Entrepreneurs' Transition to Philanthropy: Empirical Evidence from an Experimental Survey

Emily Nwakpuda and Maryann Feldman

University of North Carolina (UNC) at Chapel Hill

Abstract

Universities have come to depend on contributions from individual, high net-worth donors. Often these donors are entrepreneurs who have experienced a liquidity event. This paper seeks to understand the factors that motivate entrepreneurs to give monetary philanthropic contributions to universities, and specifically to academic science. An experimental survey was conducted with 95 entrepreneurship and 110 public policy undergraduate students. Experimental scenarios assessed the willingness of survey respondents to fund projects with different levels of innovative potential, and different levels of social benefit, and different types of scientific disciplines (medical, engineering, and physical science). Students were randomly assigned into control and experimental treatment conditions highlighting either tax incentives, herding, and social awareness of prominent figures. Conjoint analysis revealed few differences in behavior between entrepreneurial students and public policy students. As expected, individuals responded to differences in innovativeness and social benefit, with a preference for high innovation and high social benefit projects. Most interesting is the result that individuals are equally likely to fund high-innovation projects in medicine and physical science. A second experimental survey of entrepreneurs (n=122) focuses on contributions to quantum physics, a high-innovation field in physical science. After considering their personal wealth outcomes if their firms were to be acquired, entrepreneurs responded to two hypothetical opportunities to fund quantum physics. Entrepreneurs' willingness to fund highly innovative science was found to be elastic, suggesting that entrepreneurs could be a viable group of funders for innovative science. These findings offer new considerations for the motivations of entrepreneurs to support science at academic institutions.

Keywords: philanthropy, higher education, science, entrepreneurship

Acknowledgements: We thank Lauren Lanahan for providing data. We would like to acknowledge Ted Zoller, Bernard Bell, Pete McEntegart, Tarryn Henry, Jason Widen, and Jason Doherty for survey distrivbution assistance. We appreciate the assistance of Kevin Thompson, Beth Thompson, Arthur Wasserman, Susan B. Ervin, and Andrea Morris for providing expert interviews. Funding is acknowledged from the Alfred P. Sloan Foundation and the National Science Foundation.

Entrepreneurs' Transition to Philanthropy: Empirical Evidence from an Experimental Survey

Philanthropic donations to academic institutions have become critical for the launching of new science initiatives and the building of new facilities. While the reasons why government invests in academic science are well known (Stephan 1996), the reasons why individual donors invest in academic research is less clear. Altruism is a common motive examined in the literature (Winterich & Barone 2011). Yet, if pure altruism was the motivation, then we would expect that all gifts would be anonymous. Instead, only about 10% of gifts from individual donors are provided without attribution (Nwakpuda, 2019; Osili et al., 2011). Little is known about individual donors, especially the motives of individuals who make large donations to fund academic science.

Universities that are recipients of large gifts worth millions of dollars have disproportionately received such gifts from entrepreneurs who have built firms that experienced immense success and were potentially acquired by larger firms. Nwakpuda (2019) found that entrepreneurs were among the most generous individual donors to universities and also disproportionately gave to the sciences rather than athletics or other purposes. Economic theory has yet to fully explain the motives for being entrepreneurial and the processes of leveraging relationships, knowledge, and economic opportunities (Mahoney & Michael, 2005). Entrepreneurs are believed to be different from other donors. They have a different mindset coupled with strong social identities (Dobrev & Barnett, 2005). The distinctions of how entrepreneurs operate in comparison to the general population adds a new dimension to the study of philanthropy. Examining their motives provides interesting theoretical insights into donor motivations, and also has practical implications for academic fundraisers.

This paper seeks to provide empirical evidence about the factors that motivate entrepreneurs to contribute large philanthropic gifts to the academic sciences at universities. This research study uses two online multi-stage experimental scenario studies to test factors that motivate the willingness of entrepreneurial students and entrepreneurs to make large philanthropic gifts to academic science. The findings from experiment number two, with a survey of entrepreneurs, builds on the findings from experiment number one with students. The study with students sought to understand their general philanthropic preferences and the students ranked 12 funding scenarios related to the medical, engineering, and physical sciences. Findings from our experiment with students suggest that treatment conditions—based on tax incentives, giving gifts with others (herding), and social awareness of prominent figures—do not produce distinct differences in the willingness of entrepreneurs to fund academic science. We did find that students studying entrepreneurship have different preferences when compared to other students. Most surprisingly, these students are equally motivated to support high-innovation medical or physical sciences. These findings informed the second experiment, which focused on entrepreneurs in the general population. The second experiment examines entrepreneurs' willingness to provide philanthropic support for academic science, specifically using the example of quantum physics, which is a highly innovative physical science. Entrepreneurs' willingness to support basic physical sciences was found to be elastic.

The paper is organized as follows. The next section briefly reviews prior literature on donor motives. Experiments administered to 205 students and 122 entrepreneurs are analyzed. First each experiment is described and then results are then presented. Conclusions illuminate the willingness of experiment participants to support academic science, and the lessons learned for science fundraising.

To Give or Not to Give: The Motives of Entrepreneurs

Ostrower (1995) argues that charitable giving is an expectation in the US for those who have financial assets. Entrepreneurship and philanthropy are known to be historically intertwined (Acs & Phillips, 2002). Consider prominent 20th century industrialists, such as Johns Hopkins and Andrew Carnegie, who practiced a level of organized philanthropy previously unseen. Like other wealthy entrepreneurs of their time, they supported private colleges with scientific leanings. Most recently, Nwakpuda (2019) reports 50% of high net-worth donors who support academic science are often entrepreneurs, especially at the 99th quantile of gifts.

Steady increases in philanthropic dollars over the past decades is thought to have signaled a new "Golden Age" of philanthropy in the 21st century (Havens and Schervish, 1999). This trend has been linked to entrepreneurs who infuse entrepreneurial thought processes and actions into philanthropy (Wagner, 2002). Wagner specifies the "new donor" to be high-tech entrepreneurs, social entrepreneurs, and engaged grant makers or investors. Furthermore venture philanthropy (Letts et al., 1997), which seeks to make philanthropic investments in organization capacity, is considered a new focus in philanthropy and builds on entrepreneurial models.

Brown (1997) argues that no single model can describe philanthropic motivations, which are complex. Bekkers and Wiepking (2011) identify the following eight mechanisms to explain giving behavior: awareness of need, being asked to give, sensitivity to the costs and benefits for giving, altruism, reputation, psychological benefits, values, and the efficacy of giving. Conducting an experiment is one way to disentangle some of this complexity.

Donors' awareness of need is essential because philanthropy is a supply-driven industry, due to its voluntary nature. Simply asking a donor for their support is the "iron law" of fundraising (Andreoni, 2006). Wealthy people typically receive more gift solicitations than non-wealthy people (Van Diepen, Donkers & Franses, 2009). Such solicitations (e.g., mailings or in-person meetings) can be perceived favorably or unfavorably, depending on the donor.

Solicitations prompt potential donors to consider giving. Bekkers and Wiepking (2011) define costs as being tangible things that affect donors and benefits are tangible things provided by organizations receiving the donation. This definition of philanthropic costs and benefits is in keeping with Clark and Wilson's (1961) initial definition of philanthropic costs and benefits. The costs and benefits of giving includes taxation and tax advantages (Peloza & Steel, 2005).

We explore individual intentions (i.e., readiness to act) to support philanthropic projects, as these are the most proximal determinants of behavior (Ajzen, 1991). The experiments below focus on entrepreneurs' philanthropic motivations toward academic science, with respect to the giving mechanisms discussed above, and controlling for other individual characteristics. For this research, an entrepreneur is considered to be the founder of a firm (solely or in partnership).

Research Design

Our study design builds incrementally, with two experiments. As prescribed by Wood, Williams, and Drover (2017), the assumption that entrepreneurs are philanthropic was tested for ecological validity before the experimental instrument for entrepreneurs was developed and deployed.

First, we established ecological and face validity to confirm entrepreneurs' philanthropic intentions and past actions. A brief survey was developed to ask entrepreneurs, generally, about their philanthropic beliefs and, specifically, about giving to higher education. This survey was shared electronically with a group of seasoned entrepreneurs associated with the UNC business school. Thirty-five (35) entrepreneurs responded to the survey requests. The 35 averaged 14 years of experience as an entrepreneur, with an average of 3 firms founded. The feedback provided was a mix of closed and open-ended responses pertaining to past, present, and future philanthropic intentions and actions. Of these entrepreneurs, 50% had been philanthropic in the past, and were willing to be philanthropic towards colleges and universities in the future.

The feedback provided from the initial survey was used to draft the experiment's survey instrument. The instrument was pretested by three entrepreneurs and four university fundraising officers to provide face validity. The entrepreneurs and university fundraisers were diverse in terms of background, ethnicity, and level of experience, but they were a convenience sample with prior connections to UNC. The entrepreneurs confirmed that the experimental conditions, scenarios, and questions about their philanthropic backgrounds were clearly stated and could be reasonably answered. The four university fundraisers were asked to use their expertise to critique the realism of the scenarios, specifically whether these scenarios mimicked how fundraisers would likely present philanthropic projects to potential donors. Hence, the experiment instrument was designed to illicit willingness to support philanthropic projects, controlling for prior and future philanthropic interest, and general affinity to support academic science. The experiment was piloted among advanced entrepreneurship students to confirm its efficacy, and gauge participant's responses to the reward incentives.

<Insert Table 1 >

The scenarios constructed for the experiment represent a full factorial combination of innovative opportunity (low vs. high), need (low vs. high), and scientific disciplines (medicine vs. engineering vs. physical science). These factors are believed to be important to an individual's decision making process about whether to support philanthropic projects pertaining to academic science. The full factorial combination of these three factors and the prescribed levels are systematically varied and combined to produce a scenario population of 12 different scenarios (2 x 2 x 3=12). The scenarios help to assess the importance of each factor in the causal effect of individual responses to the context of the hypothetical scenarios. Due to the low number of the total scenario population produced, each participant in this within-subject design viewed all 12 scenarios. Each participant's judgements of the scenarios allow for the estimation of separate main effects and interaction effects for innovative opportunity, need, and the scientific discipline. This experiment is described first before we consider the second experiment.

Experiment One

The first experiment was disseminated to upper level undergraduates in entrepreneurship and public policy courses in December of 2017. Instructors and program directors introduced the survey to students via email. The multi-stage scenario experiment was administered to participants online. Participation was motivated with a lottery.

Participants responded to a series of questions about their fields of study and entrepreneurial backgrounds. A total of 108 entrepreneurship and 117 public policy students responded to the first experimental survey, and a total of 205 responses (95 entrepreneurship and 110 public policy students) were retained after eliminating 20 responses due to incomplete responses[1]. Subgroups of students were identified within the remaining 205 respondents. Specifically, 44 students were identified in public policy courses, but there were majors in other disciplines and 5 public policy majors were also entrepreneurship minors. There was also a small sub-group of 9 MBA students in the group of undergraduate entrepreneurship students. Thus, the two groups were further defined by classifying entrepreneurial students as individuals who have previously established a business or aspire to start a business. These individuals were actively practicing entrepreneurship or aspiring to do so (i.e., nascent entrepreneurs).

This definition of entrepreneurial students identified 115 individuals consisting of 72 undergraduate entrepreneurship students, 9 MBA students, 16 public policy students without an entrepreneurship minor, 5 public policy students with an entrepreneurship minor, and 13 students in all other majors of study. The remaining 90 students were classified as non-entrepreneurship inclined students, regardless of whether they were initially identified as an entrepreneur or public policy student.

They were then primed with a scenario in which they were asked to imagine themselves as wealthy. For realism, entrepreneurship students were asked to imagine wealth gained from a successful startup firm. Public policy students were asked to imagine wealth from stock purchased

[1] The 20 responses eliminated consisted of 17 participants that failed to assess all 12 scenarios and 3 participants who indicated a disinterest in ever supporting higher education.

in a social media start up firm. Both groups were primed with the knowledge of immense wealth, typically requiring professional wealth management.

Student participants stated, if they had immense wealth, what their interest in philanthropic endeavors would be by selecting from 12 broad categories of charitable interest. They could select more than charitable interest and they were also allowed to specify other charitable interests that were not listed. Higher education was listed as one possible option among the 12 charitable sectors, as our broad interest is the philanthropic support of higher education. This priming led to student's second philanthropic decision, which focused on higher education as a philanthropic sub-area with diverse ways to address social problems with the help of philanthropic gifts. Participants then expressed their interest in 7 sub-disciplines of higher education (Arts and Humanities, Athletics, Business, Medicine, Law, STEM, and Social Sciences). Participants were allowed to opt out of the questions for subsequent scenarios if they chose to never support higher education.

Lastly, the priming continues with a scenario in which a charitable giving advisor informs participants of the need for funding STEM, as federal funding sources have reduced. Given the diversity of topics within STEM, participants are asked to consider 12 scenarios to gauge their interest in the philanthropic support of STEM. Scenarios were considered at random and rated on a seven-point scale. Participants were asked to then complete an allocation task of a $1 million dollar gift, to further rank their interest in scenario projects they rated with a 5 or higher.

The procedure described above represents the control condition. A participant assigned to one of three treatment conditions would receive a slightly different variation of the decision tasks to emphasize tax benefits, herd effects, or prominence scenarios that emphasize an appeal coming from a prominent figure (i.e., a university president). We are interested in knowing which treatment conditions prompt entrepreneurs to allocate more money to academic science. The 12 scenarios based on academic science are provided in the appendix.

Upon completion of all the decision tasks, participants responded to a series of questions about their philanthropic intentions and demographics. We collected additional quantitative data on participants' philanthropic motives to further explain their decisions and judgements in response to the scenarios. The students were all compensated $10 for their time.

The effects of the levels of the independent factors described above elicit judgements to be measured. The factors that frame scenarios are randomized, but not modified once a participant was assigned to a control or treatment condition. Conjoint analysis captures and decomposes the decisions of student participants to express their preferences for supporting academic science projects. Conjoint analysis can be conducted in multiple ways. In our case, the underlying factors responsible for respondent ratings of vignettes are decomposed using multilevel-modeling (MLM) analysis (Hox, Kreft, & Hermke, 1991; Raudenbush and Bryk, 2002). Our data has scenario-specific and participant-specific variance. MLM modeling also helps to account for the nonindependence of participant responses to scenarios which are essentially repeated measures. Furthermore, because we hypothesize that decision-makers use contingent decisions, conjoint analysis is a highly appropriate method to investigate the evaluation decisions of the sample without relying on respondent introspection, which is often biased and inaccurate (Fischhoff, 1982; Priem & Harrison, 1994).

There is no need to account for scenario set effects because the data is balanced, meaning the total population of scenarios was kept whole and reviewed by each participant. Separate analyses were conducted to compare the entrepreneurial and public policy student groups as defined above.

<Insert Table 2>

Table 2 presents summary statistics for the measured variables in experiment one. All student participants' scenario ratings range from 1- 7. The average rating is slightly higher than a rating of 4 ("neutral"). The majority of the students are white third year students who have had a positive college experience. Nearly half of all participants are women (46%).

When asked to choose among a list of higher education disciplines in need of philanthropic support, 46% of participants indicated an interest in supporting STEM. However, only less than 10% of participants are interested in supporting basic science (fundamental research to develop new knowledge). Another consideration of the sample of participants is that they report a high interest in philanthropic intent, because on average the majority of participants express an interest in prospective million-dollar giving. Giving is mainly viewed as an opportunity (not an obligation) to make a difference, and on average participants report that their current giving of time and money is occasional.

We tested the hypothesis that decision-makers will use contingent decisions based on the factors represented in scenarios and their personal characteristics. The dependent variables for experiments one and two reflect participants' willingness to support academic science projects.

In experiment one with student participants the dependent variable is ratings of their willingness to support an academic science scenario within the medical, engineering, or physical sciences. Willingness to support was measured on a 7-point scale (from 1="unlikely to support" to 7="likely to support").

<Insert Table 3>

Parameter estimates are presented in Table 3 using MLM to conduct conjoint analysis. The main effects of the experiment are the factors that define the scenarios vetted by participants on a 7-point scale. The innovative-opportunity and need effects are shown to increase the rating of scenarios by at least 1 point. Yet, the effect of innovative-opportunity is statistically different for the entrepreneurial and publc policy students, and the magnitude of this effect is larger for entrepreneurial students. The effect of need on the ratings of scenarios is positive and significant but the need factor has no statistically different effect between the entrepreneurial and public policy students and is thus represented by one coefficient in the Both category in Table 3.

Medicine is the reference group for the science type factor. The effect of the type of science is not statistically different for the entrepreneurial and public policy students. The effect of engineering is negative and significant for both groups but the magnitude of the coefficient is less than a half a point on the 7 point scale. This implies that participants' willingness to support engineering is lower than medicine, but by small margins. Yet, the effect of physical sciences is positive, though not significant. This is indicative of the opportunity to support physical sciences not being viewed differently from medicine. This finding is counter intuitive to the reality of the great funding disparity between medicine and the physical sciences (Murray, 2013).

There was a balanced representation of participants in control and treatment conditions (approximately n=51 participants per treatment). None of our treatment effects were statistically significant in influencing behavior. This was a surprise as fundraising professionals believe that the type of pitch influences outcomes. However, there is some evidence to support these non-results. For example, Lacetera et al. (2016) find that social contagion is limited when it comes to contributing real money to charities using online platforms.

The effect of gender on the rating of scenarios is distinct for entrepreneurial and public policy students. The signs of the effect of female is opposite for the two participant groups. This result implies that entrepreneurial females are less willing to support academic science projects than entrepreneurial males and public policy females. The magnitude of the coefficients on female are less than half a scale point above or below zero.

The remaining demographic measures are not significantly different between entrepreneurial and public policy students and are reported in the Both category of Table 3. We controlled for white, years of study, and positive college experience and had non-significant and uninteresting effects on the rating of scenarios, with the exception of a positive and significant effect of being a third year student.

Experiment Two

The second experiment is based on lessons learned from our first experiment. Participants in the second experiment were entrepreneurs, a sample used to avoid some of the validity bias and representative sample limitations known to be associated with studying student groups in experimental philanthropic studies (Bekkers & Wiepking, 2007). Our sample of entrepreneurs were recruited from entrepreneur incubators, and accelerators. We also use a list of recent Small Business Innovation Research (SBIR) award recipients. Their entrepreneurial status was established by initial survey intake questions. A total of 235 responses were received. Of these, 122 responses were complete, usable and form the basis for analysis.

Summary statistics for experiment two are presented in Table 4. Working entrepreneurs (n=122) report a range of business experience. Some entrepreneurs have operated firms since 1975 while other entrepreneurs propose to start firms by 2020. The majority (67%) have had firms since 2010 or later. The average age of these entrepreneurs is 46 years. Only 17% of the sample of entrepreneurs in experiment two is non-white and 20% of the sample of entrepreneurs is female. This trend is indicative of known trends in the broader entrepreneurship community. Additionally, 61% of these entrepreneurs report having one or more children.

Our sample of entrepreneurs originate from all US regions. Specifically, these entrepreneurs are originally from Northeastern (21%), Midwestern (9%), Southern (47%), and Western (23%) regions of the US. North Carolina is also known for having a strong life sciences entrepreneurial ecosystem. This characteristic of North Carolina is reflected in our sample of entrepreneurs stating that their firm industries are in the life sciences (31%), health and medicine (24%), engineering (15%), technology (15%), and other fields (15%) (e.g., educational services).

Intuitively, given their specialized fields of business it is logical that the majority of the entrepreneurs (97%) have at least a bachelor's degree.

Entrepreneurs were primed with information on lucrative firm acquisitions before being asked to imagine their personal wealth and firm price if their own firm was acquired. The first segment of experiment two was organized as a choice-based conjoint analysis of participants' philanthropic preferences. In stage one of experiment one, participants considered 12 broad categories of charitable interests. These categories were simplified in experiment two to four broad areas (arts & culture, animals, social support, and scientific discovery). Participants proceed to state their preferences for philanthropic incentives (public recognition, special invitations, or financial incentives) and their preferred personal level of engagement with philanthropic projects (hands-on or hands-off). Participants are also asked whether they prefer to support a very well-established and well-known organization or a not-well known but respectable organization. To end the conjoint analysis, participants divide 100 points among their most preferred charitable interests, incentives, engagement, and organizational reputation type.

In the next stage of the experiment, participants are informed of the first hypothetical scenario in which there is an opportunity to make philanthropic investments in scientific discovery in quantum physics, a high innovation field of physical science. The funding opportunity scenarios in quantum physics are based on descriptions from a well-funded quantum physics research center. Expert advice from a seasoned fundraiser accustomed to fundraising for large gifts for the physical sciences helped increase the realism of experiment language. Additionally, the first quantum physics scenario in experiment two included a video on quantum physics to enhance participants understanding of quantum physics and their immersion in the context of the quantum physics scenarios they consider. Review of the video was optional. The first quantum physics scenario asks participants to state the amount of support they are willing to pledge to a college that seeks to advance the field of quantum physics.

The second quantum physics scenario prompts participants with information about their hypothetically successful firms becoming more successful than expected. Participants are randomly assigned to income endowment treatment groups in which the higher level of firm success yields a personal wealth that is 20, 40, or 60 percent higher than expected. Participants are prompted with the calculated amount of personal wealth that corresponds with their assigned income endowment group before being asked to restate the amount of support they are willing to pledge to a college seeking to advance the field of quantum physics.

The final segment of scenario two ends with participants being asked whether they are interested in an opportunity to engage with other entrepreneurs to support quantum physics. Questions about their philanthropic intentions, values, and demographics follow the last decision task. The entrepreneurs were all eligible for a $500 lottery to compensate them for their time. The scenarios for experiment two are provided in the appendix.

<Insert table 4>

The choice-based conjoint analysis in experiment two asked entrepreneurs to identify their interest in giving to four main philanthropic causes. Entrepreneurs express the most interest in supporting social support (48%) and scientific discovery (39%), rather than supporting arts and culture (8%) and the humane treatment of animals (5%). Supporting a vital need (42%) and the opportunity to develop or expand a specific field of knowledge (24%) were most often indicated as the greatest potential impacts in supporting scientific discovery. In contrast, our sample of entrepreneurs most often indicated that the greatest risk in supporting scientific discovery is their concern for the management and impact of the gifts (46%), and a third (34%) of the entrepreneurs expressed worries that their money could be of greater use on causes other than scientific discovery.

In contrast to experiment one, willingness to support an academic science project in experiment two was measured in the dollar amounts participants pledged to the support of quantum physics. Participant levels of giving to quantum physics scenario one and scenario two represents giving at baseline, and at an income increase, respectively. Ordinary least squares is used to estimate the elasticity of giving by relating the log amount given to entrepreneurs' stated personal wealth in both quantum physics giving scenarios. Quantitative estimation using stated personal wealth is preferred to hypothetical wealth because entrepreneurs have a real understanding of their evaluation of their personal wealth and firm wealth if their firms were to succeed. Furthermore, their response to an income increase in scenario two is fundamentally based on their initial stated personal wealth.

The data was further transformed for multilevel-modeling analysis, as quantum physics scenarios one and two represent giving under two states of wealth. Our data for experiment two is only considered to have participant-specific variance as the actual scenario-specific data did not vary per person. Generalized linear mixed modeling (GLMM) with the random effects model can estimate the change in giving over time and the elasticity of giving, because it recognizes the dimensions of the data by assuming the individual specific effects are not correlated with the time variant and invariant variables. Findings from the random effects model are found to be more efficient than the fixed effects model per the Hausman test. Separate analyses were conducted to compare the giving types among the sample of entrepreneurs as defined above.

<Insert Table 5>

The main effect for experiment two is the effect of personal wealth on the amount given to quantum physics. Table 5 presents parameter estimates of an entrepreneur's decision-making. The other factors that affect giving act as control variables. We log both entrepreneurs' personal wealth and the amount given to correct for skewness in the data, and use OLS to estimate the elasticity between these two measures.

Based on Table 5 models, holding all else equal, a 1% increase in entrepreneurs' personal income results in a 1.07% change in charitable giving based on the first quantum physics giving scenario. This finding is mirrored in the second quantum physics giving scenarios in which a 1% increase in entrepreneurs' personal income results in roughly a 1.08% change in charitable giving in the second quantum physics giving scenario in which entrepreneurs experience either a 20, 40, or 60 percent income increase in their personal wealth. This conveys that giving to quantum physics, with respect to personal wealth, is elastic. Therefore, as an entrepreneur's personal wealth grows, they are inclined to give more to support science.

The elasticity of giving was also classified into four categories. First, entrepreneurs who gave zero dollars in both quantum physics scenarios were classified as Never-givers. As opposed to the Consistent-givers, who give more than zero dollars but give the same amount in both quantum physics giving scenarios. Entrepreneurs classified as Generous-givers are individuals who give more than zero dollars in the first giving scenario and depending on their assigned income endowment treatment group give *no more than* 20, 40, or 60 percent more than the amount given in the first quantum physics giving scenario. In contrast to a Generous-giver, an Extremely-generous giver gives *more than* 20, 40, or 60 percent of the amount given in the first quantum physics giving scenario.

As defined above, the Never-givers (17%), Consistent-givers (35%), Generous-givers (18%), and Extremely-generous givers (30%) are equally distributed across the three income endowment treatment groups. The Never-givers and the Consistent-givers are essentially giving to quantum physics in an inelastic manner. In contrast, Generous and Extremely-generous givers are essentially giving to support quantum physics in an elastic manner. However, the inclusion of dummy variables for the income treatment groups at each endowment level yielded in-significant results.

The third model in Table 5 is a random effects model that takes into account giving under two states of wealth. The random effects model was chosen over the fixed effects model after the Hausman test for model misspecification resulted in a failure to reject the null hypothesis that the preferred model is random effects. Entrepreneurs' support for quantum physics with respect to an increasing personal wealth is again shown to be positive, significant, and elastic in the random effects model.

The effect of the personal demographics age, female, not having a doctorate degree, and having children, had no significant impact on giving to support quantum physics. These variables were selected and retained for their theoretical relevance. However, demographic variables that reflect entrepreneurs' life styles and values had a significant impact on giving to support quantum physics. These variables include willingness to give as a group (herding), past charitable giving (in time or volunteering), one's satisfaction with giving to charity and one's affinity for supporting science. Giving among one's peers is coded as herding to signify whether an entrepreneur is interested in giving with other people similar to themselves. The coefficient on the variable group giving is positive and nearly three times larger than the magnitude of the coefficient for personal wealth. This may signify how appealing giving as a group is to entrepreneurs rather than just using one's own wealth.

Non-monetary giving of one's time (volunteering) and the inherent satisfaction one gains from being charitable are indicators for one's level of commitment to being charitable. These two variables have significant, positive and similar size coefficients for quantum physics giving scenario one. The effect of these control variables might be driven by generous or extremely-generous givers, accounting for 56% of entrepreneurs who volunteer, and 55% of entrepreneurs who gain satisfaction from giving.

Having an affinity for supporting science within this study means that these entrepreneurs would rather support scientific discovery over arts and culture, humane treatment of animals, and social support. Thus the effect of having an affinity for supporting science should intuitively be positive and significant, as the results indicate.

Discussion and Conclusions

This research examines entrepreneurs' *philanthropic* motivations for giving large gifts to academic science. Because the study and practice of science requires large amounts of funding, our findings can improve considerations of how fundraisers pitch and market science. We have evidence that entrepreneurial individuals respond to the level of need, but their response to innovative opportunity is distinct from non-entrepreneurs. The broad findings from our first survey with entrepreneurial students inspired a more narrowly focused survey of entrepreneurs. In our second experiment, we focus on entrepreneur's potential propensity to give large gifts to an innovative science, quantum physics.

In both experiments, our sample of entrepreneurial students and entrepreneur participants both demonstrate their willingness to support academic science. This suggests that entrepreneurs are a viable donor group to fund science. High net-worth donors are known to support higher education in general (US Trust, 2016). However our results illuminate how having an affinity for science broadly, a trend for student entrepreneurs and entrepreneurs, has positive and significant effects on willingness to support specialized scientific funding opportunities. Typically medicine is the preferred area of scientific research (Murray, 2013), but the granularity in our analysis shows that student entrepreneurs demonstrate no difference in their willingness to support high-innovation opportunities in medicine or the physical sciences. Results from our second experiment with entrepreneurs suggests their willingness to support quantum physics, a highly innovative field of physical science, is elastic and potentially favorable to the support of related fields.

Entrepreneurs' interests in giving with their peers is an interesting finding. Donors' concern for feedback from members of their peer group when giving is another reputational type of giving that has been shown to be a philanthropic issue relevant to giving large gifts (Rosqueta, Noonan, & Shark, 2011). Lindahl (1995) argues that donors that make large gifts are motivated by relationships with high status individuals. Such relationships could offer entrepreneurs access to social capital benefits, such as new connections in associations, societies, networks, movements, and other affinity groups (Putnam, 2000). These groups practice social trust and norms that benefit members of these networks in ways that may or may not directly relate to a market. Bourdieu (1986) argues that social capital takes the form of economic, cultural, and symbolic capital. This implies that individuals, like entrepreneurs, are subject to the costs and benefits for each type of social capital, but the benefits warrant the costs.

In addition to being willing to give in a group, our sample of entrepreneurs are likely to be active volunteers who gain a sense of satisfaction from their charity. This finding is consistent with prior literature. Brown and Ferris (2007) found that giving money and volunteering time is positively related to individuals being associated with and trusting in members of their communities and networks. As mentioned above, being a member of groups such as associations is a form a social capital. Social capital, in multiple forms, can increase individuals likliehood of volunteering Goss (1999). Entrepreneurs' voluntary mentorship of other entrepreneurs' is growing in popularity as it is thought to support entrepreneurial success (Cull, 2006; St-Jean, Radu-Lefebvre & Mathieu, 2018). However our understanding of entrepreneurs voluntary practices and philanthropy is still growing (Reis & Clohesy, 2001).

Individualized donor outreach practices such as, mass mailings, calling, and emails are currently used by many fundraisers (Herrmann, 2008). These findings suggests that the design of a fundraising pitch or an appeal for the support of high-innovation science, such as quantum physics, should not just market the benefits of the science or request funds. Rather, fundraising pitches for science could also offer donors opportunities to get involved and meet potential giving partners. This suggestion is complicated by also needing to understand how to approach entrepreneurs who have never given and individuals that would not change their giving pattern despite having had a large win fall of additional income. Additional research is needed to test appeals that motivate difficult subsets of potential donors who are entrepreneurs. Non-profit organizations actively seek to understand the distinctions between donors and what types of solicitation appeals work for various types of donors (Schlegelmilch et. al., 1997; Burgoyne, Young, and Walker, 2005). There may be added value in narrowing solicitation efforts to the study of entrepreneurs as high-cost high-innovation science stands in need of additional funding to support future discoveries.

References

Acs, Z. J., & Phillips, R. J. (2002). Entrepreneurship and philanthropy in American capitalism. *Small Business Economics*, *19*(3), 189-204.

Ajzen, I. (1991). Theory of planned behavior. Organizational Behavior and Human Decision Processes , 50 , 179–211.

Andreoni, J. (2006). Philanthropy. *Handbook of the economics of giving, altruism and reciprocity*, *2*, 1201-1269.

Bekkers, R., & Wiepking, P. (2007). Generosity and philanthropy: A literature review

Bekkers, R., & Wiepking, P. (2011). A literature review of empirical studies of philanthropy: Eight mechanisms that drive charitable giving. *Nonprofit and voluntary sector quarterly*, *40*(5), 924-973.

Bourdieu, P. (1986). The forms of capital. In Richardson J (ed.) *The Handbook of Theory and Research for the Sociology of Education*. New York: Greenwood Press, 241–58.

Brown, E. (1997). Altruism toward groups: The charitable provision of private goods. Nonprofit and Voluntary Sector Quarterly, 26, 175-184.

Brown, L.D., 1972. Research action: organizational feedback, understanding, and change. J. Appl. Behav. Sci. 8, 697–711.

Brown, E., & Ferris, J. M. (2007). Social capital and philanthropy: An analysis of the impact of social capital on individual giving and volunteering. *Nonprofit and voluntary sector quarterly*, *36*(1), 85-99.

Burgoyne, C. B., Young, B., & Walker, C. M. (2005). Deciding to give to charity: a focus group study in the context of the household economy. *Journal of Community & Applied Social Psychology*, *15*(5), 383–405.

Clark, P. B., & Wilson, J. Q. (1961). Incentive system: A theory of organization. Administrative Science Quarterly, 6, 129-166.

Cull, J. (2006). Mentoring young entrepreneurs: what leads to success?. *International journal of evidence based coaching and mentoring*, *4*(2), 8-18.

Dobrev, S. D., & Barnett, W. P. 2005. Organizational roles and transition to entrepreneurship. *Academy of Management Journal*, 48: 433-449.

Fischhoff, B. (1982). Debiasing. in d. kahneman, p. slovic, & a. tversky (eds.), Judgment under uncertainty: Heuristics and biases (pp. 422-444).

Goss, K. A. (1999). Volunteering and the long civic generation. Nonprofit and Voluntary Sector Quarterly, 28(4), 378–415.

Havens, J. J., & Schervish, P. G. (1999). Millionaires and the millennium: New estimates of the forthcoming wealth transfer and the prospects for a golden age of philanthropy. *Center on Wealth and Philanthropy (Formerly Social Welfare Research Institute), Boston College. Http://Www. Bc. Edu/Cwp*.

Herrmann, M. (2008). The facts (and figures) about fundraising. University Business, 11(1), 18.

Hox, J. J., Kreft, I. G. G., & Hermkens, P. L. J. (1991). The analysis of factorial Surveys. Sociological Methods & Research, 19, 493–510

Lacetera, N., Macis, M., & Mele, A. (2016). Viral Altruism? Charitable Giving and Social Contagion in Online Networks. *Sociological Science*, *3*.

Letts, C., Ryan, W., & Grossman, A. (1997). Virtuous capital: What foundations can learn from venture capitalists. *Harvard Business Review,* (March–April), 35–44.

Lindahl, W. E. (1995). The major gift donor relationship: An analysis of donors and

contributions. *Nonprofit Management and Leadership*, *5*(4), 411-432.
Mahoney, J. T., & Michael, S. C. (2005). A subjectivist theory of entrepreneurship. *Handbook of entrepreneurship research* (pp. 33-54) Springer.
Murray, F. E. (2013). Evaluating the role of science philanthropy in American research universities. *Innovation Policy and the Economy*. 13(1), 23-60.
Nwakpuda, E. I. (2019). Who's Who of Major Donors to STEM: A Quantile Regression Approach. Forthcoming.
Osili, U., Ward, J., Raghavan, S., Bhakta, R., Copple, M., Farris, E., Hyatte, C. (2011). Million Dollar List–Scaling Philanthropy Methodology and Summary Statistics. Indiana University Lilly Family School of Philanthropy
Ostrower, F. (1995). Why the wealthy give: The culture of elite philanthropy. Princeton University Press, Princeton, New Jersey.
Peloza, J., & Steel, P. (2005). The price elasticities of charitable contributions: a meta-analysis. *Journal of Public Policy & Marketing*, *24*(2), 260-272.
Putnam, R. (2000). Bowling alone. New York: Simon & Schuster.
Priem, R. L., & Harrison, D. A. (1994). Exploring strategic judgment: Methods for testing the assumptions of prescriptive contingency theories. *Strategic Management Journal*, *15*(4), 311-324.
Raudenbush, S. W., & Bryk, A. S. (2002). Hierarchical linear models. Applications and data analysis methods (2nd ed.). London: Sage.
Reis, T. K., & Clohesy, S. J. (2001). Unleashing new resources and entrepreneurship for the common good: A philanthropic renaissance. *New Directions for Philanthropic Fundraising*, *2001*(32), 109-144.
Rosqueta, K. M., Noonan, K., & Shark, M. (2011). I'm Not Rockefeller: Implications for Major Foundations Seeking to Engage Ultra-High-Net-Worth Donors. *The Foundation Review*, *3*(4), 9.
Schlegelmilch, B. B., Love, A., & Diamantopoulos, A. (1997). Responses to different charity appeals: the impact of donor characteristics on the amount of donations. *European Journal of Marketing*, *31*(8), 548–560.
Stephan, Paula E. (1996). The Economics of Science. *Journal of Economic Literature*, 34(3), pp. 1199–235.
St-Jean, E., Radu-Lefebvre, M., & Mathieu, C. (2018). Can less be more? Mentoring functions, learning goal orientation, and novice entrepreneurs' self-efficacy. *International Journal of Entrepreneurial Behavior & Research*, *24*(1), 2-21.
Psychology, *33*(2), 379-393.
US Trust. (2016). THE 2016 U.S. trust study of high net worth philanthropy: Charitable practices and preferences of wealthy households.
Van Diepen, M., Donkers, B., & Franses, P. H. (2009). Does irritation induced by charitable direct mailings reduce donations? International Journal of Research in Marketing, 26, 180-188.
Wagner, L. (2002). The "new" donor: Creation or evolution? *International Journal of Nonprofit and Voluntary Sector Marketing*, *7*(4), 343–352.
Winterich, K. P., & Barone, M. J. (2011). Warm glow or cold, hard cash? Social identity effects on consumer choice for donation versus discount promotions. *Journal of Marketing Research*, *48*(5), 855-868.

Wood, M. S., Williams, D. W., & Drover, W. (2017). Past as prologue: Entrepreneurial inaction decisions and subsequent action judgments. *Journal of Business Venturing*, *32*(1), 107-127.

Appendix

Table 1: Operationalization of decision attributes.

Variable	Low	High
Innovative Opportunity	Actions or ideas that are of interest but do not offer new or advanced scientific outcomes or potential.	Actions or ideas that have a direct capacity to produce new or advanced scientific outcomes or potential.
Need	Non-immediate wants and desires that do not hinder current operations of conducting scientific endeavors if not met.	Immediate demands that may stop or hinder current operations of conducting scientific endeavors if not met.

Table 2: Descriptive statistics of variables in experiment one analyses with student participants

Variable	Mean	Std. Dev.	Min	Max
Scenario Ratings	4.422	1.814	1	7
Innovation	0.500	0.500	0	1
Need	0.500	0.500	0	1
Science Discipline	2	0.817	1	3
Female	0.468	0.499	0	1
White	0.741	0.438	0	1
Years of Study	3.010	0.895	1	4
College Experience	1.905	0.293	1	2
Hard Science Skills	0.171	0.376	0	1
Interest in STEM	0.459	0.498	0	1
Interest in Basic Research	0.078	0.268	0	1
Million Dollar Giving	2.439	0.760	1	3
Giving Opportunity	0.727	0.446	0	1
Making a Difference	0.824	0.381	0	1
Inclined to Give	2.313	0.636	1	3

Table 3. Multilevel estimates for scaled willingness to support academic science for student participants

	Willingness to Support (Scenario Ratings 1-7)		
	Entrepreneurship	Public Policy	Both
Innovative Opportunity (ref: Low Level)			
High Level	1.522**	1.276**	---
	(.0697)	(0.0755)	---
Level of Need (ref: Low Level)	---	---	1.182**
High Level	1.186**	1.176**	(0.0525)
Science Type (ref: Medicine)	(-0.0815)	(-0.0882)	
Physical Sciences	1.186**	1.176**	0.0585
	---	---	(0.0643)
Engineering	---	---	-0.377**
	---	---	(0.0643)
Treatment Groups (ref: Control)			
Tax	---	---	-0.00301
	---	---	(0.171)
Prominent	---	---	0.0269
	---	---	(0.167)
Herd	---	---	-0.108
	---	---	(0.167)
Female	-.370*	0.356*	---
	(0.174)	(0.203)	---
White	---	---	0.0188
	---	---	(0.142)
Years of study (ref year one)			
2nd year student	---	---	0.0903
	---	---	(0.290)
3rd year student	---	---	0.494*
	---	---	(0.279)
4th year student	---	---	0.280
	---	---	(0.281)
Positive College Experience	---	---	0.261
	---	---	(0.203)
Interest in STEM	---	---	0.542**
	---	---	(0.225)
Interest in Basic Research			0.484**
			(0.124)
Million Dollar Giving (ref: Below $1 million)			
Max is $1 million	---	---	0.591**
	---	---	(0.192)
Above $1 million	---	---	0.399**
	---	---	(0.165)
Inclined to Give (ref: Non Givers)			
Occasional Givers	---	---	0.305
	---	---	(0.220)
Regular Givers	---	---	0.0755
	---	---	(0.141)
Constant	---	---	1.407**
	---	---	(0.585)

Standard errors in parentheses. Significant of coefficients: * p<0.10 ** p<0.05***p<0.01***

Table 4: Descriptive statistics of variables in experiment two analyses with entrepreneur participants

Variable	Mean	Std. Dev.	Min	Max
Personal Net-Worth	8.16e+07	7.24e+08	25000	8.00e+09
Firm Worth	1.66e+08	8.24e+08	1	9.00e+09
Amount Given to Quantum Scenario(1)	8.43e+06	9.05e+07	0	1.00e+09
Amount Given to Quantum Scenario (2)	8.60e+06	9.05e+07	0	1.00e+09
Income Endowment (60%)	0.320	0.468	0	1
Income Endowment (40%)	0.361	0.482	0	1
Income Endowment (20%)	0.320	0.468	0	1
Female	0.197	0.399	0	1
White	0.828	0.379	0	1
Age	46.283	13.726	21	78
Children	0.615	0.489	0	1
No Doctorate	0.533	0.501	0	1
College Experience	0.533	0.501	0	1
Hard Science Skills	0.467	0.501	0	1
Science Lover	0.393	0.491	0	1
Public Recognition Incentive	0.295	0.458	0	1
Group Giving (herding)	0.598	0.492	0	1
Engaged Donor	0.713	0.454	0	1
Life Satisfaction with Charity	0.598	0.492	0	1
Volunteer	0.689	0.465	0	1

Table 5. Estimates for willingness to support academic science for experiment two for entrepreneur participants.

	Willingness to Support Quantum Science (log($))			
Variables	Amount Given to Quantum Scenario(1)	Amount Given to Quantum Scenario(2a)	Amount Given to Quantum Scenario(2b)	Amount Given to Quantum (RE Model)
log(Personal Net-Worth)	1.079**	1.085**	1.104**	1.074**
	(0.161)	(0.168)	(0.169)	(0.161)
Age	-0.0113	-0.0193	-0.0158	-0.0170
	(0.0276)	(0.0287)	(0.0289)	(0.0276)
Female	0.200	-0.0928	0.0592	0.0146
	(0.736)	(0.768)	(0.781)	(0.737)
< Doctorate	0.0681	0.116	0.150	0.138
	(0.575)	(0.599)	(0.601)	(0.575)
Children (yes/no)	-0.458	-0.0679	-0.143	-0.162
	(0.761)	(0.789)	(0.796)	(0.757)
Herding	3.067**	3.000**	3.257**	2.947**
	(0.602)	(0.623)	(0.656)	(0.598)
Volunteer Time	1.116*	1.006	1.019	1.088*
	((0.616)	(0.643)	(0.644)	(0.617)
Life Satisfaction with Charity	1.124*	1.238**	1.225**	1.114**
	(0.570)	(0.591)	(0.595)	(0.567)
Science Affinity	1.159*	1.054*	1.110*	1.069*
	(0.599)	(0.624)	(0.627)	(0.599)
wave				0.345**
				(0.101)
Income Endowment 40%			0.832	
			(0.715)	
Income Endowment 60%			0.801	
			(0.716)	
_cons	-10.09**	-9.513**	-10.74**	-10.06**
	(3.131)	(3.261)	(3.404)	(3.132)
R2	0.481	0.466	0.476	

Standard errors in parentheses. Significant of coefficients: * p<0.10 ** p<0.05***p<0.01***

Experiment Scenarios

Experiment One

1. Low innovation/High need (natural sciences) Scientific collections are important to scientific progress, reduce the costs of research and enable verification of scientific findings. There is no funding for scientists to catalogue their data and specimens.

	1	2	3	4	5	6	7	
Highly unlikely to support (1)	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)		Highly likely to support

2. Low innovation/Low need (natural sciences) – The Chemistry Department would like to remodel faculty offices.

	1	2	3	4	5	6	7	
Highly unlikely to support (1)	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)		Highly likely to support

3. High innovation/Low need (engineering) -The world is at our finger tips due to our ability to communicate in various ways. Research to engineer new technologies to help people communicate better will further expand our communication options.

	1	2	3	4	5	6	7	
Highly unlikely to support (1)	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)		Highly likely to support

4. High innovation/High need (medicine) Pandemic and epidemic diseases pose an ongoing threat to global health. Advanced scientific, technical and operational knowledge is required.

	1	2	3	4	5	6	7	
	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)		
Highly unlikely to support (1)	•	•	•	•	•	•	•	Highly likely to support

5. High innovation/Low need (medicine) -Synthetic biology is the convergence of advances in chemistry, biology, computer science, and engineering that enables us to go from idea to product faster, cheaper, and with greater precision than ever before. It can be thought of as a biology-based "toolkit" that can fundamentally change how we build biological systems and expand the range of possible products.

	1	2	3	4	5	6	7	
	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)		
Highly unlikely to support (1)	•	•	•	•	•	•	•	Highly likely to support

6. Low innovation/Low need (engineering) – The Engineering School would like to request funding to remodel their meeting and presentation rooms.

	1	2	3	4	5	6	7	
	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)		
Highly unlikely to support (1)	•	•	•	•	•	•	•	Highly likely to support

7. Low innovation/Low need (medicine) The Medical School would like to request funding to remodel their lobby.

	1	2	3	4	5	6	7	
Highly unlikely to support (1)	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)		Highly likely to support

8. High innovation/High need(engineering) – Helping to establish an engineering institute that will conduct basic research to study the ways in which modern engineering techniques in diverse fields can be improved to address national and global problems.

	1	2	3	4	5	6	7	
Highly unlikely to support (1)	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)		Highly likely to support

9. Low innovation/High need (engineering) A new building for the college of engineering would allow all the engineering departments to expand their operations and research endeavors.

	1	2	3	4	5	6	7	
Highly unlikely to support (1)	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)		Highly likely to support

10. High innovation/Low need (natural sciences) -Quantum computing takes a giant leap forward from today's technology—one that will forever alter our economic, industrial, academic, and societal landscape. In just hours, a quantum computer will be able to solve complex problems that would otherwise take billions of years for classical computing to solve. Quantum computing has massive long-run implications for research in healthcare, energy, environmental systems, smart materials, and more.

	1	2	3	4	5	6	7	
	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)		
Highly unlikely to support (1)	○	○	○	○	○	○	○	Highly likely to support

11. High innovation/High need (natural sciences)– The frequency of extreme weather events is increasing. Many communities are left without electricity. There is a need to build affordable and sustainable power solutions. This requires fundamental new understanding in battery storage and distributed power generation.

	1	2	3	4	5	6	7	
	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)		
Highly unlikely to support (1)	○	○	○	○	○	○	○	Highly likely to support

12. Low innovation/High need (medicine) – Remodeling patient rooms at a university owned hospital will help improve the health and safety of patients.

	1	2	3	4	5	6	7	
	1 (0)	2 (1)	3 (2)	4 (3)	5 (4)	6 (5)		
Highly unlikely to support (1)	○	○	○	○	○	○	○	Highly likely to support

Experiment Two

1. Now, we consider philanthropic investments in scientific discovery, which is high risk and expensive. The payoff is an increase in our understanding of the natural world and the creation of innovations with social and economic benefits. Consider this hypothetical philanthropic investment opportunity in quantum physics. A quantum is the smallest possible unit of anything, and quantum physics is the study of these particles and their applications. This field of science is exploding with new opportunities for technology and innovation. To further understand quantum physics click the video link provided.

https://www.youtube.com/watch?v=Dt_PSoZLjPE

Colleges and universities are helping to grow the field of quantum physics. Philanthropy is needed because traditional funding sources have become more restrictive.

Imagine that a university president invited you to lunch to discuss the university's efforts to expand their quantum physics program. The hope is that this quantum physics department will become a leader in quantum physics.

The president would like to meet with you to discuss the specifics of the university's plan and strategy for the expansion of the quantum physics program, which currently only serves a few graduate students per year.

2. The president is able to offer you a philanthropic investment opportunity in quantum physics with the attributes you prefer.

<u>If you were able to make a large gift, how much would you invest in quantum physics?</u>

Remember you previously stated that your personal wealth could reach ______________________if your firm were acquired.

3. One's level of success often exceeds one's own expectations.

If your prediction for the monetary success of your firm is 60% higher than you previously predicted your personal wealth would be _________.

<u>How much would you give to scientific discovery in quantum physics?</u>

4. A group of entrepreneurs similar to yourself are interested in supporting quantum physics at the same university. This group of entrepreneurs has also heard the president's appeal but they want to give as a group to better set the goals of their shared gift.

5. Would you be open to engaging with these entrepreneurs who want to give a large gift to support quantum physics?

- Yes
- No
- Maybe If: ____