When fair is not equal: Compassion and politeness predict allocations of wealth under different norms of equity and need

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Abstract

Growing evidence has highlighted the importance of social norms in promoting prosocial behaviors in economic games. Specifically, individual differences in norm adherence—captured by the politeness aspect of Big Five agreeableness—has been found to predict fair allocations of wealth to one's partner in the dictator game. Yet most studies have used neutrally-framed paradigms, where players may default to norms of equality in the absence of contextual cues. In this study (N = 707), we examined prosocial personality traits and dictator allocations under salient real-world norms of equity and need. Extending on previous research, we found that—in addition to politeness—the compassion aspect of agreeableness predicted greater allocations of wealth when they were embedded in real-world norms. These results represent an important step in understanding the real-world implications of laboratory-based research, demonstrating the importance of both normative context and prosocial traits.

Keywords: dictator game; social norms; politeness; compassion; agreeableness

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A major contribution from the research on experimental economics is the finding that humans are capable of widespread prosocial behavior despite traditional economic assumptions of self-interest. This is largely thought to be established through the existence of social norms, or standards of behavior arising from jointly-shared beliefs about how one ought to behave in a given situation (Elster, 1989; Fehr & Fischbacher, 2004a; Voss, 2001). Such norms give rise to a range of cooperative and fair behaviors, and social sanctions are imposed when they are violated (Fehr & Fischbacher, 2004b; Fehr, Fischbacher, & Gächter, 2002). Adding to this literature, recent evidence from personality psychology has shown that individual differences in politeness, reflecting adherence to social norms—rather than compassion, reflecting emotional concern for others—is a major predictor of fair allocations of wealth in economic games (Zhao, Ferguson, & Smillie, 2016).

In this paper, we further investigate these findings by moving beyond neutrally-framed games to embedding these game decisions within normative contexts. Using two real-world norms of distributive justice—equity and need—we examine how the related prosocial personality traits of compassion and politeness predict allocations of wealth when equal divisions are no longer fair. The results demonstrate both situational and personality influences on prosociality and have important implications for how economic decision-making paradigms are applied to the real world.

Prosocial Personality Traits and Their Differential Roles in Standard Economic Games

Personality psychology provides a useful framework for understanding the heterogeneity of behavior in economic games (Ferguson, Heckman, & Corr, 2011; Zhao & Smillie, 2015). Agreeableness is a broad personality trait characterized by the tendency to be kind-hearted, altruistic, and sympathetic (Graziano & Eisenberg, 1997), which is associated

with helping behaviors in experimental studies (Graziano, Habashi, Sheese, & Tobin, 2007) and real-world prosocial activities (e.g., Carlo, Okun, Knight, & de Guzman, 2005). In keeping with this, agreeableness also promotes prosociality in a variety of economic decision-making paradigms (Zhao & Smillie, 2015). One example is the dictator game, a widely-used measure of social preferences, in which one player divides a fixed amount of money with a partner who must accept this distribution unconditionally (Forsythe, Horowitz, Savin, & Sefton, 1994; Kahneman, Knetsch, & Thaler, 1986). Contrary to traditional economic assumptions of self-interest, over a hundred studies of the dictator game have shown that a substantial portion of players allocates a positive amount to their partner, with an average share of 28% (Engel, 2011). These findings have been interpreted as evidence for prosociality, preferences for fairness, and pure altruism (Camerer & Fehr, 2004; Fehr & Schmidt, 1999).

Like other broad domains of the Big Five model, agreeableness subsumes more finely-grained personality traits at the intermediate (or *aspect*) and lower (or *facet*) level of the trait hierarchy (DeYoung, Quilty, & Peterson, 2007), which capture different tendencies and motivations for prosociality. While there is little consensus regarding the number and nature of facets, which are intuitively and somewhat arbitrarily derived, recent developments in personality research provide empirical support for dual aspects immediately below the level of each Big Five trait (DeYoung, 2015; cf. Soto & John, 2016). Specifically, Big Five agreeableness can be divided into two aspects: compassion, the tendency to be emotionally concerned about others, and politeness, the tendency to respect the needs and desires of others, which is closely linked to norm compliance (DeYoung, 2015; DeYoung et al., 2007). These two aspects are each linked to distinct political ideologies and moral values. While the former is associated with liberalism and moral foundations of harm/care and fairness/reciprocity, the latter is associated with political conservatism and moral foundations

of authority/respect (Hirsh, DeYoung, Xu, & Peterson, 2010; Osborne, Wootton, & Sibley, 2013). The two aspects also map closely onto two established motivations for cooperation; one driven by fairness and based around moral principles of helping, the other driven by compassion and empathic concern (e.g., Singer & Steinbeis, 2009; Wilhelm & Bekkers, 2010).

Recent research has investigated the divergent validity between the two aspects of agreeableness within the standard dictator game. Across four studies using both incentivized and hypothetical games, Zhao et al. (2016) showed that only politeness was uniquely associated with greater allocations. At first, this may seem surprising and counterintuitive given the evidence linking compassion and empathic concern to lab and real-world prosocial behaviors (Batson, 1991; Bekkers, 2006; Eisenberg & Miller, 1987). On the other hand, the findings suggest that the standard dictator game measures adherence to fairness norms rather than altruism per se. This supports a growing literature proposing that prosocial behavior in the dictator game—and economic games more generally—reflect norm adherence and etiquette (Bolton, Katok, & Zwick, 1998; Camerer & Thaler, 1995; Ferguson & Flynn, 2013; Guala & Mittone, 2010; Kimbrough & Vostroknutov, 2015).

On the other hand, the standard dictator game, like many other economic decision-making paradigms, is a neutral and artificial task and lacks the many contextual cues that influence real-life distributive preferences. Specifically, Eckel and Grossman (1996) have argued that altruistic processes are context-dependent and are unlikely to be elicited in the neutrally-framed dictator game, in which there is no reason for division of the money nor any basis to judge the deservingness of each player. Without any information that would normally inform a division of resources, players may default to equality norms around the sharing of money—with those who are most polite making the fairest allocations. Indeed, Camerer and Thaler (1995) noted that participants in the dictator game are essentially "handed $10 in

manna from experimental heaven", arguing that "etiquette may require you to share a windfall with a friend, but it certainly does not require you to give up some of your hard-earned year-end bonus to a stranger" (p. 216). More generally, the absence of context in the dictator game has been considered a major limitation of this paradigm, which compromises its ecological validity (Guala & Mittone, 2010; Levitt & List, 2007). In order to draw clearer conclusions, it is important to understand how individuals allocate wealth with respect to distributive justice in the real world.

Equity and Need: Two Real-World Norms of Distributive Justice

Equity and need are two norms of distributive justice that govern many instances of real-world giving (Deutsch, 1975; Konow, 2010). Equity refers to the principle that rewards should be distributed according to contributions, including effort, ability, and productivity (Adams, 1965; Konow, 2003; Scott, Matland, Michelbach, & Bornstein, 2001). Such norms play a central role in the division of income within the workplace, awarding of prizes, and fair-trade initiatives (Cappelen, Moene, Sørensen, & Tungodden, 2013). In contrast, allocations based on need underlie charitable donations and international aid (Konow, 2010) and reflect a phylogenetically old basis of altruism (Jaeggi, Burkart, & van Schaik, 2010). Both are distinct from the equality norm or strict egalitarianism, one of the simplest notions of distributive justice in which wealth is divided evenly across all individuals regardless of disparities in need or input (Konow, 2003).

Studies examining the impact of equity norms on dictator allocations typically involve a production phase before joint earnings are divided, and have revealed qualitatively different behavior to standard dictator paradigms (Cherry, Frykblom, & Shogren, 2002; Feng et al., 2013; Frohlich, Oppenheimer, & Kurki, 2004; Mittone & Ploner, 2012; Ruffle, 1998). For example, when participants earned all the money in the pie by completing a quiz, 70–79%

chose to keep the entire amount in an ensuing dictator game, compared with 15–19% in the baseline treatment (Cherry et al., 2002).

Other studies have examined the impact of need on dictator allocations. Eckel and Grossman (1996) found that dictator allocations tripled when the recipient was a charity compared to an anonymous partner. Similarly, Aguiar, Fernando, and Branas-Garza (2008) found that the majority of participants gave away their entire endowment in dictator games where recipients were citizens of a developing country who would be using the money to buy medicine. Recently, Klimecki, Mayer, Jusyte, Scheeff and Schönenberg (2016) reported that individuals gave over 70% of their endowment in a dictator game following an empathy induction for a person in need (e.g., children in an orphanage).

However, even amid strong norms there is heterogeneity in what is considered fair. In previous studies, some participants chose their allocations based on deservingness or "just deserts" (i.e., equity), while others made an equal split despite asymmetries in production (i.e., equality), or continued to take all the money (i.e., self-interest; Cappelen, Hole, Sørensen, & Tongodden, 2007; Cappelen et al., 2013; Frohlich et al., 2004). Although situational context in the form of equity and need norms are prominent drivers of behavior, considerable inter-individual variation in these games may also reflect personality differences.

The Current Study

The current study aimed to examine how distinct prosocial personality traits of politeness and compassion predict allocations of wealth in dictator games under strong real-world norms. We examined four variants of the dictator game in which we manipulated the normative context according to equity and need, both in favor of and against dictators. This allowed us to examine dictator decisions in situations where asymmetric distributions of wealth were normative and at odds with the equality norm. We were particularly interested in

whether previous findings concerning the unique role of politeness (Zhao et al., 2016) would be replicated for dictator decisions when these were nested within equity and need norms. Furthermore, given that altruistic motivations can be elicited by empathy for those in need (Batson, 2010; Batson, Duncan, Ackerman, Buckley, & Birch, 1981), we hypothesized that individual differences in compassion would be related to dictator allocations when norms are framed around need.

Materials and Methods

Participants

Our target sample size of at least 175 participants per condition was selected to provide 80% power to identify within-condition effect sizes of $r = .21$ (Faul, Erdfelder, Buchner, & Lang, 2009), in line with previous findings for the role of agreeableness in dictator games (Zhao et al., 2016). The final total sample consisted of 707 North American participants (aged 18–84 years, $M_{age} = 30.72$, $SD = 9.83$; 58% female) recruited from the online crowdsourcing service Amazon Mechanical Turk (MTurk; www.MTurk.com). To avoid recruiting workers experienced with well-known economic game paradigms, only workers with fewer than 50 Human Intelligence Tasks completed were selected. Sixteen participants (2.2%) had been excluded from this sample for failing two attention checks, which are described below.

Materials

Personality measure. Participants completed the Big Five Aspect Scales (BFAS; DeYoung et al., 2007), which measures the five broad domains of personality (neuroticism, agreeableness, conscientiousness, extraversion, and openness/intellect) and their aspects. We were specifically interested in the dual aspects of agreeableness: politeness (the tendency to be respectful or considerate of others) and compassion (the tendency to be emotionally concerned about others). Each aspect consists of 10 items with responses recorded on a

Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree), which are together averaged to produce the corresponding trait score. The BFAS is well validated against other measures of the Big Five and has good internal consistency and test–retest reliability (DeYoung et al., 2007).

Dictator games. Participants completed one of four hypothetical versions of a normatively-framed dictator game, in which the context of a dictator allocation was described to elicit a specific norm. Allocations were framed either in terms of the equity or need norm, with half of these in favor of the self and the other half in favor of the partner. In all cases, participants were asked to imagine that their partner was a stranger that they would not knowingly meet.

In the *equity* conditions, a frame described a production phase which involved a task to proof-read a long paper, and for which the amount of time spent on this task was at the discretion of the participant and their partner. In the *Equity–Partner* dictator game (N = 179), participants read that their partner had decided to work on the task for "substantially longer" than themselves. In the *Equity–Self* dictator game (N = 176) participants read that they had decided to work on the task for "substantially longer" than their partner.

In the *need* conditions, a frame described the same proof-reading task, with no information about individual contributions. In the *Need–Partner* dictator game (N = 177), participants read that their partner was poorer and needed the money "substantially more" than themselves. In the *Need–Self* dictator game (N = 175), participants read that they were poorer and needed the money "substantially more" than their partner.

Next, all participants were told that $10 was provided for the completed task and that they had been randomly selected by the experimenter to allocate this $10 between themselves and their partner in $1 increments. After making their allocation, participants completed a questionnaire, in which there were two validity checks describing endorsement of equity

("*My decision was based on who put more work into the task*") and need ("*My decision was based on who needed the money more*") norms. Participants responded to these on Likert-type scales ranging from 1 (strongly disagree) to 5 (strongly agree).

Procedure

Participants completed the entire study on a survey programmed using Qualtrics survey software and administered through the MTurk requester interface. They were randomly assigned to one of the four conditions and subsequently indicated their allocation, before responding to the post-decisional questionnaire. They then completed the BFAS, alongside additional questionnaires not relevant to the aims of the current research. Embedded within these questionnaires were two attention checks (e.g., "Please select *Strongly Agree*").

Re-analysis of Standard Dictator Game Data

For comparison with each of the norm-salient games, we included a similar-sized sample (N = 212; aged 18–57 years, M_{age} = 29.94, SD = 8.47; 59% female) from an existing MTurk dataset of a neutrally-framed standard dictator game, previously published in Zhao et al. (2016). In this task, participants read a description of the standard dictator game (Forsythe et al., 1994; Kahneman et al., 1986) and were asked how they would divide 10 points (corresponding with dollar amounts) with a stranger that they would not knowingly meet. All other data collection procedures were identical to those in the current study.

Results

Manipulation Checks

We first examined participants' responses to the two post-decisional statements measuring endorsement of the equity and need norms, which supported the manipulation of norm salience. Agreement with the equity norm ("*My decision was based on who put more work into the task*") was significantly higher in games where equity was salient than those in

which need was salient (*Ms* = 3.55 vs. 2.33), $t(705) = 13.07$, $p < .001$. Conversely, agreement with the need norm ("*My decision was based on who needed the money more*") was significantly higher in games where need was salient than those in which equity was salient (*M*s = 2.76 vs. 1.94), $t(704) = 8.78$, $p < .001$. Agreement with these norms was not associated with prosocial personality traits overall (all $|r|$s < .08, ps > .05).

Preliminary Statistics

Descriptive statistics and correlations among key variables are presented in Table 1. There were no significant baseline differences in age, gender, and prosocial personality traits across the four conditions. Mean allocations to a partner in the norm-salient dictator games are also presented in Figure 1, shown in comparison to data from the standard dictator game (*M* = 4.32).

A 2 (norm type: equity vs. need) × 2 (norm direction: self vs. partner) between-subjects ANOVA was performed with allocations as the dependent variable. This revealed a main effect for norm direction, $F(1,703) = 184.97$, $p < .001$, $\eta_p^2 = .21$, in which allocations were higher for games where the norm favored the partner than those where the norm favored the self (*M*s = 5.83 vs. 4.19). There was also a main effect for norm type, $F(1,703) = 8.84$, $p = .003$, $\eta_p^2 = .01$, in which allocations were higher for need games than for equity games (*M*s = 5.19 vs. 4.83). There was no interaction between norm type and norm direction, $F(1,703) = 0.35$, $p = .86$, $\eta_p^2 < .001$.

We further compared the norm-salient allocations with those from the standard dictator game. Allocations in the standard dictator game were significantly lower than those where the norm favored the partner (Equity–Partner: $t(389) = -8.25$, $p < .001$, $d = -0.84$, 95% CI [-1.04, -0.63]; Need–Partner; $t(387) = -8.85$, $p < .001$, $d = -0.90$, 95% CI [-1.11, -0.69]), but differed very little from those where the norm favored the self (Equity–Self: $t(386) =$

1.94, p = .05, d = 0.20, 95% CI [0.004, 0.40]; Need–Self: $t(385)$ = -0.26, p = .80, d = -0.03, 95% CI [-0.23, 0.17]).

Table 1

Descriptive Statistics and Bivariate Correlations between Prosocial Traits and Dictator Allocations

	Variable	*N*	Mean (SD)	Correlations		
				1	2	3
1	B5 Agreeableness	919	3.83 (0.49)	.86		
2	B5 Compassion	919	3.87 (0.59)	.88**	.87	
3	B5 Politeness	919	3.79 (0.54)	.85**	.50**	.75
4	Allocation in EP dictator game	179	5.64 (1.41)	.25**	.22**	.20**
5	Allocation in ES dictator game	176	4.02 (1.15)	.18*	.20**	.11
6	Allocation in NP dictator game	177	6.02 (2.09)	.24**	.19*	.23**
7	Allocation in NS dictator game	175	4.36 (1.62)	.20**	.16*	.17*
8	Allocation in standard dictator game	212	4.32 (1.72)	.23**	.15*	.25**

Note. Cronbach's αs are shown in the diagonal. Allocations indicate amount allocated to partner out of 10 points (corresponding to dollar amounts) or $10. Total *N* and means for personality data refer to combined norm-salient and standard dictator game samples. B5 = Big Five Model, measured using the Big Five Aspect Scales (BFAS; DeYoung et al., 2007). EP = *Equity–Partner* (dictator game where the partner has put in more work than oneself), ES = *Equity–Self* (dictator game where one has put in more work than the partner), NP = *Need–Partner* (dictator game where the partner needed the money more than oneself), NS = *Need–Self* (dictator game where one needed the money more than the partner).

*p < .05. **p < .01.

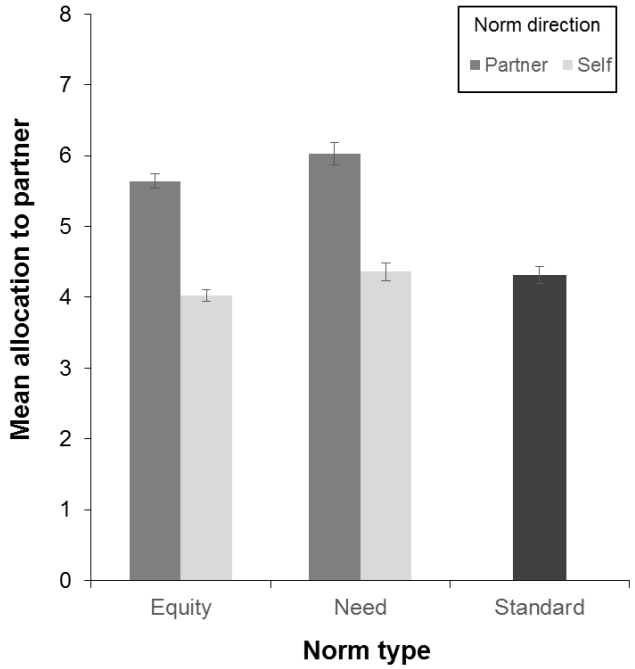

Figure 1. Mean allocations by norm type and norm direction. For comparison, the mean allocation from a neutrally-framed standard dictator game is provided. Allocations indicate amount allocated to partner out of 10 points (corresponding to dollar amounts) or $10. Error bars indicate one standard error.

Relations between Prosocial Personality Traits and Game Allocations

Bivariate correlations between prosocial personality traits and allocations in all four norm-salient games plus the standard dictator game are shown in Table 1 (for corresponding data for all Big Five traits, see Table S1 in the online supplemental material). Age and gender were not significantly associated with allocations of wealth in each of the norm-salient games.

To investigate the unique associations between prosocial personality traits and allocations, we used a structural equation modelling (SEM) framework with latent variables to incorporate any measurement error associated with each factor into the full model. This approach was considered advantageous over multiple regression, which is prone to inflated

false positive rates due to measurement error (Westfall & Yarkoni, 2016). We first specified the measurement model by defining two correlated latent variables—politeness and compassion—which were each indicated by ten items from the Big Five Aspect Scales (DeYoung et al., 2007). As the five-point Likert-type responses for these items are best treated as ordinal (Wirth & Edwards, 2007), confirmatory factor analysis was performed with categorical indicators using robust weighted least squares mean- and variance-adjusted estimation. We then regressed dictator allocations on these two latent variables simultaneously.[1] Figure 2 illustrates the path diagram of the SEM and Table 2 presents the standardized solutions for all norm-salient games combined, as well as for each of the norm-salient games and the neutrally-framed standard dictator game.

We first examined the role of compassion and politeness in *all* norm-salient games, that is, where fair was not equal according to real-world norms. Here, both politeness and compassion emerged as significant unique predictors of allocations after controlling for one another. In contrast, only politeness was a significant unique predictor of allocations in the standard dictator game, consistent with previous findings (Zhao et al., 2016).

We next examined whether the effects of politeness and compassion were replicated for each of the individual norm-salient games. Across the games, zero-order correlations with allocations were significant and similar in magnitude for compassion (*r*s = .16–.22, *p*s = .003 –.03), but less so for politeness (*r*s = .11–.23, *p*s = .002 –.16). The greatest divergence between the two was in the Equity–Self game, where allocations were associated with compassion ($r = .20$, $p = .01$, 95% CI [.05, .34]) but not politeness ($r = .11$, $p = .16$, 95% CI [-.04, .25]); however, we note that the difference in significance between the two may not in itself be significant (Gelman & Stern, 2006). Similarly, the SEM findings showed that compassion alone was a unique predictor in the Equity–Self game, over and above the effect of politeness. In contrast, politeness alone was a unique predictor of allocations in the

Equity–Partner game, over and above the effect of compassion. Neither aspect was a significant unique predictor of allocations in the remaining games where need was salient.

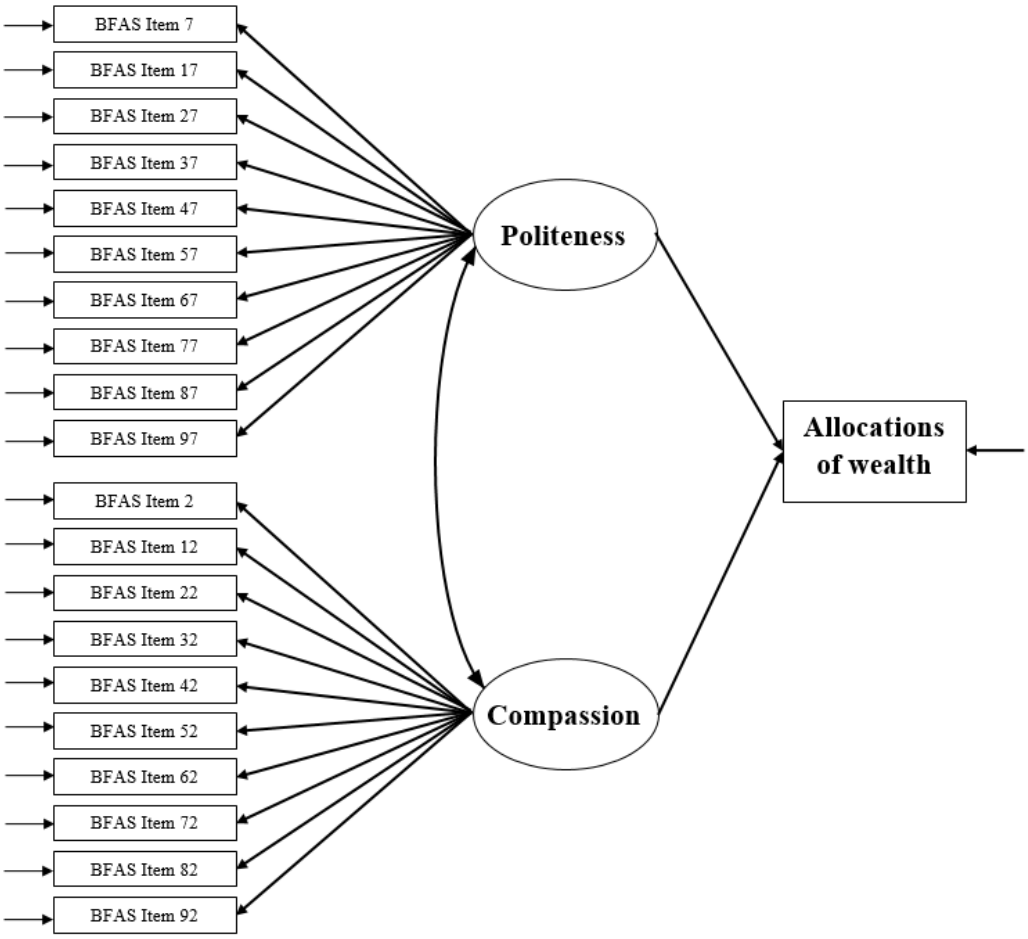

Figure 2. Path diagram of model predicting allocations of wealth and allowing for measurement error of politeness and compassion. Ovals represent latent variables, rectangles represent observed variables. BFAS items refer to the corresponding items from the Big Five Aspect Scales (DeYoung et al., 2007). A full list of these items is provided in the online supplemental material (see Table S2).

Table 2

Structural equation model (standardized solutions) predicting allocations of wealth in norm-salient and standard dictator games

	All norm-salient conditions		Standard dictator		Equity–Partner		Equity–Self		Need–Partner		Need–Self	
	Politeness	Compassion	Politeness	Compassion	Politeness	Compassion	Politeness	Compassion	Politeness	Compassion	Politeness	Compassion
Measurement model												
BFAS 7	0.38 (0.04)		0.37 (0.07)		0.59 (0.06)		0.33 (0.08)		0.32 (0.07)		0.33 (0.07)	
BFAS 17	0.56 (0.03)		0.68 (0.04)		0.62 (0.06)		0.58 (0.06)		0.49 (0.06)		0.54 (0.06)	
BFAS 27	0.46 (0.03)		0.55 (0.05)		0.43 (0.07)		0.55 (0.06)		0.48 (0.05)		0.38 (0.07)	
BFAS 37	0.72 (0.03)		0.74 (0.04)		0.63 (0.07)		0.71 (0.06)		0.77 (0.05)		0.79 (0.05)	
BFAS 47	0.29 (0.04)		0.33 (0.07)		0.17 (0.07)		0.34 (0.06)		0.37 (0.06)		0.26 (0.07)	
BFAS 57	0.32 (0.04)		0.28 (0.07)		0.30 (0.07)		0.40 (0.06)		0.47 (0.05)		0.09 (0.07)	
BFAS 67	0.69 (0.03)		0.73 (0.04)		0.73 (0.05)		0.60 (0.06)		0.75 (0.04)		0.65 (0.06)	
BFAS 77	0.65 (0.03)		0.61 (0.05)		0.68 (0.06)		0.66 (0.05)		0.50 (0.05)		0.76 (0.05)	
BFAS 87	0.55 (0.03)		0.58 (0.05)		0.47 (0.06)		0.42 (0.07)		0.66 (0.05)		0.62 (0.06)	
BFAS 97	0.55 (0.03)		0.67 (0.05)		0.62 (0.05)		0.45 (0.07)		0.50 (0.06)		0.63 (0.06)	
BFAS 2		0.67 (0.02)		0.70 (0.04)		0.63 (0.04)		0.69 (0.04)		0.61 (0.05)		0.77 (0.04)
BFAS 12		0.67 (0.02)		0.75 (0.03)		0.73 (0.04)		0.60 (0.04)		0.66 (0.04)		0.71 (0.04)
BFAS 22		0.69 (0.02)		0.71 (0.04)		0.66 (0.04)		0.79 (0.03)		0.78 (0.03)		0.57 (0.05)
BFAS 32		0.71 (0.02)		0.59 (0.04)		0.74 (0.04)		0.65 (0.04)		0.78 (0.03)		0.73 (0.04)
BFAS 42		0.85 (0.01)		0.85 (0.03)		0.91 (0.02)		0.78 (0.03)		0.88 (0.02)		0.82 (0.03)
BFAS 52		0.74 (0.02)		0.69 (0.04)		0.79 (0.03)		0.67 (0.04)		0.78 (0.03)		0.73 (0.04)
BFAS 62		0.69 (0.02)		0.69 (0.04)		0.72 (0.04)		0.66 (0.04)		0.60 (0.05)		0.77 (0.04)
BFAS 72		0.79 (0.02)		0.73 (0.04)		0.76 (0.03)		0.86 (0.02)		0.80 (0.03)		0.72 (0.04)
BFAS 82		0.70 (0.02)		0.61 (0.04)		0.66 (0.04)		0.70 (0.05)		0.70 (0.04)		0.74 (0.04)
BFAS 92		0.67 (0.02)		0.59 (0.05)		0.66 (0.04)		0.71 (0.04)		0.68 (0.04)		0.67 (0.05)
Structural model												
Path coefficient on allocation	0.11 (0.06)	0.13 (0.05)	0.30 (0.11)	-0.05 (0.10)	0.19 (0.07)	0.11 (0.07)	-0.06 (0.13)	0.25 (0.11)	0.20 (0.13)	0.07 (0.11)	0.06 (0.07)	0.13 (0.07)
	p = .04	p = .01	p = .004	p = .61	p = .01	p = .11	p = .62	p = .03	p = .12	p = .53	p = .41	p = .07
Fit indices												
RMSEA	0.09		0.08		0.09		0.10		0.08		0.09	
CFI	0.92		0.92		0.91		0.89		0.93		0.91	
TLI	0.91		0.91		0.90		0.88		0.92		0.90	
WRMR	1.93		1.13		1.36		1.37		1.15		1.26	

Note. Values in parentheses indicate standard errors. BFAS = Item from the Big Five Aspect Scales (DeYoung et al., 2007). CFI = Comparative fit index. RMSEA = Root mean square error of approximation. TLI = Tucker-Lewis index. WRMR = Weighted root mean square residual.

Discussion

A substantial literature has highlighted the role of social norms, good manners, and individual differences in politeness in promoting prosocial behavior in economic games (Bolton et al., 1998; Camerer & Thaler, 1995; Guala & Mittone, 2010; Kimbrough & Vostroknutov, 2015; Zhao et al., 2016). However, the majority of these studies has concentrated on neutrally-framed games where there is an absence of contextual cues that guide real-world distributive decisions. To address this, we tested whether previous findings from the standard dictator game could be replicated in the context of equity and need norms concerning unequal divisions of money.

First, we demonstrated that distributive preferences vary considerably according to the situational context in which the dictator game is framed. Consistent with previous research (Aguiar et al., 2008; Cherry et al., 2002; Eckel & Grossman, 1996; Frohlich et al., 2004; Mittone & Ploner, 2012; Ruffle, 1998), basic modifications of recipients' relative input in joint earnings or level of need changed allocations entirely. Our results illustrate the discrepancy between the relatively static concept of fairness in the standard dictator game, where equality norms may dominate the simple division of windfall money, and what is considered fair in wealth distribution in the real world, which is influenced by multiple situational norms.

Second, we demonstrated that distributive preferences vary not only as a function of situational context, but also of players' personality. Recent research showed that the politeness aspect of Big Five agreeableness was uniquely associated with fair allocations of wealth to one's partner in the standard dictator game (Zhao et al., 2016). Extending on these findings and on our first hypothesis, we found that—in addition to politeness—the compassion aspect of agreeableness uniquely predicted allocations of wealth when they were embedded within real-world norms. Politeness may be important in standard dictator games

by promoting greater adherence to a basic equality norm, particularly in the absence of contextual cues. However, the role of compassion also came into prominence when salient real-world norms dictated unequal divisions of wealth.

Interestingly, the relative contributions of politeness and compassion varied across individual games when we examined the direction and type of norm separately. Specifically, compassion alone uniquely predicted greater allocations of wealth to one's partner when one had put more work into earning the money (Equity–Self game). That is, when it was socially appropriate to demand a higher proportion of money based on input, the polite and impolite alike picked a similar share. On the other hand, compassion promoted greater allocations to one's partner despite the fact they were less deserving. This could be understood given the underlying characteristic of trait compassion, which represents emotional concern for others and motivates a desire to help others independent of norm boundaries (DeYoung et al., 2007; Osborne et al., 2013). Furthermore, agreement with the need norm was negatively correlated with politeness (r = -.20, p = .01) in the Equity–Self game, while it was not associated with compassion (r = -.09, p = .25). This suggests that strong equity norms led polite individuals to exclude other considerations—such as need—in their decisions, while those high on compassion were less discriminating.

While our findings point to varying trait effects for compassion and politeness across standard and equity-salient dictator games, future research could specifically test for interactions between the aspects of agreeableness and both norm direction and salience. This would support a contextualized account of prosociality, in which different prosocial traits correspond to different normative cues. Rather than pitting traits and situations against one another, this reflects the idea that "traits *are* contextualized and require appropriate eliciting stimuli before they are manifested in behavior and experience" (DeYoung, 2015, p. 35, emphasis in original; see also Ferguson & Lievens, in press). Previous research has shown

that politeness is one quality of a good citizen, motivating participants to share windfall gains fairly and in accordance with basic equality norms in the neutral lab environment. However, compassion makes a Good Samaritan, motivating people to distribute wealth more generously in real-world contexts of (and perhaps despite) salient equity norms.

Contrary to our second hypothesis, however, compassion did not uniquely predict allocations of wealth when need was salient. Indeed, neither aspect of agreeableness was a unique predictor in the need-salient games. This is somewhat at odds with the view that empathy-based altruism is evoked by the suffering of others (Batson, 1991; Gilbert, 2015; Goetz, Keltner, & Simon-Thomas, 2010; but see Klimecki et al., 2016, who found similar null effects for trait empathy). One possibility is that the use of a hypothetical scenario may not have been tangible enough to elicit greater compassion over and above politeness. For example, other studies with economic games have provided detailed instructions for taking on the perspective of a partner in order to induce state empathic concern (e.g., Batson & Ahmad, 2001; Batson & Moran, 1999).

Relatedly, a potential limitation of the current study is the use of hypothetical rather than incentivized games. It is encouraging that several studies have demonstrated comparable findings between hypothetical and incentivized decision-making paradigms, including those for trait effects in dictator games (Engel, 2011; Ferguson & Starmer, 2013; Hilbig, Thielmann, Hepp, Klein, & Zettler, 2015). However, Zhao et al. (2016) observed that standard dictator game allocations had the strongest correlations with Big Five agreeableness and its politeness aspect when they were incentivized rather than hypothetical. Therefore, future research using real stakes and recipients may provide a more complete picture and yield larger effect sizes than those in the current study.

Finally, an unexpected but interesting finding is the fact that allocations in the neutrally-framed standard dictator game were considerably lower than those in games where

the norm favored a partner, but were virtually the same as those from games where the norm favored oneself. That is, individuals in the standard game tended to respond *as if* they were more deserving than their partner, suggesting that this paradigm is not, strictly speaking, "neutral". Assumptions of deservingness may reflect just-world beliefs (Lerner, 1980) or a fundamental attribution error (Ross, 1977) concerning the source of the windfall money (Ma, Tunney, & Ferguson, 2014). Other studies have similarly observed that when both equity and need norms presented within the same dictator game, participants made trade-offs between them in a self-serving fashion (Cappelen et al., 2013; Frohlich et al., 2004; see also Feng et al., 2013). These may be forms of a self-serving bias in which individuals exploit ambiguity or uncertainty for self-interest, similar to the phenomenon of the moral "wiggle room" (Dana, Weber, & Kuang, 2007; Haisley & Weber, 2010).[2]

Conclusions

Norms of equity and need play an important role in determining distributive choices in the real world, but their influence has been largely neglected in studies of the dictator game. Extending on previous studies, we examined the role of prosocial personality traits in dictator games against a background of real-world norms where fairness was no longer synonymous with equality. Here, *both* compassion and politeness predicted allocations of wealth when they were embedded within salient norms of equity and need. These results help bridge our understanding of situational and personality determinants of prosocial behavior between the lab and the real world. While previous research has highlighted the role of politeness and norm adherence in neutrally-framed dictator games, our current findings also underscore the importance of compassion and emotional concern for others when it comes to wealth distribution in real-world contexts.

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Footnotes

[1] Goodness-of-fit indices for the SEM are provided in Table 2, which indicate adequate fit across the six models and appear to be largely a reflection of the corresponding measurement model than the structural model. Another means of addressing the fit of the measurement model is to account for shared variance at the item level and reduce the number of items by using item parcels (Bandalos & Finney, 2009). The results of the SEM with item parceling are presented in the online supplemental material (see Table S3) and yield a similar pattern of findings. There has been some controversy over the use of item parceling, which may conceal sources of model misspecification, especially with respect to the measurement model (Marsh, Lüdtke, Nagengast, Morin, & Von Davier, 2013; cf. Little, Rhemtulla, Gibson, & Schoemann, 2013). For this reason, as well as the fact that there was only modest improvement in fit, the SEM with item parceling is treated with some caution. Nevertheless, we also find the same results for all norm-salient games combined, the standard dictator game, and the Equity–Self game when analyzing the data using ordinary least squares multiple regression, which suggest that the current pattern of findings are relatively robust.

[2] Of course, we would also expect such biases to vary across individuals. Interestingly, further regression analysis showed that compassion alone was a unique predictor of allocations when the norm favored oneself, $\beta = 0.14$, $p = .02$, even though politeness had been a unique predictor in the standard dictator game. The absence of a unique role of politeness in the former suggests that politeness is not so much elicited by the perceived direction of the norm, but is conditional on the salience and specific nature of dominant norms. One possibility is that those higher on politeness were less susceptible to the self-serving bias in the standard dictator game, which may have led to their greater allocations of wealth. The current study, however, featured games with unambiguously self-serving norms,

and those higher on politeness may have responded to these norms appropriately, thus allocating no differently to others.

When fair is not equal: Compassion and politeness predict allocations of wealth under different norms of equity and need

Online supplemental material

Table S1

Bivariate Correlations between Big Five Traits and Aspects and Dictator Allocations

Variable	Mean (SD) (N = 919)	Correlations With Dictator Allocations				
		EP (N = 179)	ES (N = 176)	NP (N = 177)	NS (N = 175)	DG (N = 212)
Neuroticism	2.85 (0.65)	.03	.02	.03	.03	-.01
Withdrawal	2.94 (0.72)	.05	.03	.04	.07	-.003
Volatility	2.77 (0.72)	-.003	-.001	.01	-.02	-.02
Agreeableness	3.83 (0.49)	.25**	.18*	.24**	.20**	.23**
Compassion	3.87 (0.59)	.22**	.20**	.19*	.16*	.15*
Politeness	3.79 (0.54)	.20**	.11	.23**	.17*	.25**
Conscientiousness	3.42 (0.52)	-.002	.04	-.03	-.003	.07
Industriousness	3.36 (0.61)	-.01	.01	-.02	-.04	.01
Orderliness	3.47 (0.58)	.002	.06	-.05	.04	.11
Extraversion	3.38 (0.55)	.04	.01	-.04	.02	-.02
Enthusiasm	3.40 (0.63)	.10	.07	-.01	.01	.07
Assertiveness	3.36 (0.67)	-.03	-.04	-.06	.03	-.09
Openness/Intellect	3.82 (0.49)	.19*	.10	.02	.09	-.03
Openness	3.79 (0.59)	.17*	.17*	.06	.13	-.004
Intellect	3.85 (0.57)	.15*	-.003	-.03	.02	-.05

Note. Total *N* and means for personality data refer to combined norm-salient and standard dictator game samples. EP = *Equity–Partner* (dictator game where the partner has put in more work than oneself), ES = *Equity–Self* (dictator game where one has put in more work than the partner), NP = *Need–Partner* (dictator game where the partner needed the money more than oneself), NS = *Need–Self* (dictator game where one needed the money more than the partner).

*$p < .05$. **$p < .01$.

Table S2

Politeness and Compassion Items from the Big Five Aspect Scales (BFAS; DeYoung, Quilty, & Peterson, 2007)

Number	Item
Politeness	
7	Respect authority
17	Believe that I am better than others (reversed)
27	Hate to seem pushy
37	Take advantage of others (reversed)
47	Avoid imposing my will on others
57	Rarely put people under pressure
67	Insult people (reversed)
77	Seek conflict (reversed)
87	Love a good fight (reversed)
97	Am out for my own personal gain (reversed)
Compassion	
2	Am not interested in other people’s problems (reversed)
12	Feel others’ emotions
22	Inquire about others’ well-being
32	Can't be bothered with other's needs (reversed)
42	Sympathize with others’ feelings
52	Am indifferent to the feelings of others (reversed)
62	Take no time for others (reversed)
72	Take an interest in other people’s lives
82	Don't have a soft side (reversed)
92	Like to do things for others

Re-analysis using Structural Equation Modelling (SEM) with Item Parceling

Given concerns around the fit of the main SEM, we also re-analyzed the data using SEM with item parceling to address the fit of the measurement model by accounting for some of the shared variance at the item level and to reduce the number of items (Bandalos & Finney, 2009). For each condition, the structural equation model consisted of a confirmatory factor analysis with maximum likelihood estimation. There were two correlated latent variables—politeness and compassion—which were indicated by three item parcels each. Based on the recommendations of Marsh, Lüdtke, Nagengast, Morin, and Von Davier (2013), item parcels were created using a homogeneous parceling strategy, in which closely-related items likely to share a source of systematic variation were placed in the same parcel. This was determined based on the factor loadings from an exploratory factor analysis for each aspect of agreeableness, using the corresponding ten items from the Big Five Aspect Scales (DeYoung et al., 2007). We then regressed dictator allocations on these two latent variables simultaneously. As there is some controversy around item parceling, which may conceal sources of model misspecification (Marsh et al., 2013; cf. Little, Rhemtulla, Gibson, & Schoemann, 2013), this analysis is treated with some caution.

The SEM with item parceling generally yielded a slight improvement in fit, although this was not consistent across all fit statistics and conditions. The pattern of findings replicated those of the item-level SEM (albeit with some secondary findings approaching significance). Notably, compassion again emerged as a unique predictor of allocations of wealth for all norm-salient games combined, in addition to politeness, which showed a trend toward significance. This was in contrast to the standard dictator game, where politeness alone was a unique predictor of allocations, over and above the effect of compassion.

Table S3

Structural equation model with item parceling (standardized solutions) predicting allocations of wealth in norm-salient and standard dictator games

	All norm-salient conditions		Standard dictator		Equity–Partner		Equity–Self		Need–Partner		Need–Self	
	Politeness	Compassion	Politeness	Compassion	Politeness	Compassion	Politeness	Compassion	Politeness	Compassion	Politeness	Compassion
Measurement model												
Parcel 1 (27, 47, 57)	0.37 (0.04)		0.40 (0.07)		0.31 (0.09)		0.39 (0.08)		0.47 (0.08)		0.28 (0.08)	
Parcel 2 (7, 17R, 37R, 67R, 97R)	0.79 (0.03)		0.96 (0.05)		0.86 (0.08)		0.76 (0.08)		0.72 (0.06)		0.84 (0.07)	
Parcel 3 (77R, 87R)	0.58 (0.04)		0.60 (0.05)		0.52 (0.08)		0.51 (0.08)		0.62 (0.07)		0.63 (0.07)	
Parcel 4 (12, 42, 82R)		0.78 (0.02)		0.79 (0.04)		0.81 (0.04)		0.78 (0.04)		0.76 (0.04)		0.79 (0.04)
Parcel 5 (22, 72, 92)		0.79 (0.02)		0.77 (0.04)		0.76 (0.04)		0.81 (0.04)		0.80 (0.04)		0.79 (0.04)
Parcel 6 (2R, 32R, 52R, 62R)		0.81 (0.02)		0.78 (0.04)		0.83 (0.04)		0.79 (0.04)		0.82 (0.04)		0.79 (0.04)
Structural model												
Path coefficient on allocation	0.12 (0.07)	0.13 (0.06)	0.29 (0.11)	-0.04 (0.12)	0.20 (0.11)	0.12 (0.11)	-0.01 (0.138)	0.22 (0.13)	0.27 (0.16)	0.01 (0.15)	0.12 (0.12)	0.13 (0.12)
	p = .07	p = .03	p = .01	p = .75	p = .07	p = .26	p = .944	p = .08	p = .10	p = .95	p = .34	p = .27
Fit indices												
RMSEA	0.07		0.11		0.10		0.08		0.06		0.13	
CFI	0.97		0.93		0.93		0.95		0.98		0.91	
TLI	0.95		0.89		0.88		0.92		0.97		0.84	
SRMR	0.03		0.05		0.04		0.04		0.04		0.05	

Note. Values in parentheses indicate standard errors. CFI = Comparative fit index. RMSEA = Root mean square error of approximation. TLI = Tucker-Lewis index. SRMR = Standardized root mean square residual.

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