Appendix: Supporting Documents and Analysis for "Using Social Norms to Explain Giving Behavior"

Appendix A   Alternative Conditional Logit Specifications

Table A1 Krupka-Weber model with charity and same-class recipients

	(1)	(2)	(3)	(4)
Monetary Payoff (β)	0.025***	0.182***	0.217***	0.103***
	(5.39)	(15.54)	(15.85)	(5.77)
Avg. Appropriateness Rating (γ)		2.314***	2.205***	1.013***
		(18.23)	(14.94)	(3.49)
Avg. Appropriateness Rating (γ) $\times$ Charity Game			1.005***	0.799**
			(6.46)	(3.24)
Subject-level Clustering	No	No	No	Yes
Observations	15,620	15,620	15,620	7,810
Pseudo R^2	0.005	0.067	0.075	0.021
Clusters	1,420	1,420	1,420	710

*Notes: Results of a conditional logit model with only charity recipient and same-class recipient dictator game treatments. The equation estimated is Equation 2: Krupka-Weber Model. Column 4 re-specifies the data such it is no longer a panel and there is only one dictator game observation per subject. t statistics in parentheses * p<0.05, ** p<0.01, *** p<0.001.*

Table A2 Krupka-Weber model with charity and freshmen recipients

	(1)	(2)	(3)	(4)
Monetary Payoff (β)	0.023***	0.132***	0.156***	0.061**
	(4.92)	(11.42)	(11.62)	(3.03)
Avg. Appropriateness Rating (γ)		1.661***	1.389***	-0.086
		(11.85)	(8.09)	(-0.23)
Avg. Appropriateness Rating (γ) $\times$ Charity Game			1.057***	1.353***
			(6.92)	(5.43)
Subject-level Clustering	No	No	No	Yes
Observations	15,620	15,620	15,620	7,810
Pseudo R^2	0.005	0.033	0.043	0.017
Clusters	1,420	1,420	1,420	710

*Notes: Results of a conditional logit model with only charity recipient and freshmen recipient dictator game treatments. The equation estimated is Equation 2: Krupka-Weber Model. Column 4 re-specifies the data such it is no longer a panel and there is only one dictator game observation per subject. t statistics in parentheses * p<0.05, ** p<0.01, *** p<0.001.*

Appendix B   Average Social Appropriateness Rating by Residential College

In our study, subjects were asked to coordinate responses with other subjects who resided in their same residential college. As such, subjects were incentivized to report second-order beliefs regarding residents of their residential college and not of Rice University as a whole. This type of incentive mechanism may have led to differential social appropriateness levels by residential college. To explore this possibility, we report the average social appropriateness rating for each treatment (charity, freshmen, and same-class recipient) by residential college in Table B3, Table B4, and Table B5.

We also plot these means by dictator treatment in Figure B1, Figure B2, and Figure B3. Although there are various level differences between social appropriate ratings by transfer amount and residential college, we still find that in the charity recipient treatment, subjects unanimously agree that the most appropriate action is the ($0, $20) allocation, regardless of residential college. Similarly, all residential colleges identified that the most appropriate action in the freshmen or same-class recipient treatment is the ($10, $10) allocation. Consequently, although we see small variations in the levels of average social appropriateness ratings by residential college, we still find that the underlying *shape* of the social norm to be identical for each of the treatments.

Table B3 Charity recipient social norms

	Baker	Brown	Duncan	Hanszen	Jones	Lovett	Martel	McMurtry	Sid	WRC	Wiess
	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.
Transfer $0 Appro. Rating	-0.49	-0.58	-0.43	-0.60	-0.69	-0.74	-0.55	-0.51	-0.29	-0.66	-0.66
	(0.66)	(0.49)	(0.61)	(0.57)	(0.49)	(0.44)	(0.56)	(0.57)	(0.76)	(0.42)	(0.55)
Transfer $2 Appro. Rating	-0.35	-0.41	-0.27	-0.48	-0.42	-0.56	-0.43	-0.32	-0.01	-0.43	-0.54
	(0.73)	(0.54)	(0.60)	(0.59)	(0.54)	(0.49)	(0.58)	(0.58)	(0.71)	(0.53)	(0.55)
Transfer $4 Appro. Rating	-0.13	-0.26	-0.06	-0.25	-0.22	-0.33	-0.26	-0.16	0.20	-0.27	-0.34
	(0.68)	(0.51)	(0.57)	(0.57)	(0.56)	(0.55)	(0.59)	(0.63)	(0.65)	(0.53)	(0.58)
Transfer $6 Appro. Rating	0.01	-0.02	0.04	-0.10	-0.10	-0.04	-0.03	0.00	0.36	-0.04	-0.13
	(0.67)	(0.53)	(0.58)	(0.50)	(0.52)	(0.54)	(0.55)	(0.61)	(0.55)	(0.48)	(0.60)
Transfer $8 Appro. Rating	0.20	0.15	0.17	0.14	0.09	0.18	0.18	0.17	0.49	0.10	0.07
	(0.65)	(0.54)	(0.54)	(0.48)	(0.51)	(0.48)	(0.60)	(0.59)	(0.50)	(0.49)	(0.58)
Transfer $10 Appro. Rating	0.53	0.51	0.55	0.42	0.52	0.51	0.55	0.52	0.73	0.61	0.46
	(0.59)	(0.49)	(0.45)	(0.43)	(0.45)	(0.43)	(0.51)	(0.51)	(0.44)	(0.37)	(0.52)
Transfer $12 Appro. Rating	0.54	0.58	0.64	0.46	0.60	0.65	0.56	0.55	0.75	0.69	0.49
	(0.54)	(0.47)	(0.43)	(0.45)	(0.42)	(0.36)	(0.51)	(0.49)	(0.38)	(0.38)	(0.50)
Transfer $14 Appro. Rating	0.62	0.63	0.71	0.60	0.69	0.75	0.62	0.62	0.81	0.77	0.55
	(0.53)	(0.48)	(0.43)	(0.46)	(0.36)	(0.32)	(0.49)	(0.47)	(0.35)	(0.36)	(0.44)
Transfer $16 Appro. Rating	0.68	0.73	0.74	0.72	0.77	0.83	0.75	0.69	0.81	0.79	0.72
	(0.52)	(0.46)	(0.46)	(0.48)	(0.36)	(0.36)	(0.46)	(0.47)	(0.39)	(0.40)	(0.45)
Transfer $18 Appro. Rating	0.72	0.78	0.80	0.75	0.82	0.85	0.79	0.69	0.83	0.80	0.76
	(0.53)	(0.41)	(0.39)	(0.47)	(0.38)	(0.35)	(0.40)	(0.47)	(0.43)	(0.37)	(0.46)
Transfer $20 Appro. Rating	0.77	0.84	0.86	0.85	0.90	0.89	0.83	0.76	0.88	0.81	0.84
	(0.51)	(0.39)	(0.35)	(0.38)	(0.32)	(0.32)	(0.34)	(0.43)	(0.39)	(0.41)	(0.44)
Count	73	54	75	54	64	65	58	58	65	60	58

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Table B4 Freshmen recipient social norms

	Baker Mean/S.D.	Brown Mean/S.D.	Duncan Mean/S.D.	Hanszen Mean/S.D.	Jones Mean/S.D.	Lovett Mean/S.D.	Martel Mean/S.D.	McMurtry Mean/S.D.	Sid Mean/S.D.	WRC Mean/S.D.	Wiess Mean/S.D.
Transfer $0 Appro. Rating	-0.40 (0.71)	-0.46 (0.55)	-0.29 (0.54)	-0.49 (0.56)	-0.59 (0.58)	-0.62 (0.55)	-0.49 (0.62)	-0.46 (0.65)	-0.37 (0.71)	-0.57 (0.49)	-0.51 (0.58)
Transfer $2 Appro. Rating	-0.32 (0.69)	-0.30 (0.52)	-0.28 (0.51)	-0.44 (0.56)	-0.49 (0.54)	-0.45 (0.53)	-0.40 (0.61)	-0.43 (0.59)	-0.21 (0.70)	-0.39 (0.52)	-0.39 (0.59)
Transfer $4 Appro. Rating	-0.14 (0.63)	-0.09 (0.49)	-0.08 (0.46)	-0.26 (0.51)	-0.29 (0.50)	-0.24 (0.51)	-0.16 (0.52)	-0.20 (0.53)	-0.04 (0.57)	-0.17 (0.49)	-0.21 (0.49)
Transfer $6 Appro. Rating	0.05 (0.55)	0.07 (0.44)	0.10 (0.47)	-0.04 (0.46)	-0.06 (0.47)	0.04 (0.46)	-0.00 (0.50)	0.02 (0.49)	0.18 (0.50)	0.09 (0.42)	0.03 (0.47)
Transfer $8 Appro. Rating	0.32 (0.51)	0.30 (0.44)	0.32 (0.46)	0.22 (0.42)	0.29 (0.44)	0.36 (0.38)	0.32 (0.46)	0.31 (0.43)	0.42 (0.48)	0.38 (0.42)	0.40 (0.43)
Transfer $10 Appro. Rating	0.81 (0.38)	0.84 (0.29)	0.77 (0.43)	0.79 (0.41)	0.81 (0.30)	0.78 (0.39)	0.75 (0.35)	0.77 (0.42)	0.84 (0.37)	0.80 (0.31)	0.79 (0.31)
Transfer $12 Appro. Rating	0.54 (0.52)	0.58 (0.44)	0.56 (0.52)	0.58 (0.45)	0.61 (0.46)	0.54 (0.50)	0.59 (0.50)	0.59 (0.48)	0.57 (0.51)	0.63 (0.38)	0.64 (0.38)
Transfer $14 Appro. Rating	0.47 (0.59)	0.44 (0.53)	0.48 (0.59)	0.38 (0.56)	0.52 (0.51)	0.53 (0.54)	0.48 (0.56)	0.37 (0.52)	0.43 (0.54)	0.53 (0.48)	0.53 (0.52)
Transfer $16 Appro. Rating	0.42 (0.64)	0.35 (0.69)	0.45 (0.60)	0.32 (0.59)	0.52 (0.59)	0.38 (0.63)	0.40 (0.65)	0.25 (0.59)	0.32 (0.63)	0.42 (0.58)	0.48 (0.60)
Transfer $18 Appro. Rating	0.42 (0.71)	0.32 (0.74)	0.38 (0.68)	0.26 (0.69)	0.33 (0.78)	0.28 (0.76)	0.38 (0.70)	0.17 (0.74)	0.21 (0.83)	0.38 (0.65)	0.41 (0.75)
Transfer $20 Appro. Rating	0.40 (0.70)	0.28 (0.73)	0.41 (0.65)	0.27 (0.66)	0.39 (0.71)	0.31 (0.73)	0.40 (0.67)	0.17 (0.69)	0.27 (0.73)	0.39 (0.63)	0.43 (0.72)
Count	73	54	75	54	64	65	58	58	65	60	58

Table B5 Same-class recipient social norms

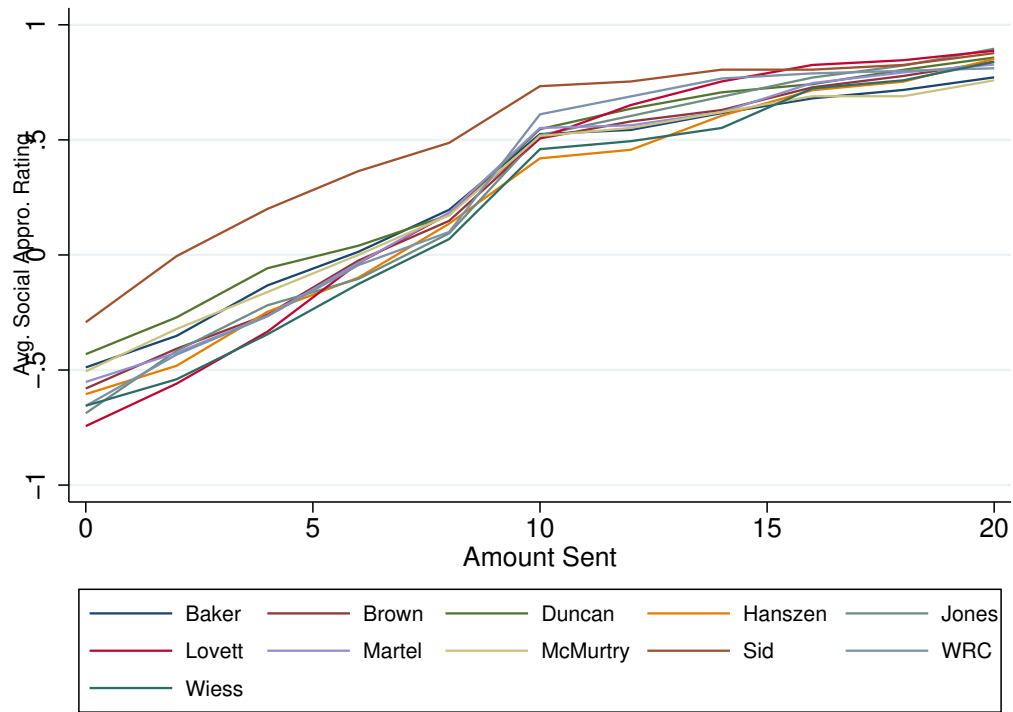|	Baker	Brown	Duncan	Hanszen	Jones	Lovett	Martel	McMurtry	Sid	WRC	Wiess
	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.	Mean/S.D.
Transfer $0 Appro. Rating	-0.52	-0.51	-0.32	-0.56	-0.61	-0.62	-0.47	-0.47	-0.35	-0.56	-0.54
	(0.61)	(0.60)	(0.62)	(0.50)	(0.55)	(0.58)	(0.62)	(0.66)	(0.71)	(0.53)	(0.60)
Transfer $2 Appro. Rating	-0.39	-0.25	-0.26	-0.46	-0.46	-0.52	-0.37	-0.46	-0.21	-0.43	-0.39
	(0.65)	(0.59)	(0.58)	(0.49)	(0.59)	(0.56)	(0.59)	(0.58)	(0.66)	(0.50)	(0.56)
Transfer $4 Appro. Rating	-0.21	-0.09	-0.08	-0.23	-0.27	-0.34	-0.13	-0.23	-0.02	-0.24	-0.18
	(0.63)	(0.52)	(0.55)	(0.46)	(0.53)	(0.57)	(0.53)	(0.51)	(0.57)	(0.50)	(0.48)
Transfer $6 Appro. Rating	0.00	0.12	0.11	0.04	-0.08	-0.02	0.03	0.01	0.19	0.07	0.05
	(0.51)	(0.48)	(0.49)	(0.40)	(0.48)	(0.47)	(0.47)	(0.40)	(0.48)	(0.39)	(0.47)
Transfer $8 Appro. Rating	0.31	0.36	0.31	0.32	0.25	0.37	0.33	0.34	0.43	0.30	0.31
	(0.49)	(0.37)	(0.44)	(0.35)	(0.44)	(0.42)	(0.43)	(0.40)	(0.41)	(0.36)	(0.43)
Transfer $10 Appro. Rating	0.84	0.80	0.85	0.80	0.85	0.85	0.78	0.79	0.89	0.83	0.83
	(0.30)	(0.31)	(0.36)	(0.33)	(0.30)	(0.35)	(0.32)	(0.38)	(0.30)	(0.29)	(0.29)
Transfer $12 Appro. Rating	0.55	0.53	0.66	0.57	0.64	0.64	0.53	0.55	0.61	0.60	0.57
	(0.50)	(0.38)	(0.48)	(0.37)	(0.49)	(0.44)	(0.48)	(0.46)	(0.44)	(0.46)	(0.43)
Transfer $14 Appro. Rating	0.40	0.42	0.60	0.43	0.49	0.49	0.41	0.37	0.42	0.50	0.41
	(0.59)	(0.53)	(0.56)	(0.49)	(0.55)	(0.56)	(0.53)	(0.54)	(0.55)	(0.49)	(0.56)
Transfer $16 Appro. Rating	0.33	0.35	0.53	0.28	0.40	0.41	0.33	0.25	0.29	0.40	0.37
	(0.65)	(0.63)	(0.59)	(0.58)	(0.67)	(0.64)	(0.66)	(0.61)	(0.62)	(0.58)	(0.64)
Transfer $18 Appro. Rating	0.21	0.28	0.46	0.16	0.25	0.33	0.25	0.10	0.12	0.30	0.25
	(0.80)	(0.74)	(0.70)	(0.75)	(0.80)	(0.73)	(0.78)	(0.74)	(0.80)	(0.70)	(0.81)
Transfer $20 Appro. Rating	0.30	0.28	0.48	0.17	0.32	0.34	0.31	0.17	0.17	0.33	0.28
	(0.69)	(0.71)	(0.64)	(0.66)	(0.75)	(0.68)	(0.74)	(0.69)	(0.75)	(0.67)	(0.76)
Count	73	54	75	54	64	65	58	58	65	60	58

Fig. B1 Average social appropriateness rating by residential college and allocation amount for the charity recipient dictator game treatment. Colored lines denote Rice residential colleges.
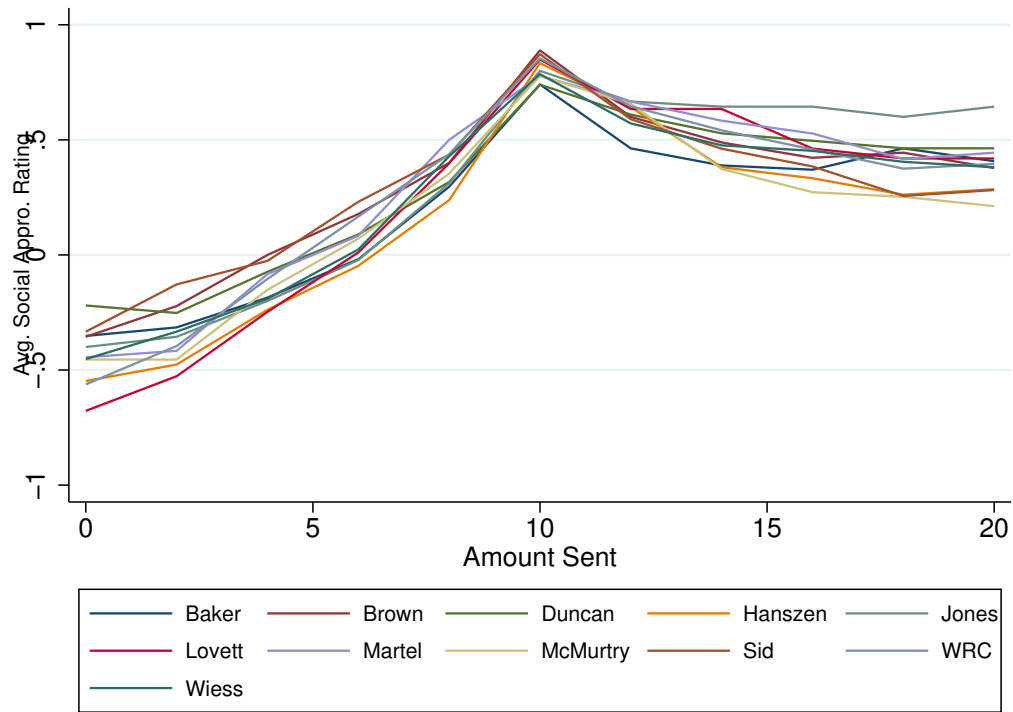
Fig. B2 Average social appropriateness rating by residential college and allocation amount for the freshmen recipient dictator game treatment. Colored lines denote Rice residential colleges.
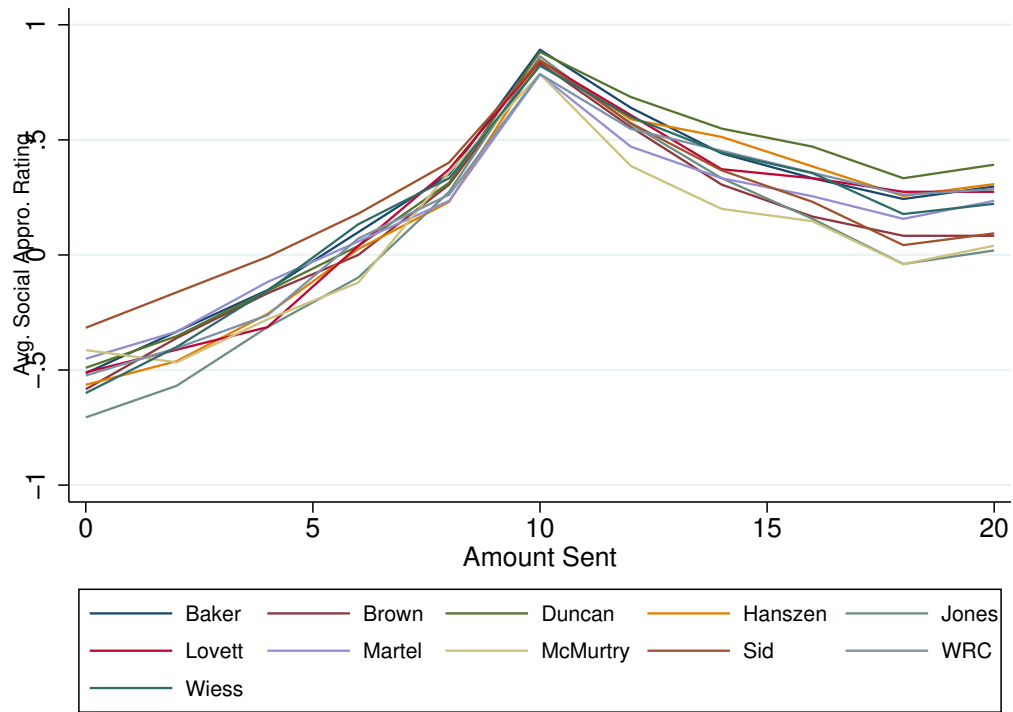
Fig. B3 Average social appropriateness rating by residential college and allocation amount for the same class recipient dictator game treatment. Colored lines denote Rice residential colleges.

Appendix C   Predicting Behavior using the Conditional Logit Estimates

We plot the predicted choices provided by the Krupka-Weber model along with the actual allocation decisions to visually inspect which model better predicts observed behavior. We calculate the probability distribution of dictator transfers for both treatments using the estimated coefficients for each model. Figures C4 and C5 compare the predicted choice frequencies and the observed choice frequencies for the charity treatment and the other-student treatment, respectively.
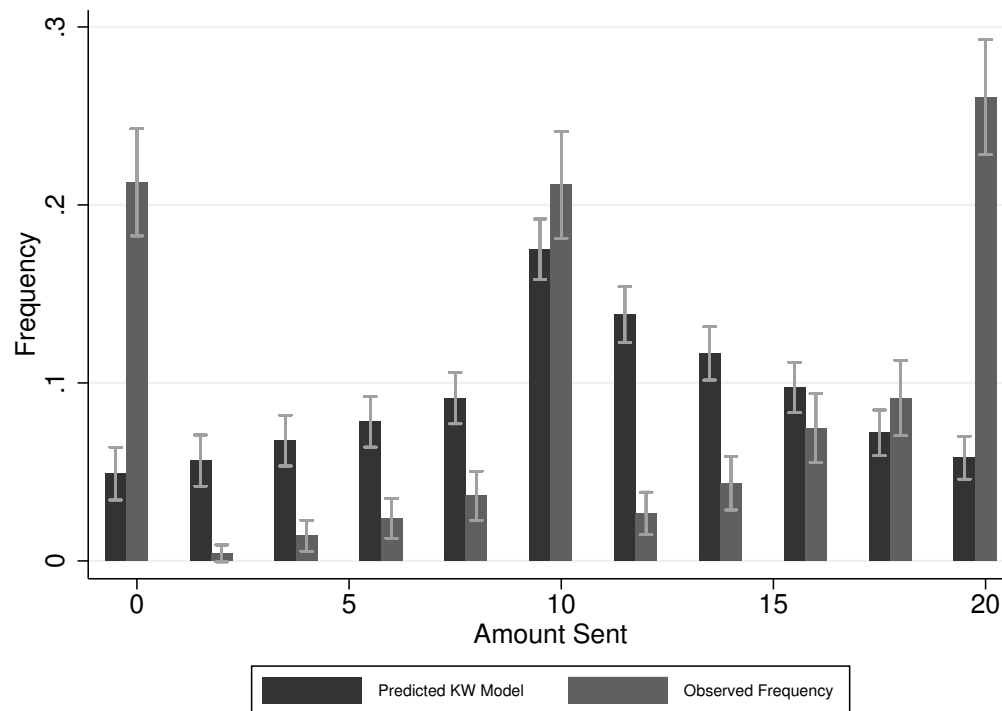
Fig. C4 Predicted frequency of dictator allocation decisions based on the regression estimates of the Krupka-Weber model given by Equation 2 is denoted by Predicted KW Model in black. Error bars represent 95% confidence intervals.

In Figure C5, we present the comparison of predicted and observed choice frequencies for the other-student treatment.
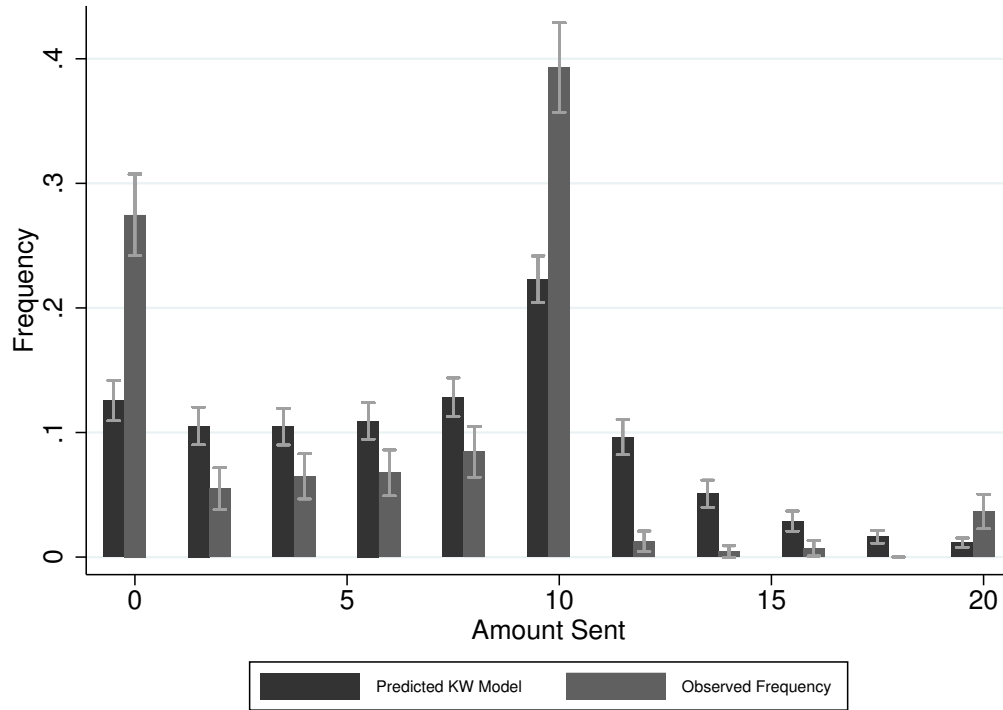
Fig. C5 Predicted frequency of dictator allocation decisions based on the regression estimates of the Krupka-Weber model given by Equation 2 is denoted by Predicted KW Model in black. Error bars represent 95% confidence intervals.

Appendix D   Comparison between Freshmen and Same-Class Appropriateness Ratings

In order to compare the social appropriateness ratings of allocation decisions between the freshman recipient treatment and the same-class treatment we report the mean, standard deviations, and distribution of appropriateness ratings for both treatments and compare these results in Table D6. The left side of the table reports results from the freshmen treatment while results of the same-class treatment are on the right side. For both treatments, we find that appropriateness ratings peak at the ($10, $10) allocation decision. We also report the t-statistic and Wilcoxon rank-sum test statistic for each allocation amount between the freshmen and same-class treatments. The results of the Wilcoxon Sign Rank test show that for almost all allocation choices, the social appropriateness ratings between freshman and same-class recipients are not statistically different from one another.

Table D6 Summary statistics of norm ratings when the recipient is a freshman student or a same-class student

	Freshmen Student Recipient (N=710)								Same-Class Student Recipient (N=710)									
Potential Allocations	Action	Mean	SD	VI (%)	SI (%)	SA (%)	VA (%)	Potential Allocations	Action	Mean	SD	VI (%)	SI (%)	SA (%)	VA (%)	T Statistic	Wilcoxon Sign Rank Test
20,0	Give $0	-0.48	0.60	48	32	14	6	20,0	Give $0	-0.50	0.60	50	30	13	6	-1.392	-1.237
18,2	Give $2	-0.37	0.59	35	41	18	6	18,2	Give $2	-0.38	0.58	36	42	17	6	-0.614	-0.257
16,4	Give $4	-0.17	0.52	15	51	27	6	16,4	Give $4	-0.18	0.54	17	50	26	7	-0.717	-0.421
14,6	Give $6	0.05	0.48	6	39	47	8	14,6	Give $6	0.05	0.47	4	41	46	8	0.301	0.070
12,8	Give $8	0.33	0.44	2	15	63	19	12,8	Give $8	0.33	0.44	2	15	63	19	0.131	-0.043
10,10	Give $10	0.78	0.36	1	2	24	72	10,10	Give $10	0.83	0.32	0	1	22	77	3.245	2.866
8,12	Give $12	0.59	0.47	2	6	43	49	8,12	Give $12	0.59	0.45	2	6	44	48	0.384	0.597
6,14	Give $14	0.48	0.54	3	14	40	42	6,14	Give $14	0.48	0.54	3	14	40	42	-1.039	-0.977
4,16	Give $16	0.40	0.61	6	21	31	42	4,16	Give $16	0.37	0.62	7	21	32	40	-1.786*	-0.997
2,18	Give $18	0.33	0.73	15	16	25	45	2,18	Give $18	0.26	0.76	19	15	25	41	-3.432***	-3.020***
0,20	Give $20	0.35	0.69	11	18	27	43	0,20	Give $20	0.30	0.70	13	20	27	40	-2.611***	-1.945*

Notes: We report the mean and standard deviation for each possible allocation by dictator treatment. We also report the percentage of responses of each social appropriateness rating in terms of percentage. The second to last column report the t-statistic of a paired t-test between the charity and student treatment and the last column reports the combined signed-rank sum from a Wilcoxon signed-rank test. *p < 0.1, **p < 0.05, ***p < 0.01. VI refers to "Very Inappropriate"; SI to "Somewhat Inappropriate"; SA to "Somewhat Appropriate" and VA to "Very Appropriate". Percentages may not sum to 100 due to rounding.

Appendix E   Order Effects From Anchoring

The discussion of order effects in our discussion section only considers that subjects, after repeated exposure to dictator games and the norm elicitation, become increasingly aware of the response desired by the experiment/er. However, order effects may also stem from an anchoring effect.

Because the freshmen and same-class recipient dictator game always occurred prior to the charity recipient dictator game, subjects may have anchored decisions to the way they played in the previous dictator game. We believe that the possible contribution of any such ordering effects is weak. Although the ordering of the student recipient and dictator recipient was not randomized, there were a substantial number of modules that subjects completed between them, see Figure 1. As such, the delay between tasks mitigates some of these concerns.

However, we also explore any potential ordering effects within the student recipient dictator games by looking at the absolute difference in transfer allocation. First, for each subject we compute the absolute difference in transfer allocations between the freshmen and same-class dictator games. More specifically, we compute the absolute difference between the first game subjects played (freshmen or same-class recipient) and the second game subjects played (same-class or freshmen recipient). Figure E6 provides a histogram of these absolute differences in allocation amounts. If there were strong ordering effects that caused the allocation decisions to converge, we would see clear differences in the frequency of allocation amount by order of dictator game. By visual inspection, differences in allocation decisions between the freshmen recipient and the same-class recipient do not appear to be influenced by the ordering of the dictator game. We also verify this by using a two-sample t-test comparing the computed differences by game order (d = -0.18. se = 0.27, df = 708, p-value = 0.49).

Finally, as explored in our discussion, one may be concerned of an overall ordering effect in which subjects ascertain the purpose of the experiment throughout the survey and thereby respond differently towards the end of the survey. This type of ordering effect does not provide directional predictions but rather predicts a decrease in the variation of the elicited responses. Although this is a possibility, we observe higher variance in the student recipient dictator game responses in

comparison to the charity-recipient responses (class-recipient transfers std. error = 0.180, charity-recipient transfers std. error = 0.279, f-stat = 0.4186, df = 709, p-value=0.000; freshmen-recipient transfers std. error = 0.211, charity-recipient transfers std. error = 0.279, f-stat = 0.571, df = 709, p-value = 0.000; student recipient appropriateness rating std. error= 0.0076, charity-recipient appropriateness rating std. error = 0.0079, f-stat = 0.9215, df = 7,809 p-stat= 0.0003). Given that the two student recipient treatments occurred before the charity-recipient treatment, we do not find evidence of subjects responding more precisely throughout the experimental survey.

Fig. E6 Distribution of absolute differences between freshmen recipient and same-class recipient based on order of dictator game.

Appendix F   Experimental Study Conducted in a Different Wave Using a Bushfire Charity

We can also demonstrate that our main results are similar to the results from an different experiment conducted earlier in the study. Rice student subjects gave to a charitable organization which focused on providing aid to the early 2020 Australian bushfires (Sinha, 2021). This earlier study consisted of two separate survey waves collected in March and April of 2020. There are several methodological differences between our analysis and the bushfire study. First, subjects were only drawn from and paired with students from the 2016 entering class (i.e. same-class). A second difference is the timing and order in which subjects completed the dictator game and the norm elicitation task. Notably, the norm elicitation task for the subject-recipient dictator game occurred approximately a month prior to subjects actually playing the dictator game. However, the latter difference can aid us in understanding how sensitive our results our to the temporal proximity of the norm elicitation and the dictator game behavior.

We collected data on dictator transfers and social norms of giving to two different recipients - a charity working for bushfire relief in Australia (charity treatment) and an anonymous Rice University student who was also a participant in the panel (student treatment). The Australia bushfire relief treatment was conducted in February 2020 and the student treatment was conducted in March 2020. The student subjects read the following vignette prior to making the allocation decision in the charity treatment:

> *Australians are reeling from hundreds of devastating fires sweeping through parts of the country. Since October 2019, the wildfires have scorched millions of acres of land and destroyed more than a thousand homes. At least 26 people have died. But perhaps the greatest damage is to wildlife. An estimated 1 billion animals have been lost, and scientists fear long-term damage to many sensitive ecosystems. With people displaced and wildlife populations gutted, there are ways you can help.*

Subjects were instructed to choose among three different organizations working for bush-

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fire relief – Australian Red Cross, New South Wales Rural Fire Service and the Royal Society for the Prevention of Cruelty to Animals (RSPCA) New South Wales – and then allocate $20 (their endowment in this task) between themselves and the charity of their choice. In the student treatment, the subjects were provided with the following instructions:

> *In this task you will allocate a fixed amount of money between yourself and another person. If this task is randomly selected for payment, then you will either be paid as a decision maker, or as a recipient of someone else's decision. Your role of decision maker or recipient will also be determined randomly. You will not know the identity of your counterpart, nor will the counterpart know yours. If your role is the decision maker, then a recipient will be randomly selected for you. That recipient is also a member of the Class of 2020 participating in this study. If your role is the recipient, you will be randomly assigned to a decision maker, who is also a member of the Class of 2020 participating in the study. Their decision will determine their own payoff and yours.*

Subjects played the social norm elicitation game twice, first after reading about the dictator game with a student recipient and second time after reading about the dictator game with the charity recipient. In each game, subjects were asked to rate the appropriateness of all eleven possible allocation choices on a 4-point scale – "very socially appropriate," "somewhat socially appropriate," "somewhat socially inappropriate" and "very socially inappropriate." To incentivize these tasks, subjects were instructed that they would earn money only if their ratings for three randomly selected allocation choices matched the modal rating for those choices by other student participants. Both social norm elicitation tasks were completed in February 2020. Subjects read the following instructions in the norm elicitation task for the student treatment:

> *There are 2 individuals: A and B. A has $20 to allocate between himself/herself and individual B. Both A and B are students at Rice, and both are aware of this. However, neither knows the identity of the other. A must decide how much to keep for him-*

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self/herself, and how much to pass to B. A's decision determines the earnings of both individuals. A can make any of 11 possible allocations. You will be asked, for each possible allocation, whether that allocation by A is socially appropriate or not. If this task is chosen for payment, 3 of these allocations will be randomly selected. For each, your response will be compared with the other study participants in your college. If you select the same response as the most frequently given by other participants in your college, then you will receive $3. If you do not match the most common response then you will receive $0.

A total of 385 panel members participated in the February/March 2020 wave. There were two parts to this study. In Part 1, there were seven tasks, six of which were incentivized. These tasks were in a fixed order. In Part 2 subjects were asked to identify 10 of their friends and they later participated in an experiment designed to test the strength of the friendship network. Excluding outliers, subjects spent slightly over 11 minutes in the study. On average, subjects earned $33.29 for both parts of the study.

For the purpose of this study, we use data from three of the seven tasks completed in this wave. The first task was the norm elicitation for the dictator game with a student recipient; the bushfire relief charitable donation was Task 3, and the norm elicitation for that decision Task 4. Norms were elicited using a variation on the incentivized coordination game developed by Krupka and Weber, 2013.

A month later, a total of 406 students from our panel participated in the March 2020 wave. Subjects had just been sent off campus for remote learning due to COVID-19, though some international students remained in residence. Subjects were told that the study would take about 25 minutes and that they would be compensated $5 for completing a short survey and compensated for two out of six, randomly chosen, incentivized decision tasks. Excluding outliers, subject spent an average of 23 minutes with this on-line study. The study took place between March 17 and April 11, 2020. In the task of interest from the March 2020 wave, subjects were asked to allocate a fixed amount of money ($20) between themselves and another student (also a senior and a participant

in the study) at Rice University. A total of 358 subjects participated in both waves. Screen shots below show the instructions for the tasks.

Figure F7 presents the distribution of dictator transfers under the two treatments. In treatment 1, when the recipient is a charity, more subjects choose allocations that are favorable to the recipient than when the recipient is a student. Remarkably, 50% (N=176) of our subjects transfer all their endowment ($20) to the recipient in the charity treatment. In comparison, only one subject gives $20 to the recipient in treatment 2 where the recipient is a student.
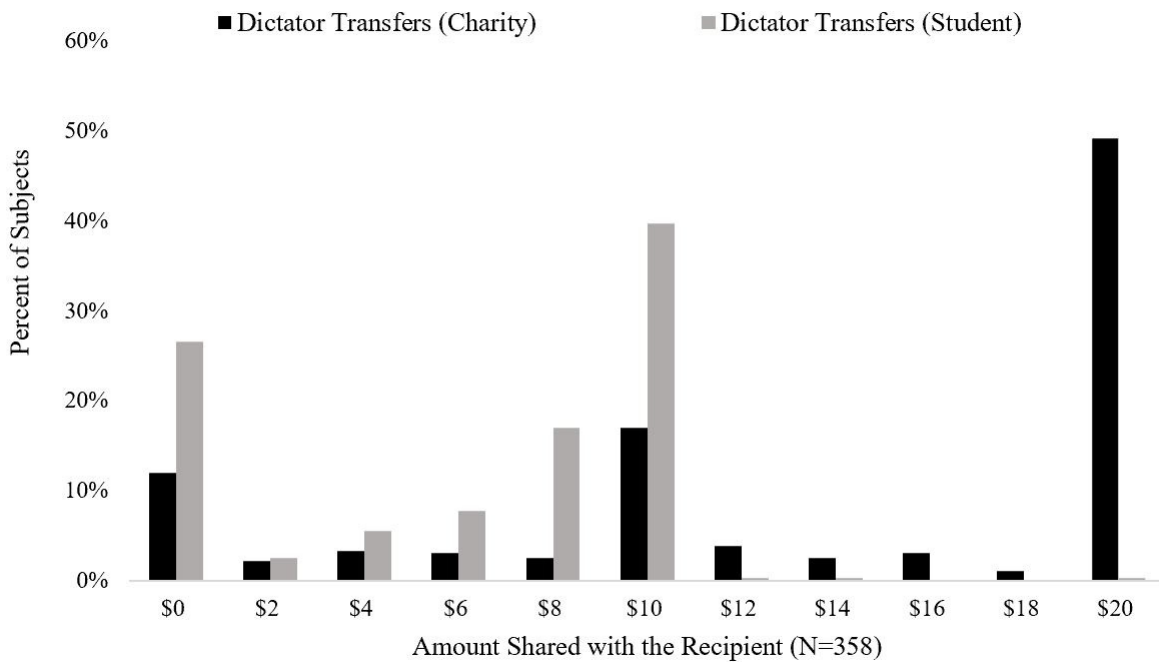
Fig. F7 Frequency distribution of dictator transfers between treatments.

Table F7 presents the summary statistics of dictator transfers under both treatments. The average transfer in the charity treatment is $13.6 or about 68% of the initial endowment of $20, while in the student treatment the average is much lower, $6.2 or 31% of the initial endowment. The difference in giving behavior is substantiated when we test for differences in the distributions of decisions using a Wilcoxon signed-rank test ($Z = 14.213$, $p < 0.001$). This non-parametric test is based on differences in transfers between treatments for each subject and, therefore, is appropriate to test for treatment effects in a within-subject design.

Table F7 Summary statistics of dictator transfer by treatment

Variable	N	Mean (St. Dev.)	Min.	Max.
Dictator Transfer (Charity)	358	13.61 (7.34)	0	20
Dictator Transfer (Student)	358	6.20 (4.25)	0	20

Difference in means is significant: t-statistic = 20.045, p < 0.001. Differences in transfer between treatments is significant: Wilcoxon signed rank test: Z = 14.213, p < 0.001.

Table F8 presents the mean appropriateness rating of each allocation choice in the dictator game for both treatments. The table shows the mean, standard deviation, and distribution of the appropriateness ratings for each allocation choice under both treatments. The left half of the table presents these estimates for the charity treatment. The mean appropriateness rating in this treatment is monotonically increasing in the amount received by the charity and peaks at the allocation choice that yields nothing for the dictator and everything for the recipient ($0, $20). The right panel of Table F8 presents the mean, standard deviation and the distribution of appropriateness rating for treatment 2 – where the recipient is a student. In this treatment, the appropriateness rating is increasing in recipient's earnings for all allocations that do not result in a dictator payoff that is lower than the recipient. The mean appropriateness rating decreases for any allocation choice that yields a lower payoff for the dictator than the recipient. Accordingly, the most appropriate action in this treatment is to equally divide the endowment, whereas in the charity treatment the most appropriate action is to transfer all of the endowment to the recipient.

The second to last column in Table F8 reports paired t-tests between the norm ratings for each giving level across treatments. All t-tests are statistically significant at p¡0.01. In the last column of the table, we present results from a Wilcoxon rank-sum test comparing the distribution of ratings between the two treatments. The test shows that the distribution of appropriateness rating differs between the two treatments across each allocation choice. These results put into perspective the pronounced difference in the social norms of giving to a charity versus a fellow student. All allocation choices that yield lower payoff for the recipient are considered inappropriate in the

charity treatment. More than 50% of our subjects rate these choices as inappropriate. In the second treatment where the recipient is another student, only the choices that strongly favor the dictator (shares $0 - $6 out of $20) are considered strongly inappropriate.

Note that the highest mean rating for the charity treatment is 0.91 for donating the full endowment to the charity, while in the student treatment the highest mean rating is 0.89, for the 50/50 split, indicating that nearly all subjects agree on the appropriateness of these actions. These mean ratings are not only the highest, but are nearly identical. Clearly there is strong agreement on these actions.

In the charity treatment, subjects are better able to match their responses to that of the group for the appropriateness ratings of other actions. In most cases, more than 50% of all participants generally agree on the appropriateness rating of different alternative choices. On the contrary, in the second treatment, there is less agreement about the appropriateness of allocation choices that strongly favor the recipient. This indicates that our subjects agree somewhat more strongly about what the norm is when the recipient is a charity rather than another student.

Table F8 Summary statistics of norm ratings under student and charity treatment

Charity Treatment (N=358)

Potential Allocations	Action	Mean	SD	VI (%)	SI (%)	SA (%)	VA (%)
20,0	Give $0	-0.78	0.48	78	13	5	3
18,2	Give $2	-0.68	0.53	67	22	8	4
16,4	Give $4	-0.54	0.57	52	32	12	4
14,6	Give $6	-0.35	0.58	33	44	17	6
12,8	Give $8	-0.11	0.62	20	39	30	12
10,10	Give $10	0.33	0.58	6	21	42	32
8,12	Give $12	0.44	0.55	4	15	42	39
6,14	Give $14	0.54	0.53	4	9	39	48
4,16	Give $16	0.65	0.52	4	5	30	61
2,18	Give $18	0.74	0.50	4	4	19	73
0,20	Give $20	0.91	0.33	2	1	6	91

Student Treatment (N=358)

Potential Allocations	Action	Mean	SD	VI (%)	SI (%)	SA (%)	VA (%)	T Statistic	Wilcoxon Sign Rank Test
20,0	Give $0	-0.67	0.50	62	29	5	3	3.777***	4.292***
18,2	Give $2	-0.58	0.50	51	39	8	3	3.034***	3.309***
16,4	Give $4	-0.44	0.51	35	48	13	3	2.981***	3.172***
14,6	Give $6	-0.17	0.50	13	54	28	5	5.137***	4.931***
12,8	Give $8	0.23	0.46	3	25	58	14	9.561***	8.834***
10,10	Give $10	0.89	0.29	1	1	13	85	17.109***	13.541***
8,12	Give $12	0.55	0.48	2	8	44	46	3.342***	3.750***
6,14	Give $14	0.36	0.60	5	22	35	37	-4.686***	-4.624***
4,16	Give $16	0.23	0.71	14	23	27	36	-9.993***	-8.958***
2,18	Give $18	0.18	0.76	20	20	24	37	-12.690***	-10.755***
0,20	Give $20	0.14	0.82	27	15	20	38	-17.704***	-13.664***

Notes: ***p < 0.01

VI refers to "Very Inappropriate"; SI to "Somewhat Inappropriate", SA to "Somewhat Appropriate" and VA to "Very Appropriate".

Percentages may not sum to 100 due to rounding-off.

In Figure F8, we overlay the mean appropriateness rating of each allocation choice over the distribution of dictator transfers in both treatments. As seen in the figure, the modal behavior in each of the two treatments coincides with the peak of mean appropriateness rating. In the charity treatment, the mean appropriateness rating hits the apex at ($0, $20). This allocation choice yields $0 for the dictator and $20 for the recipient: 50% of all subjects in the charity treatment gave away all their endowment ($20), and another 28% chose an allocation that was at least as favorable to the recipient as themselves. In the student treatment, the mean rating peaks at ($10, $10) which yields $10 each for the dictator and the recipient: 40% of subjects chose ($10, $10) as their preferred allocation in this treatment.

Note that in both treatments, subjects maximize their monetary payoff by keeping the $20 for themselves. However, this payoff-maximizing allocation ($20, $0) is considered more inappropriate when the recipient is a charity than when it is another student. This difference in appropriateness rating is reflected in the distribution of dictator allocations between the two recipients at ($20, $0) allocation choice in that more subjects chose this allocation in the student treatment than the charity treatment. Around 1/4 of subjects chose to share nothing with the recipient in the student treatment versus only 12% in the charity treatment. Note that this happens even though there is only a small difference in the appropriateness rating of the allocation choice ($20, $0) between the two treatments: -0.78 in the charity treatment vs. -0.67 in the student treatment. This may occur due to high cost of choosing a more appropriate action for individuals with strong self-interest motive. In other words, these individuals are aware that their action is not "socially appropriate" but are unwilling to bear the cost of taking a more appropriate action.

The equal-split allocation of ($10,$10) also has remarkably different norm ratings between the two treatments (0.33 in charity v. 0.89 in student). This consideration is noticeable in the distribution of dictator allocation where only 3 out of 358 subjects chose an allocation more favorable to the recipient in the student treatment.
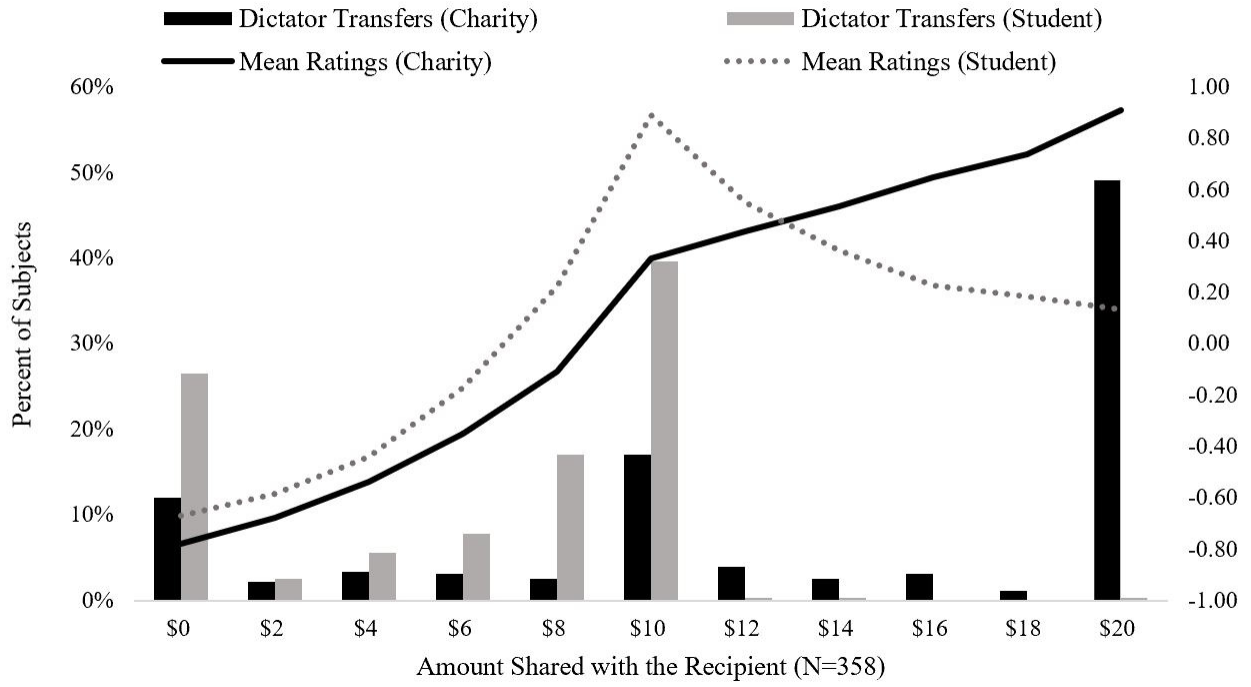
Fig. F8 Distribution of dictator transfers and mean norm ratings in both treatments

Table F9 Conditional logit regression estimates of choice determinants

	(1)	(2)
Monetary Payoff (β)	0.19***	0.32***
	(0.01)	(0.02)
Appropriateness Rating (γ)	2.40***	2.61***
	(0.11)	(0.15)
Monetary Payoff		-0.01
x Charity Treatment		(0.01)
Appropriateness Rating		2.22***
x Charity Treatment		(0.17)
Log-likelihood	-1758.78	-1678.11
Observations	7,876	7,876

*Note: ***p < 0.01.*

Columns 1 and 2 in Table F9 present parameter estimates for the Krupka and Weber (2013) utility framework given by equation 2: Krupka-Weber Model. In column 1 of Table F9, the estimated coefficients for both Monetary Payoff and Appropriateness Rating are positive and statistically significant. This implies that individuals put a positive weight on both attributes when making their choice – they care about their own earnings, as well as conforming to the social norm.

In column 2 of Table 3, we add two interaction terms - one that interacts the variable Monetary Payoff with the charity treatment and another that interacts the Appropriateness Ratings with the charity treatment. These two terms allow us to investigate any differences in marginal utilities from payoffs and the degree of appropriateness between the two treatments. While the payoff interaction term is statistically insignificant, the norm interaction term is positive and significant. There is also a positive change in the coefficient associated with monetary payoff in column (2) when the interaction terms are included.

To test the model in predicting the giving behavior, we calculate the probability distribution of dictator transfers for both treatments using the estimated coefficients for each model. Figure F9 and Figure F10 compare the predicted choice frequencies and the observed choice frequencies for the charity treatment and the student treatment, respectively. In Figure F9, we see that our model does not predict behavior well when the recipient is a charity. In particular, the model fails to predict the fact that a large proportion of subjects donated their entire endowment to the charity (49% of all participants).
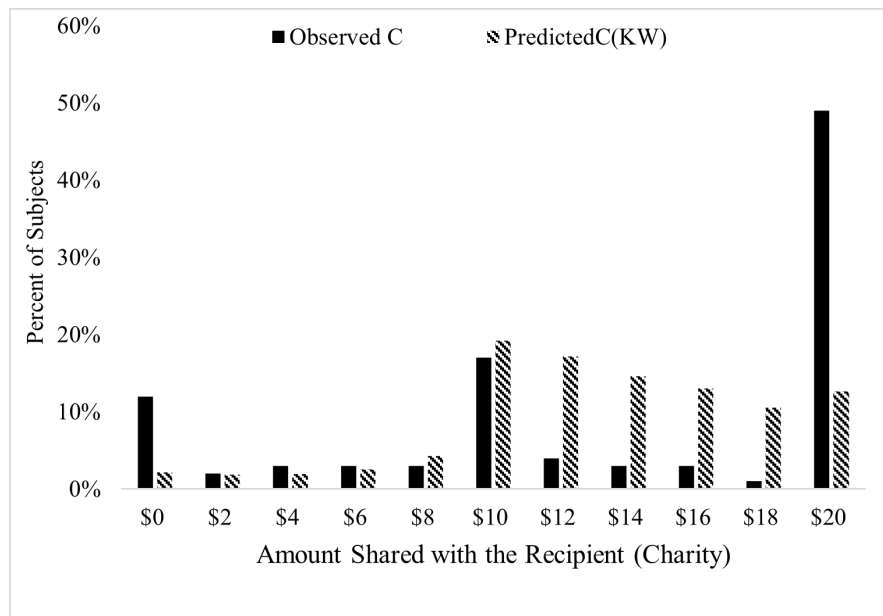
Fig. F9 Comparison of distribution of dictator transfers between models (charity). Predicted C(KW) is based on the Krupka-Weber framework given by Equation 2.

In Figure F10, we present the comparison of predicted and observed choice frequencies for the student treatment. Again we find that the model performs well at predicting behavior.
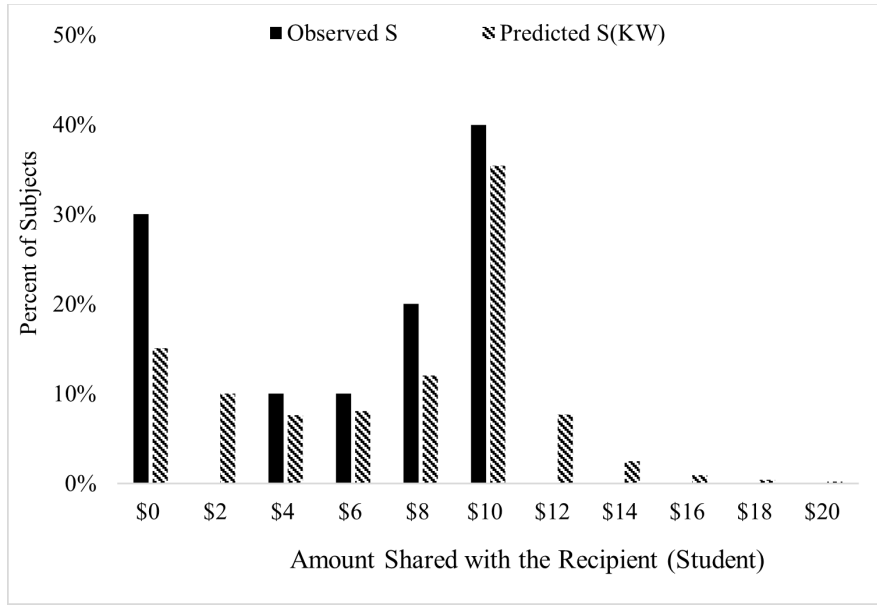
Fig. F10 Comparison of distribution of dictator transfers between models (student). Predicted S(KW) is based on the Krupka-Weber framework given by Equation 2.

F.1 Instructions for Additional Experimental Study

Des

This is a continuation of a study that you have participated in previ
take the time to complete this wave As before. you can earn mon

There are two parts to this study Part 1 includes Seven Tasks. Tas
asks for your opinion In Tasks 1-6 you will have a chance to earn
people.

In Part 2 of this study, I am interested in your communication with
and you will have a chance to earn additional money by communic
will be kept confidential.)

Risks a

There are no risks to participating in this study, over and above tho
will have a chance to earn money. You will also have an opportunit
decisions.

Costs an

The activity will take approximately 15 minutes to complete There
$3 00 or as much as $130 00 for this wave of the study

Confi

No identifying information will be collected. except for a random ID

Right Id

As with all waves of this study, your participation is voluntary You

IRB A

Australians are reeling from the hundreds of devastating fires sweeping through parts of the country. Since October 2019, the wildfires have scorched millions of acres of land and destroyed more than a thousand homes. At least 27 people have died. But perhaps the greatest damage is to wildlife. An estimated 1 billion animals have been lost, and scientists fear long-term damage to many sensitive ecosystems. With people displaced and wildlife populations gutted, there are ways that you can help.

In this task, you have an opportunity to donate money to a charity helping with the Australian wildfires. You will have a chance to choose a charity on the next screen. For this task, you have been given an endowment of $20. You are asked to allocate the $20 between yourself and your charity of choice.

You must decide how much of the $20.00 to keep for yourself and how much to pass to your selected charity. You may elect to keep it all for yourself and give nothing to the charity, keep nothing for yourself and pass it all to the charity, or keep some for yourself and pass the remainder to the charity. The charities available to you are explained on the next screen.

If this task is selected for payment, whatever you elect to keep (if anything) you will be paid to you and whatever you elect to give to the charity (if anything) will be sent to the charity you choose. The experimenter will forward the funds to the charity, using their donation website. You will have an opportunity to contact us when the study is over if you would like us to provide you with verification that the donation was made.

Fig. F12 Dictator transfer (recipient is a charity)

In Task 3 you are paired with a charity of your choice. Following is a
to be paired with by checking the button next to your

Your Choice	T
	Australian Red Cross The Australian Red Cross is accepting do which has helped to send 1,285 staff mem the fires and to provide support to displace and recovery centers. The Red Cross also their immediate needs.
	NSW Rural Fire Service The most affected state, New South Wale having its worst fire season in 20 years. F brigades are in the thick of it. The fire serv clusters of fire spots stretching along a sw directed to emergency efforts and noneme
o	**RSPCA New South Wales** New South Wales has the most injured an organization's bush fire appeal will suppor South Wales and other areas. Once fire z areas to assess how to help any injured a

You chose the RSPCA New S

Please make your alloc

To make a decision, click the button next to th

You Keep	RSPCA New South
Gets
$20	$0
$18	$2
$16	$4
$14	$6
$12	$8
$10	$10
$8	$12
$6	$14
$4	$16
$2	$18

In Tasks 1 and 2 you will read descriptions of different decision situations. These describe situations in which one person, whom we will call Individual A, makes a decision. For each situation, you will be given a description of the decision faced by Individual A. This includes several possible choices available to Individual A.

After you read the description of the decision, you will be asked to evaluate the different possible choices available to Individual A and to decide, for each choice, whether doing so is *socially appropriate* and *consistent with moral or proper social behavior* or *socially inappropriate* and *inconsistent with moral or proper social behavior*. By socially appropriate, I mean behavior that most people agree is the *correct* or *ethical* thing to do. Another way to think about what I mean is that if Individual A were to select a socially inappropriate choice, then someone else might be angry at Individual A for doing so.

Fig. F15 Norm elicitation task (general introduction)

As an example, suppose Individual A observed Individual B cheating on an exam. This is a clear violation of the Honor Code. Individual A decides not to report Individual B. On a four point scale you are asked whether this is *socially appropriate* or *socially inappropriate*.

In your responses, I would like you to answer as truthfully as possible, based on your opinions of what constitutes socially appropriate or socially inappropriate behavior.

Fig. F16 Norm elicitation task (general introduction)

In order to determine your payment for the decisions in Tasks 1 and 2, your response for each situation will be compared with the responses of **other study participants in your college**. If you select the same response as the one most frequently given by other participants in your college, then you will receive $3. If you do not match the most common response you will receive $0. The total amount will be paid to you at the conclusion of the study.

For instance, if the most common response of people in your college was that violating the honor code was *Very Socially Inappropriate* and IF you also chose that response then you would receive $3.00. Otherwise you would receive $0.00.

If you are ready to begin, click CONTINUE.

Fig. F17 Norm elicitation task (general introduction)

You will now begin Task 4.

For Task 4 I ask you to assess the social appropriateness of the p
we ask you to consider another person in Sid, who has made an a

Consider the following situation. There is an individual, A, who is
assisting with the wildfires Individual A has $20 to allocate betwe
for himself/herself. and how much to give to the charity.

A can make any of 11 possible allocations. You will be asked, for
appropriate or not.

In Task 3 there are 11 different allocations. If this Task is chosen f
your response will be compared with the **other study participant**
frequently given by other participants in your college, then you wi
you will receive $0.

Fig. F18 Norm elicitation task (recipient is a charity)

For each row please evaluate the social appropriateness of the acti[...]
the row below. Pleas[...]

Keep in mind tha[...]

A Keeps	Charity Gets	Very Socially Inappropriate	Som[...] Soc[...] Inappro[...]
$20	$0		o
$18	$2		
$16	$4		
$14	$6		
$12	$8		O
$10	$10		o
$8	$10		o
$6	$14	o	
$4	$16		o
$2	[3]$18		
$0	$20		

Please read the:

In this task you will allocate a fixed amount of money between yourself an
be paid as a decision maker, or as a recipient of someone else's decision. Y
not know the identity of your count

If your role is the decision maker, then a recipient will be randomly selecte
study. You will receive the amount that you keep from this decision, and

If your role is the recipient, you will be randomly assigned to a decision
decision will determin

You will also be asked to gues

Fig. F20 Dictator transfer (recipient is a student)

You have a total of $20.00 to alloc
and the recipient. There are no rig
You may choose whatev

Please select one of the ch

Allocation to Me	Your Choice:
$20.00	
$18.00	
$16.00	•
$14.00	
$12.00 ₃₈	

For Task 1 you have the following situation. There are 2 individuals: A, and B. A has $20 to allocate between himself/herself and individual B. Both A and B are students at Rice, and both are aware of this. However, neither knows the identity of the other. A must decide how much to keep for himself/herself, and how much to pass to B. A's decision determines the earnings of both individuals.

A can make any of 11 possible allocations. You will be asked, for each possible allocation, whether that allocation by A is socially appropriate or not.

In Task 1 there are 11 different allocations. If this Task is chosen for payment, 3 of these allocations will be randomly selected. For each your response will be compared with the **other study participants in your college.** If you select the same response as the one most frequently given by other participants in your college, then you will receive $3. If you do not match the most common response then you will receive $0.

Fig. F22 Norm elicitation task (recipient is another student)