Effect of the Stage of a Project on Giving Behavior

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Introduction

Individual donations continue to form the bulk of charitable giving ($280bn of $390bn in total for the US) [1]. Therefore the approach to giving by those individuals is a key question for charities wishing to raise funds for their causes.

The mechanisms that influence individual donations will become increasingly important in the coming years as the level of charitable giving by those donors is expected to drop due to changes in the 2018 tax code. These changes double the standard deduction which will reduces the incentive for Americans to give to charity, generating an estimated reduction in giving of $12bn to $20bn each year[2]. Charitable projects must compete against each other ever harder for fewer funds. They will therefore have to evolve in their approach to fundraising, and the projects they prioritize. An understanding of the elements that drive donors giving will be key.

The new large philanthropic organizations, such as the Bill and Melinda Gates Foundation and the Carter Center, advocate for the charitable sector to become more like for-profit companies regarding investment decisions[3] by maximizing *social* return. This is a movement that is being termed "effective altruism"[4]. If individual donors have similar expectations, charities will have to change their funding techniques to continue generating cash-flows for their higher risk projects. One indicator of a high risk project is one that is yet to start.

For-profit companies find it hard to acquire capital for a new a project. An unproven idea, or one that has only been piloted but needs to be scaled up, generates high risk and investors expect correspondingly higher returns. Initial capital injections come at high costs to the company both in terms of time demanded to market the idea, and in returns required from investors. Returns to investors manifest as both interest payments or growth expectations, and as influence over operations. By contrast, an ongoing project that is demonstrating success is seen as a much less risky investment, with lower investor expectations in returns, accordingly. This same risk / return pattern may be exhibited in the "effective altruism" of contemporary individual donors, and, if so, charities would have to adapt their pitch to progress funding of initiatives they deem important.

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[1] Recent tax reforms in America will hurt charities, The Economist February 2018. Retrieved November 2018 from
https://www.economist.com/finance-and-economics/2018/02/15/recent-tax-reforms-in-america-will-hurt-ch arities
[2] See footnote 1
[3] The birth of philanthrocapitalism, The Economist, February 2006,
https://www.economist.com/special-report/2006/02/23/the-birth-of-philanthrocapitalism
[4] Can "effective altruism" maximise the bang for each charitable buck? The Economist, June 2018, retrieved on November 2018 from
https://www.economist.com/international/2018/06/02/can-effective-altruism-maximise-the-bang-for-each-c haritable-buck

Perhaps individual donors acting as effective altruists are less likely to give to charitable projects that have not yet started; holding those projects to a higher standard of expected social return. In contrast, individual donors may be more likely to give to projects that are under way or nearly complete because the projects have already demonstrated successful results and are therefore thought of as lower risk. We are interested in discovering if rational choice theory[5], based on Herbert Simon's rational economic model[6], extends to individual donors charitable giving. However, we believe that, for the majority of individuals, the act of giving is more emotional than rational. We believe other factors may weigh more heavily on the decision to give, such as sympathy for a cause or the suffering of a specific group of people or animals. Rationality is ignored as donors allow their instincts to guide our allocations of funds. Donors gain no hard personal returns from these transactions, only that someone's life is being made easier or the diminution of suffering.

While it has become the norm for the aforementioned major philanthropic organizations, run professionally by business leaders, to conform to disciplined and rational investment decisions, our contention is that, unlike individual investors in stocks and shares, individual charitable donors do not yet consider social returns as rationally as individual investors consider financial returns.

Which leads us to the research question: Does people's intent to give to charity increase as a project moves through its lifecycle?

Literature and research inc. knowledge gaps

The Bekkers and Wiepking[7] paper from 2010 investigates the mechanisms behind charitable giving and includes a thorough review of literature from the past 60 years and included 500 scholarly articles and abstracts. It finds that there are eight mechanisms that motivate people to give, awareness of need; solicitation; costs and benefits; altruism; reputation; psychological benefits; values; efficacy.

The Cost and Benefits mechanism and the Efficacy mechanism are the closest to the behavior that we are most interested in, but the paper notes that there have been no experiments identified that manipulate either mechanism. The efficacy also focuses on the effectiveness of the organization itself, which we are not going to be investigating.

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[5] Understanding Contemporary Society: Theories of The Present, edited by G. Browning, A. Halcli, and F. Webster. (Sage Publications, 2000) retrieved on November 17th 2018 from https://www.sisd.net/cms/lib/TX01001452/Centricity/Domain/170/Rational%20Choice%20Theory%20Reading.pdf

[6] A Behavioral Model of Rational Choice, Herbert Simon 1955, The Quarterly Journal of Economics, Vol. 69, No. 1. (Feb., 1955), pp. 99-118. Available at http://links.jstor.org/sici?sici=0033-5533%28195502%2969%3A1%3C99%3AABMORC%3E2.0.CO%3B2-A

[7] Bekkers, R. Wiepking, P. A Literature Review of Empirical Studies of Philanthropy: Eight Mechanisms That Drive Charitable Giving, 2010. DOI: 10.1177/0899764010380927. Available from https://journals.sagepub.com/doi/10.1177/0899764010380927

An additional survey by The Conversation[8] also explores the reasons people give to charity, but this was executed via survey and therefore may not be experimentally sound. Those five reasons identified were trust in the institutions, altruism, social conforming (giving to causes important to family, friends or colleagues), favorable tax treatments, personal gain (termed egoism in the article). Again, we find no explorations of the propensity for individual donors to exhibit the 'effective altruism' that we are are most interested in.

Research hypothesis

Given a fixed value to distribute between 3 similar aid projects, our expectations are that those projects closer to completion will get a greater assignment of money.

> Null Hypothesis: H(0) The status of an aid project will have no effect on the donor's allocation of funds.
> Alternative Hypothesis: H(1) Aid projects with various statuses will be allocated differing funding levels.

Summary of experimental design

Experimental Setup

The researchers plan to contribute to charity for the holidays, and we used this giving as a basis for our experiment. We developed a survey to allow subjects to assign the $500 that we plan to give across 3 projects, one in each stage of development. Subjects were grouped to receive one of 3 lists of projects. Each list had the same projects, but their statuses were alternated between non-started, under way or nearly done. Each list of projects had one project in each status.

As this is each subjects opportunity to influence where the contribution will be assigned, we believe there will be some motivation in the assignment. As there may be some more thought given to their own funds being allocated, this may also be a source for imperfect external validity, but we believe that there will be some consideration when providing input to our allocation and enough to provide some strong indications of preference.

Three projects were carefully selected from the Carter Center[9] health programs that could be described in a way that made them broadly homogeneous. The diseases all affected children, were all in Sub Saharan Africa, were all treatable for relatively small amounts of money per treatment and they all impacted rural communities.

Our goal was to create a within person study so as each subject would receive multiple treatments and control. The objectives are achieved by the factorial design as, similar to the

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[8] 5 reasons why people give their money away – plus 1 why they don't, 2017, retreived on December 9th 2018 from
https://theconversation.com/5-reasons-why-people-give-their-money-away-plus-1-why-they-dont-87801
[9] The Carter Center Health programs. https://www.cartercenter.org/health/index.html

Bertrand and Mullainathan study[10], the subject receives one of three experimental groupings and as each grouping is uncorrelated by design, this makes interpretation straightforward. This helps to increase statistical power as each person demonstrates evidence of a preference for one specific stage of a project. As opposed to the Bertrand and Mullainathan study, where subjects received multiple real CV's along with the 2 sent by the researchers, the subject in our study received only our charities to assign funds to. Following the presentation of our results, we will discuss why this experiment fails to discern a causal link.

Pilot study

In order to better present the projects to our subjects and be sure that the status was noticeable but not blatant, we completed some pilot studies. The projects were briefly described using four formats in an effort to not make the project status overt, but to make it noticable. A single description was provided to each of a small sample (less than 20) of people, who were asked to think out loud, describing their cognitive efforts in deciding how to assign the money. We used a rapid prototyping technique to find a format of the survey where status even considered by our subjects. None of the other formats generated any cognizance in our subject of the status of the project during the exercise of assigning the value. To confirm the selection, we measured their cognizance of project status using a manipulation check question at the end of the survey.

The pilot study subjects could not be included in the experimental subject group as they were not connected to the teams social media networks thereby avoiding maturation threat.

Some covariates were selected for capture in the survey to demonstrate balance in assignment to the groups, and to use as controls in analysis. We captured gender, age range, education level and the country that a subject was born. Qualtrics also provides the location of the IP address.

Once the survey was prepared, we solicited a small number of users to test the functionality and ensure this worked.

Determining the statistical power of the experiment from the pilot study

The statistical power of an experiment is the probability of rejecting the null hypothesis conditional on the alternative hypothesis being true. For example a power of 0.8 means that 80% of the time, there would be a statistically significant difference between the treatment and control groups. The complement holds true as well: 20% experimental runs will not obtain a statistically significant effect, even if the effect was present. There are several reasons that a power analysis should be performed prior to the execution of an experiment. One compelling reason is that a power calculation will prescribe the number of subjects needed to detect an effect of a given size.

We performed the power analysis using data gathered in our pilot study . We picked one project and only one treatment and performed a simulation to calculate power from the min and max

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[10] Bertrand, M. Mullainathan, S. Are Emily and Greg More Employable Than Lakisha and Jamal? A Field Experiment on Labor Market Discrimination, 2004.

effect size that we had generated   A 't.test' was used to test for the difference in mean donations and we discovered we would need a sample size of 1000 to achieve a power of 66.3 with 1000 replications. The approach to subject selection, and the time constraints of the course, make it unlikely that over 1000 responses can be identified gathered, and therefore our results may need to form a basis of a study with an approach that garners more subjects to treat.

Table 1. Results from the Pilot Study showing the funding amounts designated for the control group ("planned" projects) and the treatment group ("near complete" projects).

Control	100	250	150	100	167	100	200	150	200	100	Min Effect	Max Effect
Treatment	200	150	250	100	100	166	300	100	200	250	-67	150

Participants

Subjects that chose to take part in the survey were requested to complete the assignment of funds via a qualtrics survey. Subjects were contacted using a post from us in their social media news feeds. We felt that those motivated to give to charity themselves would be motivated to help us with our allocation, and therefore the population contributing to the experiment would be those whose behaviour we would be most interest in.

We systematically allocated one of three surveys to each participant by birth month, while not universally considered true randomization,[11] [12] [13] we believe it is an an acceptable form of assignment in this instance. As all those with a birthday recently or upcoming will be in the same group, there may be some heterogeneity introduced between the groups. However, each subject will still be requested to assign funds to the three projects (one in each stage) and we do not believe that being in the vicinity of your birthday will generate a strongly different opinion on project stage, the African countries used or the specific diseases, than at any other time of year. Using a set donation amount ($500) also helps eliminate these affects. The other implication from the suggestion that people are more willing to donate when nearing their birthday would be that people with upcoming birthdays are more likely to participate in our survey, however our results show that the number of subjects in each group was not markedly different, which suggests that this did not occur.

Clearly, the participants recruited through our social and professional online networks should not be considered a representative cross section of society. Any findings should be considered indicative, perhaps providing evidence for some further study. The use of social networks also risks the non interference assumption as it is possible that our friends and contacts on social media will communicate with each other and influence each other's donation behavior. The

[11] Joseph Dettori, The random allocation process: two things you need to know, 2010, retrieved on November 17th 2018 from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3427961/
[12] Lars Bondemark Sabine Ruf, Randomized controlled trial: the gold standard or an unobtainable fallacy?, European Journal of Orthodontics, Volume 37, Issue 5, 1 October 2015, Pages 457–461, July 2015, retrieved on November 17th from https://academic.oup.com/ejo/article/37/5/457/2599978
[13] Martin Bland and Janet Peacock. Notes on randomisation in clinical trials, 2002, retrieved November 17 2018 from https://www-users.york.ac.uk/~mb55/guide/RAND.HTM

short period of time that the survey was available should limit this effect, along with the relatively unlikely prospect of a general bias towards a specific project identified.

Note that the experimental procedure meets the exclusion restriction by maintaining parallelism in the administration of the experiment. All three groups received the same survey questionnaires and the data was gathered at the same time under similar conditions.

Additionally, the research methodology demonstrates high internal validity. The same survey was provided to the same subjects within the same time period using the same administration method.

Note on limitations of unsupervised survey

Even though unsupervised surveys are efficient for collecting data from a large and geographically dispersed population and have a lower chance for researchers to influence the outcome of individual subjects differently, they are however dependent upon the subjects honesty and motivation when answering. Misinterpretations and data entry errors are more likely to exist than if a researcher was guiding a subject though the process. Additionally, it can be more difficult to ensure that a fair representation of those in the population of interest have responded.

Survey execution

The survey launch was staggered by researcher to ensure there were no additional issues in deployment. Each researcher launched the survey with the same text, on different days from November 11th to November 16th. We planned to collect input until November 24th to provide enough time for analysis and captured as many surveys as possible until that point. The survey period was limited to between 8 and 14 days in each of our social media accounts which avoided history threat.

Results and Discussion

Survey Response Analysis

A total of 144 surveys were reported as responded to by qualtrics, but 43 of the surveys were almost completely unanswered with no data capture available. This is a form of attrition, or missingness. While it is hard to really be sure, we do believe that this missingness is independent of potential outcomes (MIPO). We believe that this was a technical issue with the link that failed to load the page first time, or that a submitter clicked twice on the link in error and opened two sessions. These 43 surveys have been disregarded, leaving 101 surveys that were usable. It is hard to rule out, however, that this may have been an issue affecting a corpus of potential survey takers, for example those with older devices or from an older version of a browser. If this is the case, we might have a MIPO | X. This corpus are likely to have different opinions, and therefore if this is the case, we may have biased our population. Additionally, our estimate that the invitation to participate was seen by approximately 1500 people, yet only 10% clicked on the link suggests a culling of our population to a likely biased group (those more

interested in aid work, those more likely to help others, or those more invested in the success of the researchers).

Not all respondents allocated the whole $500 among the charities in the survey. To make the data consistent we normalized each respondent's total donation to $500 to make each subject's donation comparable.
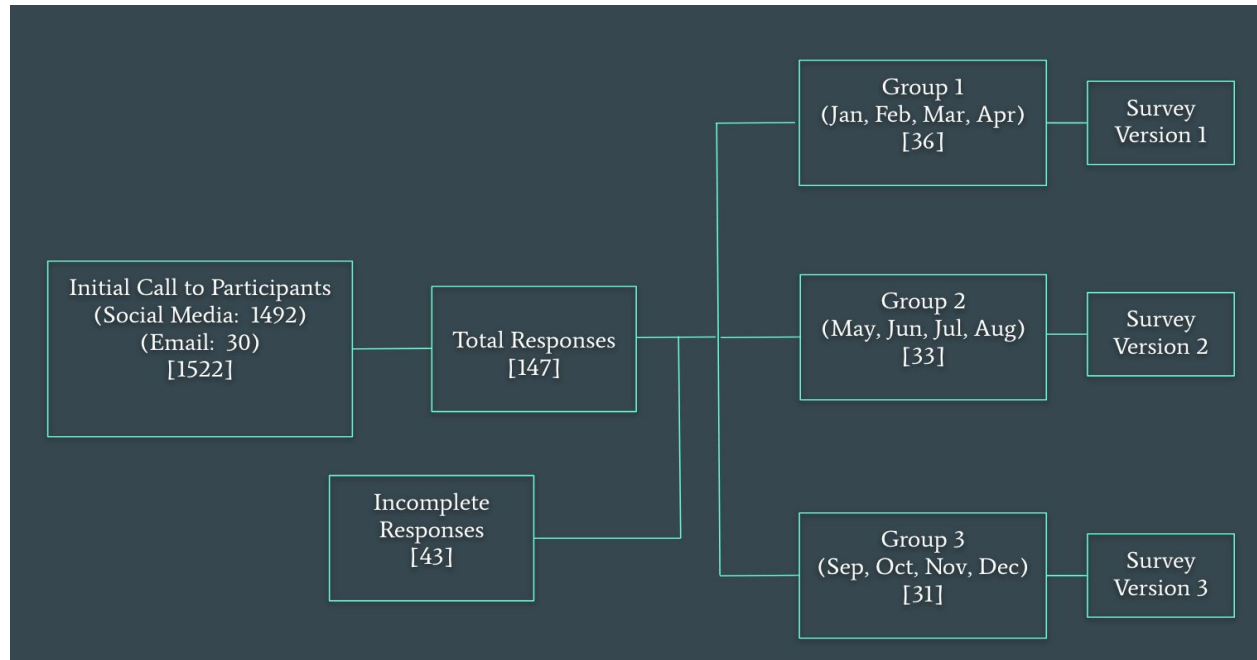
Data Flow for Survey

Figure 1. The flow diagram for the experiment as implemented. The numbers in square brackets are the number of participants at each stage of the experiment.

Geographic dispersion of survey takers

The 'country from' covariate captured was free text, and some adjustments had to be made in order to group appropriately. "US" "United States" and "USA" were grouped, as were "England", "UK", and "United Kingdom". Some clear spelling errors were corrected. Additionally, someone entering GEO was assumed to be from the country of Georgia. Based on the geographic distribution of our survey respondents, we opted to bin our respondents into two groups: "Americans" and "Non-Americans".

USA	38
India	17
UK	9
Ireland	8
Bolivia	5

Figure 2. A geographic distribution of survey participants. The size of the blue dot reflects the number of completed surveys citing each country has their home country.

Analysis of Covariates

Analysis of the three survey groups, separated by birth month, demonstrates that there is no significant difference in the composition of each group, based on the covariates that we collected.

Table 2. This table compares the covariate make-up of each survey group. The standard error for the difference in the fraction of a group with a particular covariate compared to Group 1 are provided in italics.

	Group 1	Group 2 - Group 1	Group 3 - Group 1
Women	0.556	-0.040 *(0.122)*	-0.039 *(0.124)*
Americans	0.306	-0.063 *(0.109)*	0.017 *(0.116)*
Bachelor's Degree and Above	0.861	-0.013 *(0.086)*	0.0099 *(0.085)*
Under 35 years old	0.139	0.013 *(0.086)*	-0.0099 *(0.085)*
Did Not See Status	0.056	0.096 *(0.074)*	0.106 *(0.078)*
N	36	33	31

It can take as little as 30 seconds to complete the survey with little reading. The median time taken to complete a survey was 3-4 minutes, which demonstrates that many put enough thought

into the response as to make the any conclusions valid. However, many of our subjects did not notice the status of the project, and thus we assume they did not include it in their considerations. This may have shown a weakness in the lack of representativeness of those initial a/b testers.

Outcome Measurement of Survey

The key outcome measured in this survey was the amount of the donation to the project in each particular stage compared with the 'planned' stage. In Figure 3, the donation amount to each charity is aggregated according to the status of the project. Figure 3 represents the outcome measurement for the participants in our survey. The distributions for each of the three project phases appears similar, each displays a maximum frequency for the bin that ranges from $150 to $200, each project status also contains values across the entire range from $0 to $500. This figure suggests that the status of the project did not have substantial impact on the amount of funds allocated to it, however to further investigate this claim we used a regression analysis.
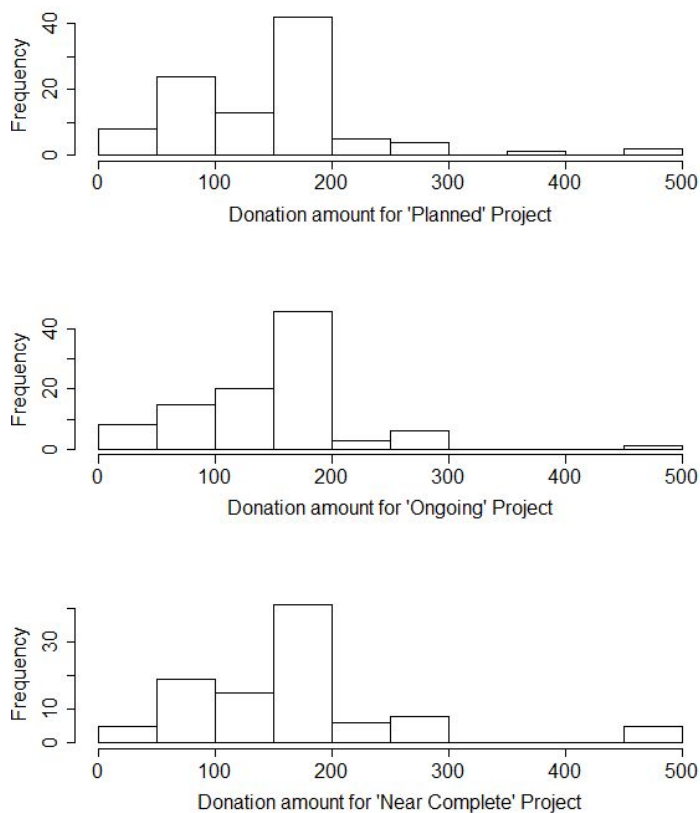
Figure 3. Histograms of the donation amounts suggested to charities based on the stage of the project.

Regression Analysis of Surveys by Individual Projects

Table 3. Regression results from models of donation amounts to individual charities on the stage of the project.

	Dependent variable:		
	Donation Amount		
	River Blindness	Bilharzaisis	Trachoma
	(1)	(2)	(3)
Near Complete	53.920	24.800	−9.257
	(21.645)**	(18.279)	(23.423)
Ongoing	−2.391	31.666	−31.510
	(21.101)	(17.912)*	(24.517)
Constant	163.544	140.164	173.883
	(14.593)***	(13.229)***	(16.919)***
Observations	99	99	99
R^2	0.079	0.034	0.018
Adjusted R^2	0.060	0.014	−0.003
Note:			$^*p<0.1$; $^{**}p<0.05$; $^{***}p<0.01$

Table 3 summarizes the results of a regression of donation amount to each cause regressing on the stage of the project and if the survey respondent was a woman. The regression for the River Blindness project shows a significant preference for projects near completion with an ATE point estimate of $53.9 +/- 44.7 at the 95% confidence that the effect is different from status Not Started. This agrees with the ANOVA analysis done from the data in Figure 5. The Bilharziasis and Trachoma charities do not have any significant coefficients for the stage of the project.

Expanding the regression to use the covariates collected (Table 4), several of the coefficients for the age ranges become significant, when compared to the reference case of "18 to 24 years old." In general, there is a trend that as people age the amount they donate decreases. However, given that this trend is not repeated in the other charities and some of the age groups have few participants, this trend is thought-provoking, but not conclusive and should be tested further in additional studies.

Based on the statistical power calculation, the analysis of the projects independently as presented here, with 101 observations each, has provided only about 20% statistical power. However, the design should allow us to combine the results if we can demonstrate that there is minimal difference between the projects which increases observations to 303 as 101 subjects assigned value to 3 different statuses each, and statistical power to around 42%. Still not optimal, but more statistical power than otherwise.

Table 4. Regression results from models of donation amounts to individual charities on a full suite of covariates.

	Dependent variable:		
	Donation Amount		
	River Blindness	Bilharzaisis	Trachoma
	(1)	(2)	(3)
Near Complete	46.627	33.151	−8.123
	(21.915)**	(18.504)*	(22.887)
Ongoing	−6.552	34.723	−20.028
	(21.322)	(18.035)*	(24.135)
Woman	−2.699	9.640	−6.941
	(18.136)	(14.925)	(19.467)
Bach	0.057	2.096	−2.152
	(28.514)	(23.465)	(30.606)
American	8.918	1.674	−10.593
	(20.191)	(16.616)	(21.673)
Age_Range25 - 34 years old	−127.775	61.106	66.669
	(67.372)*	(55.443)	(72.317)
Age_Range35 - 44 years old	−135.720	84.353	51.367
	(64.006)**	(52.673)	(68.703)
Age_Range45 - 54 years old	−167.370	89.006	78.364
	(67.222)**	(55.319)	(72.155)
Age_Range55 - 64 years old	−217.896	−4.289	222.185
	(81.923)***	(67.418)	(87.936)**
Age_Range65 - 74 years old	−151.392	85.525	65.867
	(91.745)	(75.501)	(98.479)
Age_Range75 years or older	−239.732	−45.708	285.439
	(108.387)**	(89.196)	(116.341)**
Constant	306.283	52.557	114.561
	(66.317)***	(53.215)	(69.532)
Observations	99	99	99
R^2	0.178	0.147	0.180
Adjusted R^2	0.074	0.039	0.076
Note:			*$p<0.1$; **$p<0.05$; ***$p<0.01$

Analysis for Perceived Differences in Project Quality

The selection of charitable projects that were substantially similar in scope, region, and impact is a cornerstone to determining if the project status has an impact on donation behavior. Figure 4 represents the breakdown of the donations to each charity from the entire survey pool.

The median of each of these charities is nearly identical, and the interquartile ranges overlap considerably. The range for each of these charities is similar, ranging from $0 to $300 for the majority of the values, and both the River Blindness disease and Trachoma received donation amounts above $300. This overlap suggests that the projects were perceived as equivalent by our survey respondents. An ANOVA analysis of the donation amount separated by charity fails to reject the null hypothesis and concludes that the means of the charities are equal (p-value = 0.224).
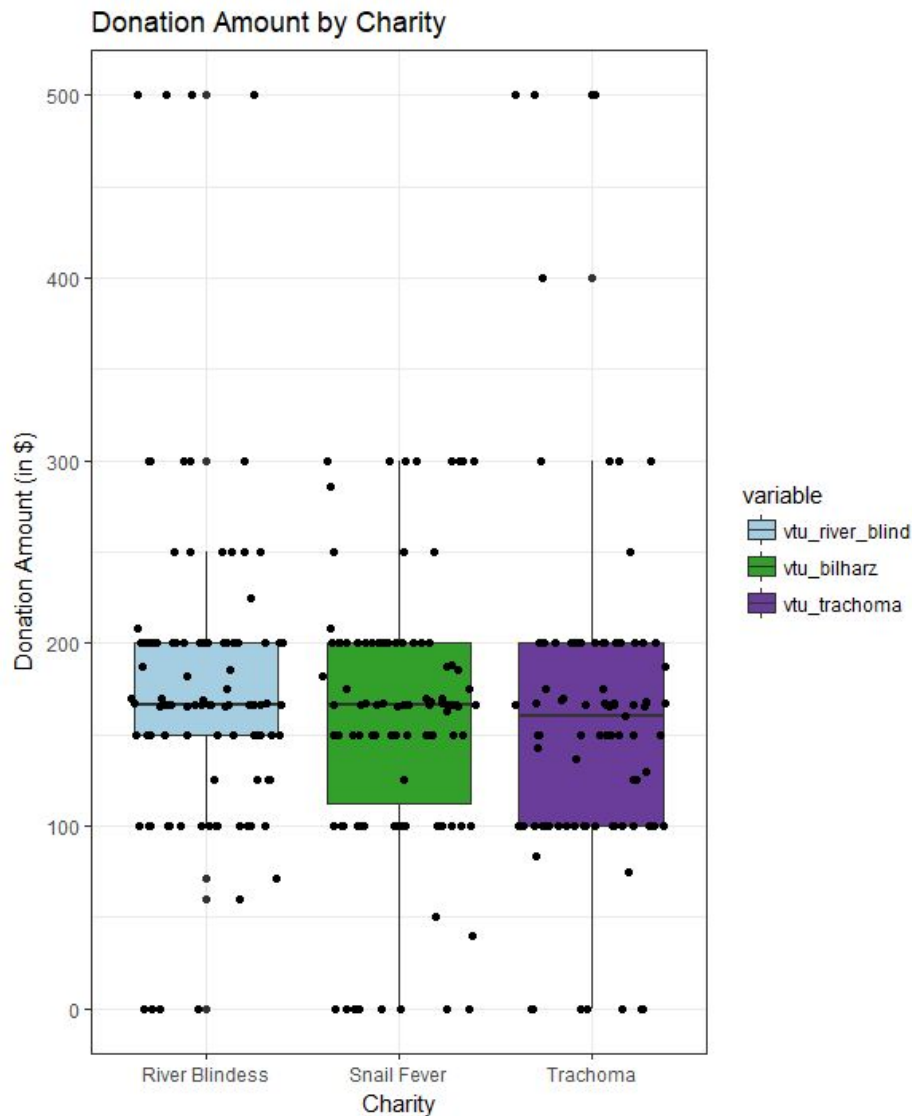
Figure 4. Box-and-Whisker plots of the donation amounts to each charity.

The stage of the project was also investigated individually for each survey group. As shown in Figure 5, the medians and interquartile ranges for each of the three groups are similar. Using an ANOVA test for each stage of the project, the ongoing and just starting projects appear to have indistinguishable means from one another. However, the near complete projects reject the null hypothesis and suggest that the mean for near complete projects from survey group number 3 is different (p-value = 0.0492). This suggests that the subjects of this survey may have a slight preference towards the River Blindness project. However, this also could be the result of the stage of the project.
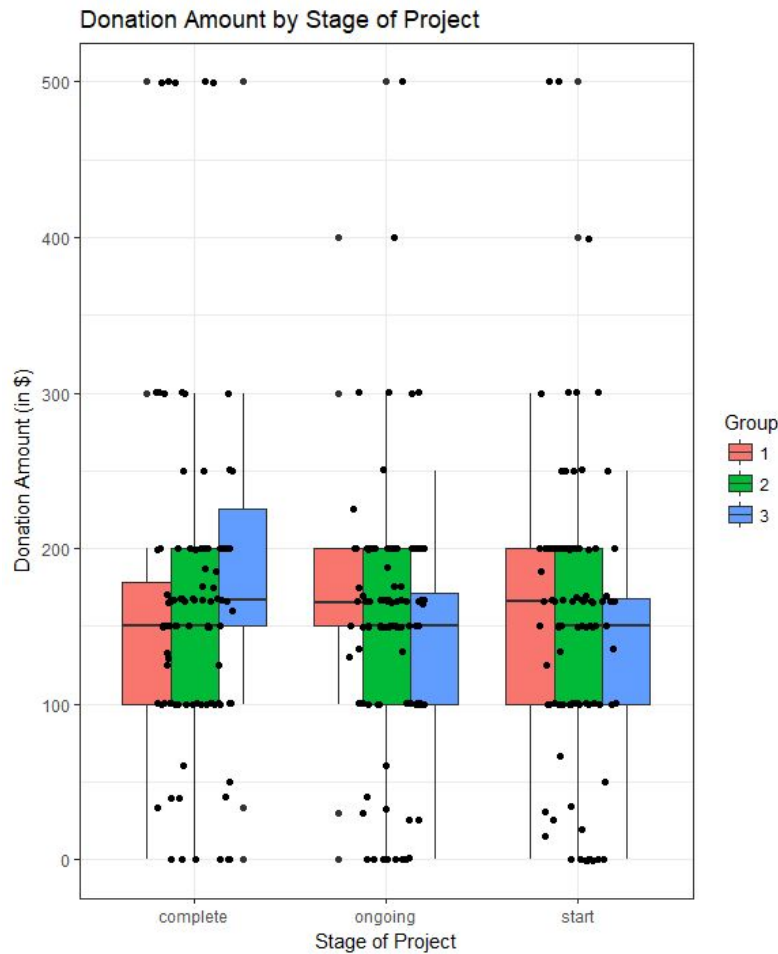
Figure 5. Box-and-Whisker plots for donation amounts to projects at different specified stages, and separated by treatment group.

Regression Results from Combined Projects

By combining the experimental results, a greater statistical power should be gained providing more authority to the results. While still well below a comfortable threshold, combining provides greater power than reviewing individual projects.

Table 5 provides the regression analysis of the combined results which demonstrates that there is no significant impact of project status on donations. There does appear to be a positive point estimate of +$21 for the Near Completion project that may be worth some further investigation. The p-value for these coefficients is consistently between 0.05 and 0.10. The ongoing projects are then indistinguishable from the projects just starting. In this expanded regression, the previously observed potential bias towards the River Blindness project is replicated, though it is not statistically significant.

Table 5. Regression results of donation amounts to all projects on project stage, a full suite of our collected covariates, and the individual charities.

	(1)	(2)	(3)	(4)	(5)	(6)
			Dependent variable:			
			Donation Amount			
Near Complete	20.845	20.845	20.845	20.845	22.034	22.034
	(12.400)*	(12.421)*	(12.443)*	(12.464)*	(12.453)*	(12.585)*
Ongoing	−0.561	−0.561	−0.561	−0.561	0.050	0.050
	(12.400)	(12.421)	(12.443)	(12.464)	(12.453)	(12.585)
Woman		0.000	0.000	0.000	0.000	0.000
		(10.168)	(10.189)	(10.207)	(10.184)	(10.645)
College Degree			−0.000	−0.000	−0.000	−0.000
			(14.584)	(14.610)	(14.577)	(16.729)
American				−0.000	−0.000	−0.000
				(11.298)	(11.273)	(11.837)
River Blindness					19.810	19.810
					(12.453)	(12.585)
Bilharzaisis					0.358	0.358
					(12.453)	(12.585)
25 - 34 years old						0.000
						(39.334)
35 - 44 years old						−0.000
						(37.385)
45 - 54 years old						−0.000
						(39.263)
55 - 64 years old						0.000
						(47.496)
65 - 74 years old						−0.000
						(53.462)
75 years and older						−0.000
						(63.307)
Intercept	159.905	159.905	159.905	159.905	152.583	152.583
	(8.768)***	(10.333)***	(16.370)***	(16.712)***	(18.292)***	(38.887)***
Observations	297	297	297	297	297	297
R^2	0.013	0.013	0.013	0.013	0.024	0.024
Adjusted R^2	0.006	0.003	−0.001	−0.004	0.001	−0.021

Note:	$p<0.1$; $p<0.05$; $p<0.01$

Manipulation Check

We also asked if the respondents had noticed the status of the project. The question was phrased as, "What was the status of the project that you gave most to". We can be certain that around 44% correctly recognized the status of the project that they assigned most funds to. But a further 26% correctly selected that they spread the funds evenly, which does not clearly answer our intended question of whether the subject had noticed the status. We can confirm that 30% of participants did not know or incorrectly selected the stage of the project most was contributed to, which was higher than expected. This indicates the non-compiler ratio is at least 30% and at most 56%, and suggests that our A/B testing population was not diverse enough to decide how explicitly to present the status. We did not use this in any regressions or to limit the sample as it is a post treatment variable and therefore would be a bad control.

Issues with Determining Causal Link

The within-person design implemented is flawed. There is a fundamental issue with the design that intractably introduces confounders. The reason for this is that there was no differential

exposure to control and treatment. In other words all the subjects were equally exposed to all treatments. In doing so we were not able to support our causal claim. Along with the compliance and attrition already discussed, the issue of confounders will need to be eliminated.

Conclusions and Future Plans for Determining Causal Link

The experiment described previously failed to establish a causal link between the behavior and the project stage, however the experiment suggests a trend that people choose to donate more money to projects near completion.

To design an experiment with the focus on determining a causal link, the experiment should expose a subject to one pair of identical aid organizations working on a common cause, except for the project stage. In doing so we expose our control group to only control and control (projects stages the same), and our treatment group to control and treatment (project stages different).

Table 6. Proposed measurement scheme of experiment aimed at elucidating the causal link.

	Control (Not Started)	Treatment (Ongoing or Near Complete)	ATE λ - $\square$
Single Cause	$\square_r$	λ_r	ATE_{r1}

Once again the attributes of the presented organizations will be as similar as possible so as to reduce the introduction of confounders. The new design will use only one disease, as opposed to three in the current version. Figure 6 provides a flow diagram for this experiment. While this may complicate the design, we believe this would help to better understand the behavior. To first validate the design, we recommend running an experiment that uses only one treatment (e.g. the "ongoing" project status). Note we could expose a subject to more than one pair of aid organizations but we would have to measure the effect of the order that the aid organizations were presented. Increasing the number of organizations shown to a subject runs the risk of reducing compliance.

A persisting issue in our surveys was the incomplete allocation of funds. Some subjects would allocate the entire $500 having no balance remaining while others would allocate a portion and have a balance. To improve compliance the subjects will be only provided the option of selecting which aid organization will receive the entire $500. Figure 7 provides a suggested version of this survey form.

We will also need to consider the method of recruiting subjects. The 101 that were captured in social media feeds were not well representative of the broader population. The demographics will have been biased towards people that the researchers have in their social or professional networks leading to a lack of generalization of any results. In the scaled up survey, access to a broader pool of representative subjects will be necessary; those who generally give to charity and who may be impacted by the 2018 tax regulations in the US.
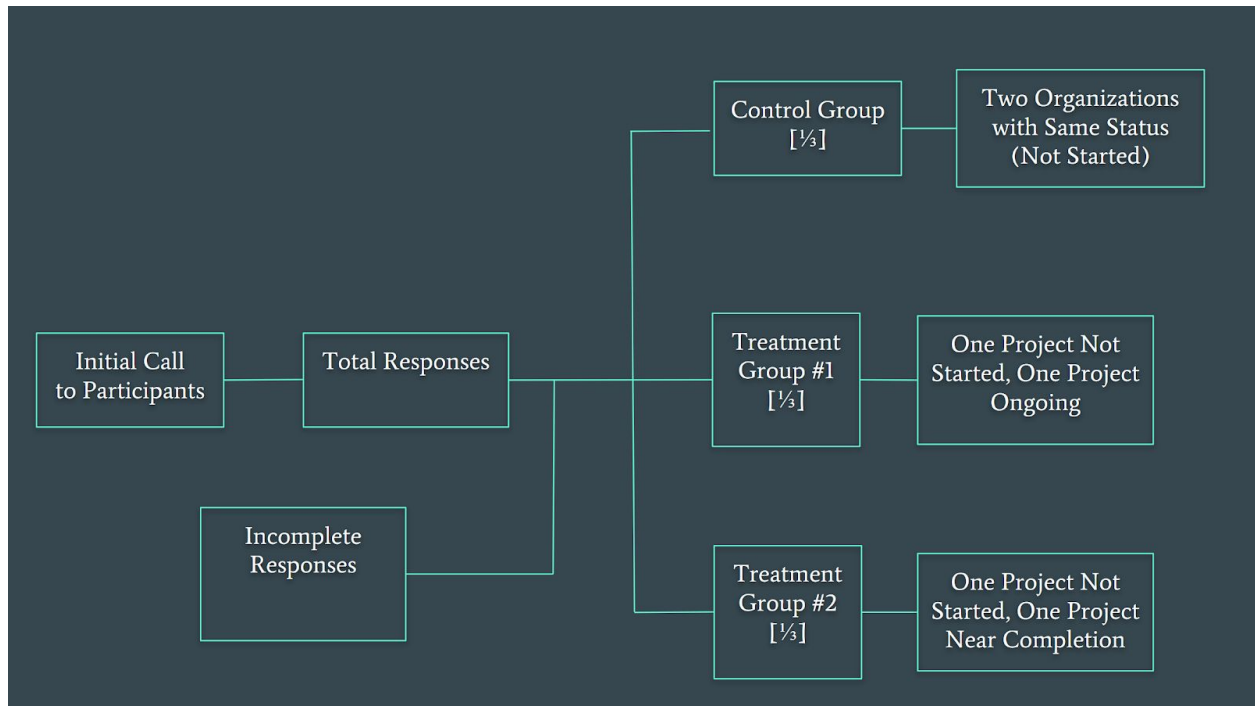
Figure 6. Proposed experiment flow. The square brackets represent the fraction of the total assigned to each group.

Figure 7. Mockup of proposed new design: Treatment example (control would have statuses the same).

Appendix

Question format used:

Project Status: Planned

Location: Uganda

Description: Distribution of Mectizan, a medicine that kills the River Blindness larvae in the body, to at risk children

Background: The Onchocerciasis infection, or River Blindness, is a parasitic infection that can cause intense itching, skin discoloration and eye disease that often leads to permanent blindness.

Project Status: In Progress
Location: South West Nigeria
Description: Distribution of praziquantel, which can reverse much of the infections impacts, to school age children
Background: Schistosomiasis, also known as bilharziasis or "snail fever," is a waterborne parasitic infection that damages internal organs. It is contracted through daily activities in water. It can live many years in the body.

Project Status: Near Complete
Location: Burundi
Description: Providing the antibiotic azithromycin to school children in order to cure them and prevent its spread
Background: Trachoma is a bacterial eye infection found in poor, isolated communities lacking basic hygiene, clean water, and adequate sanitation. It is easily spread from person to person through eye-seeking flies, hands, and clothes. Repeated infection leads to scarring and inward turning of the eyelid — a very painful condition called trichiasis — eventually causing blindness if left untreated.

Question formats tested:

Project Planned:

Treatment: Project is due to start in Uganda to distribute Mectizan, a medicine that kills the larvae in the body, to at risk children

The Onchocerciasis infection, or River Blindness, is a parasitic infection that can cause intense itching, skin discoloration and eye disease that often leads to permanent blindness.

Project under way:
This ongoing project is distributing praziquantel, which can reverse much of the infections impacts, to school age children in South Western Nigeria

Schistosomiasis, also known as bilharziasis or "snail fever," is a waterborne parasitic infection that damages internal organs. It is contracted through daily activities in water. It can live many years in the body.

Project finalizing:
A project is close to completion in the West of Burundi to provide the antibiotic azithromycin to school children in order to cure them and prevent its spread

Trachoma is a bacterial eye infection found in poor, isolated communities lacking basic hygiene, clean water, and adequate sanitation. It is easily spread from person to person through eye-seeking flies, hands, and clothes. Repeated infection leads to scarring and inward turning of the eyelid — a very painful condition called trichiasis — eventually causing blindness if left untreated.

A project is due to start in Uganda to distribute Mectizan, a medicine that kills the larvae in the body, to at risk children

The Onchocerciasis infection, or River Blindness, is a parasitic infection that can cause intense itching, skin discoloration and eye disease that often leads to permanent blindness.

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Schistosomiasis, also known as bilharziasis or "snail fever," is a waterborne parasitic infection that damages internal organs. It is contracted through daily activities in water. It can live many years in the body.

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Trachoma is a bacterial eye infection found in poor, isolated communities lacking basic hygiene, clean water, and adequate sanitation. It is easily spread from person to person through eye-seeking flies, hands, and clothes. Repeated infection leads to scarring and inward turning of the eyelid — a very painful condition called trichiasis — eventually causing blindness if left untreated.

Project planned: Distribution of Mectizan, a medicine that kills the River Blindness larvae in the body, in Uganda to at risk children

The Onchocerciasis infection, or River Blindness, is a parasitic infection that can cause intense itching, skin discoloration and eye disease that often leads to permanent blindness.

Project In Progress: Distribution of praziquantel, which can reverse much of the infections impacts, to school age children in South Western Nigeria

Schistosomiasis, also known as bilharziasis or "snail fever," is a waterborne parasitic infection that damages internal organs. It is contracted through daily activities in water. It can live many years in the body.

Project finalizing: Providing the antibiotic azithromycin in the West of Burundi to school children in order to cure them and prevent its spread

Trachoma is a bacterial eye infection found in poor, isolated communities lacking basic hygiene, clean water, and adequate sanitation. It is easily spread from person to person through eye-seeking flies, hands, and clothes. Repeated infection leads to scarring and inward turning of the eyelid — a very painful condition called trichiasis — eventually causing blindness if left untreated.