

Online Appendix B: Experiment details and results

Preheating prosocial behaviour

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B.1 Experimental design

Given challenges of disentangling generosity from tweeting behaviour in our empirical setting, we design an incentivised online experiment that allows us to isolate the donation decision, thus ruling out alternative explanations. To maintain close comparability with our primary empirical study, we recruit participants from our original population: Twitter users who have tweeted recently about their acts of charitable giving. It is important to maintain the same study population, as this allows for closer comparability with our observational study and also helps ensure greater realism and consequentiality than a stylised laboratory experiment. We identify all users who have posted the #iloveWikipedia hashtag during 2021 and invite them to participate in the experiment through a direct message on the Twitter platform. Our final sample is limited by several factors: the size of the population that posted the hashtag during this time frame, the fact that many users block the direct messages from accounts that they do not follow, and response rates.¹ Thus, we further expand the sample to include any users who have tweeted “I just donated” in the same time frame. We include the “I just donated” population, which is a superset of the original #iloveWikipedia tweet, to expand our recruitment population without sacrificing recency.²

Users are sent a recruitment message that includes a general description of our study and a link to a Qualtrics study: *“Hello! We would like to invite you to complete a short (<10 min.) survey about charitable giving because you tweeted about this topic in the past year. This survey is part of an academic study from researchers at Georgia Tech and UMass Amherst. You will have the opportunity to earn up to \$50 for completing this survey. Please follow the link in our Twitter profile if you are interested in participating or to learn more about the study.”* After providing informed consent, they complete a series of survey tasks. The first task seeks to induce a positive or neutral mood using two different 4-minute video clips. Subjects are randomly assigned to view one of the two video clips. Those assigned to the positive mood inducement watch the animated

¹Overall, we sent approximately 40,000 direct messages to Twitter users through an automated R script and roughly 11,500 were received by users. Our response rates from these successful messages was approximately 1.5%. Low response rates in this range are understandable given the nature of online recruitment, which many users believed to be a potential scam.

²For practical reasons, we could not indiscriminately disseminate the survey. Doing so would invite rent-seeking behaviour from opportunistic users or bots, who fill out many surveys to earn larger payments. Thus, we limited the eligible participant group according to the user characteristics and time frames described above. In fact, 25 respondents completed the survey but were not in our original recruitment pool, either because they found the survey link organically or because they failed to supply a Twitter handle that matched our recruitment list. As a result, we present results with and without these respondents.

music video for “Hakuna Matata” from Disney’s *Lion King*; those in the neutral mood inducement watch a science video about microbes from the YouTube series *Journey to the Microcosmos*. Videos of this sort have been shown to successfully induce moods in prior research (Capra, 2004; Kirchsteiger *et al.*, 2006; Drouvelis and Grosskopf, 2016; Hanley *et al.*, 2017; Marcusson-Clavertz *et al.*, 2019), and mood inducements, more generally, have been used in prior economic studies (Capra, 2004; Capra *et al.*, 2010; Drichoutis and Nayga, 2013).

After completing the mood inducement, we elicited subjects’ affective state using the mood index of Batson *et al.* (1988). Like Konow (2010) and others, we reduce the mood index to two Likert scales: 1 (“bad mood”) to 9 (“good mood”) and 1 (“depressed”) to 9 (“elated”). Other work has done similarly; for example, Capra *et al.* (2010) use a single slider with endpoints of “very happy” or “in a very good mood” and “very unhappy” or “in a very bad mood.” These subjective mood elicitation questions, and variations thereof, are commonplace in psychological research (Batson *et al.*, 1988; Watson *et al.*, 1988; Mackinnon *et al.*, 1999; Marcusson-Clavertz *et al.*, 2019) and have also been used in economics studies (Konow and Earley, 2008; Konow, 2010; Capra *et al.*, 2010; Drichoutis and Nayga, 2013; Hanley *et al.*, 2017). Our results indicate that the mood inducement was successful, with significant differences in mood across treatments of approximately 0.9–1.0 points on the Likert scale (Table B2).

Upon completion of the mood inducement and elicitation, subjects were asked to complete a charitable dictator game in which they divide \$50.00 USD between themselves and a named charity. Subjects were informed that 10% of surveys would be selected in a prize drawing; if their survey was selected in the prize drawing, they, and the named charity, would be paid according to their decision in the charitable dictator game. Thus, this was a consequential, incentivised task with nontrivial stakes. For users who tweeted the #iloveWikipedia hashtag, the named charity was the Wikimedia Foundation. For those who tweeted the generic “I just donated” string, we first asked subjects to choose a preferred charity from a list that includes Oxfam, Red Cross, Save the Children, the World Wildlife Fund, the Wikimedia Foundation, and Doctors without Borders. Their choice would then become the named charity for the charitable dictator game task. This procedure follows prior work by Crumpler and Grossman (2008), Gangadharan *et al.*

(2018), and Gandullia *et al.* (2020), among others. The charitable dictator game was followed with another mood elicitation using the same two Likert scales described above.

The study then concluded with the collection of additional demographic information and contact information (email address and Twitter username) in case the subject's survey was drawn for payment. Notably, because we could not prevent subjects from sharing the survey link with others (or tweeting it out to their followers), we analyze a more restrictive set of users whose reported username matched our list of recruited usernames. This group is the "Twitter recruitment only" subset that we use to generate results. Only respondents who shared both pieces of contact information (and matched our recruitment sample) were entered into the drawing. Payment was conducted in two waves within several weeks of participation. Payouts were processed via Amazon giftcards and donation receipts were shared with participants via email.

Besides collecting these pieces of information, we also encouraged subjects to tweet about their experience with the following text, which was modeled after the text from Wikipedia's fundraising campaign: *"I just completed a research survey, and my participation may help provide financial support for charity. #supportresearch #supportcharity."* We prompted them with this text on the final survey screen, as well as on the thank-you screen that follows final submission of the Qualtrics survey. By manually searching for the hashtags *"#supportresearch #supportcharity"* on Twitter, this prompt allows us to identify directly whether there are between-treatment differences in the propensity to tweet about a prosocial action as a result of our randomised mood inducement. 20% of respondents in the positive mood inducement tweeted this prompt, whereas 27% of respondents in the neutral mood inducement tweeted this prompt. Full screenshots from the primary survey tasks are available in Appendix B.3.

Prior to data collection, ethical approval was obtained from the Georgia Institute of Technology Institutional Review Board (Protocol H21411).

B.2 Experimental results

Table B1: *Summary statistics from survey of Twitter users.*

	Mean	SD	Median	Min.	Max.	N
Neutral Treatment						
Mood (before donation)	5.97	1.60	6	2	9	63
Feel (before donation)	5.08	1.41	5	2	9	63
Donation amount	38.89	14.99	50	0	50	63
1[Donated all 50 dollars?]	0.57	0.50	1	0	1	63
1[Tweeted #SupportResearch]	0.27	0.45	0	0	1	63
1[#iloveWikipedia Sample]	0.22	0.42	0	0	1	63
Positive Treatment						
Mood (before donation)	6.93	1.50	7	3	9	82
Feel (before donation)	6.07	1.72	6	1	9	82
Donation amount	41.71	13.15	50	5	50	82
1[Donated all 50 dollars?]	0.68	0.47	1	0	1	82
1[Tweeted #SupportResearch]	0.20	0.40	0	0	1	82
1[#iloveWikipedia Sample]	0.18	0.39	0	0	1	82

Notes: Summary stats by treatment. “Mood” and “Feel” are based on two 9-point Likert scale: 1 (“bad mood”) to 9 (“good mood”) and 1 (“depressed”) to 9 (“elated”). Donation amounts could take any value, up to two decimal points, from \$0.00 to \$50.00.

Table B2: *Impact of positive mood induction on “Mood” and “Feel” of Twitter subjects*

	Mood			Feel		
	(1)	(2)	(3)	(4)	(5)	(6)
1[Positive Treatment]	0.89*** (0.24)	0.96*** (0.26)	0.96*** (0.26)	0.82*** (0.25)	0.99*** (0.27)	1.00*** (0.27)
1[#iloveWikipedia Sample]			-0.02 (0.32)			0.03 (0.33)
Observations	170	145	145	170	145	145
R ²	0.08	0.09	0.09	0.06	0.09	0.09
Twitter recruitment only?	–	Y	Y	–	Y	Y

Notes: Dependent variable is subjective affect on a 9-point Likert scale. Robust standard errors clustered at the user level presented in parentheses. ***, **, and * represent statistical significance at the $p < 0.01$, $p < 0.05$, and $p < 0.10$ levels.

Table B3: *Impact of positive mood induction on donation behaviour of Twitter subjects*

	Donation amount (dollars)			Donated all 50 dollars?		
	(1)	(2)	(3)	(4)	(5)	(6)
1[Positive Treatment]	2.07 (2.22)	2.82 (2.34)	2.66 (2.34)	0.10 (0.07)	0.11 (0.08)	0.10 (0.08)
1[#iloveWikipedia Sample]			-4.11 (2.89)			-0.18* (0.10)
Observations	170	145	145	170	145	145
R ²	0.01	0.01	0.02	0.01	0.01	0.04
Twitter recruitment only?	–	Y	Y	–	Y	Y

Notes: Dependent variable is donation amount or a binary measure of whether the subject donated their entire \$50.00 budget. Robust standard errors clustered at the user level presented in parentheses. ***, **, and * represent statistical significance at the $p < 0.01$, $p < 0.05$, and $p < 0.10$ levels.

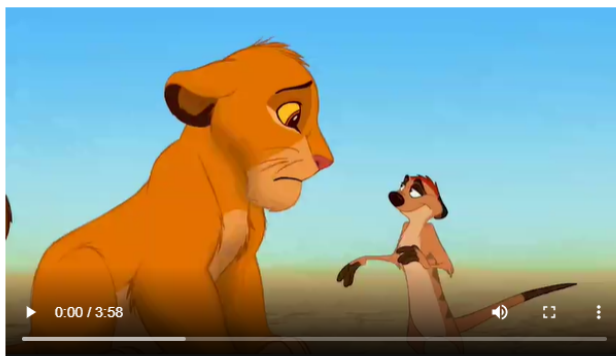
Table B4: *Impact of positive mood induction on likelihood of posting our tweet prompt for #Support-Research*

	Tweeted #SupportResearch	
	(1)	(2)
1[Positive Treatment]	-0.07 (0.07)	-0.07 (0.07)
1[#iloveWikipedia Sample]		0.14 (0.09)
Observations	145	145
R ²	0.01	0.03
Twitter recruitment only?	Y	Y

Notes: Dependent variable is a binary outcome of whether the subject posted our tweet prompt: "I just completed a research survey, and my participation may help provide financial support for charity. #supportresearch #supportcharity." Robust standard errors clustered at the user level presented in parentheses. ***, **, and * represent statistical significance at the $p < 0.01$, $p < 0.05$, and $p < 0.10$ levels.

B.3 Screenshots of survey instrument

Please take some time to watch the following video in full. Once you have finished, please confirm your completion of the task. The submission button will appear before the video concludes.



☐ I confirm that I have watched the video provided above.

☐ I did not complete the video provided above.

(a) *Positive mood inducement: Hakuna Matata from Disney's Lion King.*

Please take some time to watch the following video in full. Once you have finished, please confirm your completion of the task. The submission button will appear before the video concludes.



☐ I confirm that I have watched the video provided above.

☐ I did not complete the video provided above.

(b) *Neutral mood inducement: Journey to the Microcosmos episode on Heteronema spirale.*

Figure B1: Mood induction tasks. Subjects were asked to view a 4-minute video to induce a positive or neutral mood.

How do you feel right now, on a scale from 1 ("bad mood") to 9 ("good mood")

Bad Mood 1 2 3 4 Neutral Mood 5 6 7 8 Good Mood 9

My mood is...



How do you feel right now, on a scale from 1 ("depressed") to 9 ("elated")

Depressed 1 2 3 4 Neutral 5 6 7 8 Elated 9

I feel...



Figure B2: Mood elicitation prompts. Subjects described their mood using two 9-point Likert scales: 1 ("bad mood") to 9 ("good mood") and 1 ("depressed") to 9 ("elated").

Which of the following charities do you support the most? (see below for information on each)

- ☐ Oxfam
- ☐ Red Cross
- ☐ Save the Children
- ☐ WWF
- ☐ Wikimedia Foundation
- ☒ Doctors without Borders

Charity	Brief Summary
Oxfam	Invests privately raised funds and technical expertise in local organizations around the world that hold promise in their efforts to help the poor move out of poverty; committed to long term relationships in search of lasting solutions to hunger, poverty, and social inequities.
Red Cross	Offers blood donation information and services, disaster relief, many educational classes, and HIV/AIDS support groups.
Save the Children	Promotes children's rights, provides relief, and helps support children in developing countries.
WWF	World Wildlife Fund addresses global environmental issues.
Wikimedia Foundation	Hosts Wikipedia, the free online encyclopedia, created, edited, and verified by volunteers around the world, as well as many other vital community projects.
Doctors without Borders	Doctors and nurses volunteer to provide urgent medical care in some 70 countries to civilian victims of war and disasters, regardless of race, religion, or politics.

Figure B3: Charity selection for subjects who were recruited because they recently tweeted a message with the string “I just donated”. Subjects in this sample were asked to select the charity that they most support, and this charity would subsequently be used for the charitable dictator game task. For our base primary sample of users who tweeted “#iloveWikipedia”, we used the Wikimedia Foundation for the charitable dictator game task.

You will now be asked to complete a decision-making task that involves real money. In this task, you will allocate \$50.00 USD between yourself and Doctors without Borders. At the conclusion of this study, we will conduct a prize drawing in which we select 10% of eligible surveys. If your survey is selected, we will pay you and Doctors without Borders based on your decision in this task.

Please choose the amount of money from your \$50.00 endowment that you would like us to donate to Doctors without Borders on your behalf. **If your survey is selected in the prize drawing, we will make the donation on their online platform, and the remaining money will be sent to you as an Amazon gift card.** The funds for this part of the survey have been provided for the purposes of academic research.

Donate _____ of the \$50.00 to Doctors without Borders and send the rest to me.

Figure B4: *Charitable dictator game.*

Which of the following activities did you complete in this study?

☐ Watched a video about microbes

☐ Watched an animated video

☐ None of the above

What is your gender?

☐ Man

☐ Woman

☐ Non-binary / third gender

☐ Other

☐ Prefer not to say

What is your age? (Please enter "0" if you prefer not to say)

What is the highest level of education you have *completed*? If you are currently enrolled, please indicate the highest degree you have previously received.

☐ Less than a high school diploma

☐ High school degree or equivalent

☐ Bachelor's degree

☐ Master's degree (e.g., MA, MS, MBA, MEng, MEd)

☐ Professional school degree (e.g., MD, DDS, DVM, JD)

☐ Doctorate degree (e.g., PhD, EdD)

☐ Prefer not to say

Figure B5: *Basic survey questions that preceded the experimental tasks.*

Type your full Twitter handle in the box below, including the "@" symbol (e.g., @study_participant). Please use the account where you received the invitation to join this study. We will use your entry to verify that you are eligible for the prize drawing, so please make sure to complete this field and to check your entry for accuracy.

Please provide your email address. We will contact you using this email address if your survey is selected in the prize drawing, so please check your entry for accuracy.

If you decided to give funds to charity today, please consider tweeting about your experience with the following message:

I just completed a research survey, and my participation may help provide financial support for charity. #supportresearch #supportcharity

Figure B6: Participant information to verify eligibility and process payments.

We thank you for your time spent taking this survey.

Your response has been recorded.

If you decided to give funds to charity today, please consider tweeting about your experience with the following message:

I just completed a research survey, and my participation may help provide financial support for charity. #supportresearch #supportcharity

Figure B7: Survey completion page.

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