron, 1984; Ellsworth & Smith, 1988; Emmons & McCullough, 2003; van Overwalle, Mervielde, & De Schuyter, 1995) and social nature (Ellsworth & Smith, 1988; van Overwalle et al., 1995; Weiner, Russell, & Lerman, 1978; Weiner, Russell, & Lerman, 1979; Zaleski, 1988). Taking the previous literature into account, I define gratitude as *a positive emotional reaction to the receipt of a benefit that is perceived to have resulted from the good intentions of another*.

Naturally, gratitude is not the only possible reaction to the receipt of a benefit. Individuals may instead react negatively to favors with feelings of indebtedness (Gray, Emmons, & Morrison, 2001; Tsang, 2005; Watkins, Scheer, Ovnicek, & Kolts, 2005). Both the emotions of gratitude and indebtedness may serve an informational function (McCullough & Tsang, 2004), alerting individuals as to the value of receiving a benefit from a particular benefactor. Likewise, the receipt of a benefit from another may trigger the norm of reciprocity, which states that individuals should help, as well as refrain from harming, people who have helped them (Gouldner, 1960). Gratitude and indebtedness would inform the individual as to whether he or she valued being subject to this norm in a given situation, and may affect compliance to the norm of reciprocity. The experience of gratitude—a positively valenced emotion—would indicate that the individual felt positively about the benefit and the benefactor.

It then follows that one possible consequence of gratitude is prosocial behavior toward one’s benefactor (McCullough et al., 2001; McCullough & Tsang, 2004). The small amount of research in this area provides indirect support for this hypothesis (McCullough et al., 2001). Two studies support the idea that people who have been made grateful by a benefit are more likely to behave prosocially toward the benefactor or other people in ensuing interactions (Graham, 1988; Peterson & Stewart, 1996), whereas one additional study supports the idea that gratitude inhibits people from engaging in destructive interpersonal behaviour (Baron, 1984). Like much other gratitude research, these studies utilised self-report measures of prosocial behaviour or behavioural intentions. More research measuring actual prosocial behaviours and directly assessing gratitude are needed before psychologists can be confident in the prosocial nature of gratitude.

Utility of a laboratory induction of gratitude

Because most of the existing research on gratitude has relied on the use of scenarios, they contain a number of potential limitations. First, gratitude scenario studies may have potentially low psychological realism (Hegtvedt, 1990), and participant's self-report responses in scenario studies tend to be low cost (Hegtvedt, 1990). Second, participants who read gratitude scenarios may not necessarily experience grateful emotions (e.g., Graham, 1988; Weiner et al., 1978). Third, scenario research may often be transparent, leaving gratitude studies open to social desirability confounds. In contrast, a laboratory induction of gratitude could be constructed to induce actual grateful emotion, have higher psychological realism and higher response costs, and be more covert than scenario studies of gratitude.

Research on reciprocation provides an alternative for the study of gratitude (e.g., Goranson & Berkowitz, 1966; Leventhal, Weiss, & Long, 1969; Pruitt, 1968; Regan, 1971). In these studies, participants typically receive a small gift or favour from the experimenter or a confederate. Conceivably, the receipt of a favour induces gratitude in participants, and this research would be more involving for participants than reading gratitude scenarios. Participants' reciprocity responses could function as a behavioural measure of gratitude's prosocial effect. However, because past reciprocity experiments did not aim to explicitly study the emotion of gratitude, they did not include actual measures of gratitude. Previous reciprocity studies have an additional limitation in their relevance to gratitude: the favours used in research have been relatively small, such as a soda (Regan, 1971) or candy (Baron, 1984). Although these favours have been sufficient to induce the behaviour of reciprocity, they may not have been large enough to induce the emotion of gratitude. Larger favours might also increase participants' involvement and thus, psychological realism.

Gratitude, or positive mood?

Previous research has also neglected to directly compare the prosocial effect of gratitude with the effect of positive mood on helping. Positive mood has been shown to increase helping in a number of studies (Carlson, Charlin, & Miller, 1988; Isen, 1999). Therefore, the effects of positive mood may serve as an alternative explanation for any prosocial effects of gratitude. According to this explanation, individuals would act prosocially because gratitude puts them in a positive mood, but not because of gratitude in and of itself. In contrast, I predict that gratitude induces its own prosocial response, independent of positive affect. Whereas positive affect may increase prosocial behaviour through self-focus and mood maintenance (Berkowitz, 1987; Salovey, Mayer, & Rosenhan, 1991), gratitude has been shown to be an other-oriented emotion (Weiner et al., 1978, 1979), and may therefore increase prosocial behaviour by focusing attention on

the need and deservingness of the benefactor. No research to date has been conducted to isolate a prosocial effect of gratitude that may be independent from that of good mood.

The present study

To address these issues, the current experiment creates a laboratory induction of gratitude using a larger favour, and includes a control group to compare the effects of gratitude with those of positive mood. Both behavioural and self-report measures of gratitude are included. If gratitude motivates individuals to act prosocially toward their benefactor, then participants receiving a favour should experience more gratitude and reciprocate more resources to their partners than participants who receive a positive outcome by chance.

METHOD

Participants

Participants were 40 undergraduate psychology students at Baylor University. Because the experimenters for this study were female, only female participants were recruited in order to minimise cross-gender self-presentation concerns (Jones & Pittman, 1982). Two additional participants were excluded from data analyses, one because of experimenter error in procedures, and one because the participant suspected the cover story of the experiment.

Procedure

Participants were run singly in an enclosed laboratory cubicle. They were told that they and another participant would engage in four rounds of a resource distribution task. Participants were informed that they would not interact with the other participant, but would receive the chance to communicate by written note during certain resource distribution rounds. In reality, only three distribution rounds were carried out, and the “other participant” was fictitious. Participants were informed that during each round \$10 would be distributed between the two participants. In some rounds, they or the other participant would be assigned to distribute the resources, whereas in other rounds resources would be distributed by chance. It was emphasised to participants that they and their distribution partner were not in competition with each other, but would each have opportunities to receive resources. All distribution decisions were made using paper-and-pencil forms, which the experimenter ostensibly shuttled between cubicles. Resources for each round took the form of 10 green paper slips representing \$1 each, which the participants were told would be exchanged for real money at the end of the experiment.

For Round 1, all participants received \$3 by chance, and were told that their partner was given \$7. Participants were then randomly assigned into one of two conditions. Participants in the Favour condition were told that in Round 2, their partner had given them \$9, while keeping only \$1 for herself. A handwritten note, seemingly from their partner, accompanied the distribution outcome and read, "I saw that you didn't get a lot in the last round—that must've been a bummer". In contrast, participants in the Chance control group were told that they received \$9 by chance, and that their partner had received \$1. There was no note from the other participant in this condition.

In Round 3, participants in both conditions received the opportunity to distribute \$10 in resources. After making their distribution decision, participants were given a questionnaire that asked them the reasons behind their decision. Items asked participants to rate the extent to which they were motivated by the following concerns during their distribution decision: "to get money", "be fair", "help the other participant", "express appreciation", "establish justice", "fulfil an obligation", and "act morally". Participants rated these motivations on a 1–7 Likert-type scale (1 = Not at all, 7 = Totally). The item "express appreciation" constituted the measure of gratitude. When the questionnaire was complete, the experiment was terminated. During the post-experimental interview, participants were carefully probed for suspicion, and the experimenter fully explained the experimental procedure to participants, including the reasons for deception, using guidelines from Aronson, Ellsworth, Carlsmith, and Gonzales (1990). No participants expressed any distress about the experiment, and all seemed to understand the reasons for deception. All participants were given \$22 as compensation for their assistance (i.e., the largest amount participants could have collected at the end of Round 3).

RESULTS

Manipulation checks

Manipulation checks indicated that all participants were aware of whether their positive outcome in Round 2 was due to the other participant, or to chance. To investigate the psychological realism of this laboratory situation, after each distribution round the experimenter gave participants a questionnaire that asked them to rate the emotions they were currently experiencing on a 7-point scale, including the adjectives "pleased" and "annoyed". Paired *t*-tests revealed that participants felt significantly more pleased after Round 2 ($M = 6.48$, $SD = .64$), when they received \$9, than after Round 1 ($M = 4.05$, $SD = 1.36$), when they received \$3, $t(39) = -9.14$, $p < .001$. Similarly, participants felt significantly less annoyed after Round 2 ($M = 1.23$, $SD = .54$) than they did after Round 1 ($M = 2.28$, $SD = 1.64$), $t(38) = 4.05$, $p < .001$. These results support the high psychological realism of the current paradigm.

Resource distribution

Differences in the amount of resources given between conditions in Round 3 were tested using the Mann-Whitney U -test statistic because the assumptions of the t -test were not met (see Table 1 for descriptive statistics and tests of normality). Participants in the Chance condition gave an average of \$5.84 ($SD = 1.07$) to their partner, whereas participants in the Favour condition gave an average of \$7.38 ($SD = 1.36$), $U = 79.50$, $Z = -3.48$, $p < .001$ (significance tests are two-tailed unless otherwise indicated). Means, standard deviations, and ranks for the Mann-Whitney U statistic for the resource distribution decisions in each condition appear in Table 2.

Motivations underlying the resource distribution decisions

Table 2 presents the mean ratings for self-reported motivations in the two conditions. Differences in motivation ratings between conditions were again tested using the Mann-Whitney U -test statistic because the assumptions of the t -test were not met. Participants in the Chance condition rated the motivation “to get money” significantly higher than those participants in the Favour condition, $U = 88.50$, $Z = -3.07$, $p < .01$. Participants in the Favour condition rated the motivation “to express appreciation” significantly higher than those participants in the Chance condition, $U = 42.00$, $Z = -4.37$, $p < .01$. Additionally, participants in the Chance condition endorsed the motivation to “act morally” as marginally more important than did participants in the Favour condition, $U = 140.00$, $Z = -1.69$, $p = .09$. No other means were significantly different between conditions.

TABLE 1
Descriptive statistics and tests of normality for key variables

<i>Variable</i>	<i>Possible range</i>	<i>Mean</i>	<i>SD</i>	<i>Skew</i>	<i>Kurtosis</i>	<i>Shapiro-Wilk's W</i>
Resources given to other	\$1–10	\$6.65	2.08	0.49	0.37	0.86**
Reasons for distribution						
Get money	1–7	3.38	1.60	–0.26	–1.22	0.89**
Be fair	1–7	6.60	0.67	–1.45	0.86	0.62**
Help the other	1–7	5.70	1.14	–0.58	–0.23	0.88**
Express appreciation	1–7	5.00	2.08	–0.82	–0.60	0.84**
Establish justice	1–7	4.78	2.13	–0.58	–1.02	0.86**
Fulfil an obligation	1–7	4.15	2.01	–0.40	–1.03	0.89**
Act morally	1–7	5.88	1.18	–1.32	2.07	0.83**

$N = 40$; ** $p < 01$.

TABLE 2
Means (and standard deviations), and Mann-Whitney U-test statistics for key variables

Variable	Condition										U	Z
	Chance					Favour						
	Mean	(SD)	n	Mean rank		Mean	(SD)	n	Mean rank			
Resources given to other	\$5.84	(1.07)	19	14.18		\$7.38	1.36	21	26.21		79.50	-3.48**
Reasons for distribution												
Get money	4.16	(1.46)	19	26.34		2.67	1.39	21	15.21		88.50	-3.07**
Be fair	6.68	(0.67)	19	22.08		6.52	.68	21	19.07		169.50	0.31
Help the other	5.58	(1.31)	19	19.74		5.81	.98	21	21.19		185.00	-0.41
Express appreciation	3.47	(2.01)	19	12.21		6.38	.74	21	28.00		42.00	-4.37**
Establish justice	4.63	(2.09)	19	19.32		4.90	2.21	21	21.57		177.00	-0.53
Fulfill an obligation	3.58	(2.32)	19	17.89		4.67	1.56	21	22.86		150.00	-1.37
Act morally	6.16	(1.07)	19	23.63		5.62	1.24	21	17.67		140.00	-1.69*

* $p < .10$; ** $p < .01$.

TABLE 3
Relationships between resources given to the other participant and self-reported reasons for distribution

	<i>Reason for distribution</i>						
	<i>Get money</i>	<i>Be fair</i>	<i>Help other</i>	<i>Appreciation</i>	<i>Justice</i>	<i>Obligation</i>	<i>Act morally</i>
Money given across conditions	-.47**	.20	.34*	.55**	.25	.21	.11

Note: Numbers presented in table represent Spearman's rho (r_s). $N = 40$. * $p < .05$; ** $p < .01$.

These motivations were also differentially associated with the amount of money given to the other person (see Table 3). Spearman's rho (r_s) was calculated to test the relationships between the different motivations and the amount of money given because the assumptions of Pearson's r were not met. Across both conditions, the amount of money given to the other person was negatively associated with the motivation to get money ($r_s = -.47$, $p < .01$), and positively associated with the motivation to help the other participant ($r_s = .34$, $p < .05$) and express appreciation ($r_s = .55$, $p < .01$). Not surprisingly, participants who gave more money to their partners tended to be less motivated to acquire resources for themselves, and more motivated to act prosocially toward the other participant.

DISCUSSION

The data support the prosocial nature of gratitude. Participants reported being more motivated by gratitude when they had received a favour, compared to individuals who had received the same positive outcome by chance. This emotion seemed to translate itself into different patterns of behaviour toward their partner: Participants who believed they had received a favour from the other participant gave her more money than did participants who believed they had received the outcome by chance. These results are consistent with the prediction that grateful feelings motivate the individual to act prosocially toward his or her original benefactor.

These results also suggest that gratitude may have unique effects independent of positive mood. If gratitude's prosocial effect was due solely to the effects of positive mood, participants who also received a positive outcome by chance should have given similar amounts of resources to the other person as did participants who received the positive outcome as a favour.

Limitations and advantages of the current laboratory paradigm

One limitation of the present study is that the data did not clearly differentiate between gratitude and other constructs such as indebtedness and the norm of reciprocity. An additional limitation lies in the fact that self-reports of distribution motivations were assessed after participants had already made their distribution decisions, leaving open the possibility that participants were merely providing a post hoc explanation of their behaviour.

The current experiment also reveals the strengths of this laboratory paradigm for the study of gratitude. Compared to scenario research on gratitude, the current paradigm is more covert, has higher psychological realism and induces actual grateful emotion in participants. Additionally, the grateful responses in this laboratory paradigm are more costly to participants compared with self-report assessments of gratitude, reducing social desirability confounds. Similar to scenario research, however, the current methodology presents participants with a standardised gratitude induction, which is an advantage that these methods would have over research that asks participants to recall personal gratitude-inducing events (e.g., McCullough, Tsang, & Emmons, 2004). Therefore, the methodology used in the current experiment has particular advantages for the study of the prosocial effect of gratitude, and adds in important ways to results of past research (Graham, 1988; Peterson & Stewart, 1996).

Conclusions

Aside from a few notable classics (e.g., Tesser, Gatewood, & Driver, 1968), research on gratitude is sparse and still in its early stages (Emmons & Shelton, 2002). Recently, there has been a renewed interest in the empirical study of gratitude (Emmons, 2004), especially the consequences of gratitude. For example, research has found that gratitude has important positive consequences for the individual: The experience of gratitude can increase both psychological (Watkins, 2004) and physical well-being (Emmons & McCullough, 2003). Gratitude may also affect the individual's causal attributions (Jackson, Lewandowski, Fleury, & Chin, 2001). The present study adds to the existing research by providing experimental support for some positive interpersonal consequences of gratitude. Although gratitude might have important personal benefits for the individual, gratitude is, at its foundation, a profoundly prosocial emotion.

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