BEHAVIOURAL PHILANTHROPY

Harnessing behavioural sciences to design more effective tax incentives for philanthropy

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1 Introduction: individuals and charitable giving

Philanthropy can be defined as voluntary giving for the common good and as such codified by the Sustainable Development Goals (SDGs).¹ Non-profit organisations and charities are among the most prominent actors in the context of philanthropy. They are essential contributors of public goods and services that governments often fail to provide (Kingma, 1997). Such organisations are mostly supported by individual donations (Havens, O’Herlihy and Schervish, 2006). For example, according to Giving USA (2020), individual donations amounted to 68.9% (or \$309.66 billion) of the total \$449.64 billion donated in the United States in 2019. These numbers are even more remarkable considering that donations by corporations only amounted to 4.7% (or \$21.09 billion) during the same period. These patterns in donations have been consistently observed over time. Further, over the past 10 years, both total donations and individual donations have been increasing, which is another encouraging trend (see Figure 20.1). However, a closer look at Figure 20.1 reveals a worrisome fact: the upward trend of donations by individuals is losing momentum. For instance, in 2009, individual donations amounted to 74% of the total, whereas in 2019, they only amounted to 69% of the total. Moreover, the number of people who give to charity annually has significantly decreased over the past years (Osili, Clark and Han, 2019). Taken together, these findings underscore the importance of identifying mechanisms that can reverse these worrying trends and increase not only the amount of donations but also the number of donors (Laffan and Dolan, 2020).

In recent years, there has been an increasing focus on the relevance of behavioural science regarding individuals’ everyday decisions as well as societal policies. Behavioural economics’ insights have been used to develop new policy tools that increase organ donations (Johnson and Goldstein, 2003) and pension contributions (Thaler and Benartzi, 2004), improve carbon emission offset (Weber and Johnson, 2012), and help reduce poverty (World Bank, 2014). Thus, it is very likely that insights from behavioural sciences can contribute to philanthropy as well. For instance, one intriguing application of behavioural sciences in philanthropy is to inform and design optimal public policies and fundraising mechanisms aimed at promoting giving by individuals. To investigate why people contribute to public goods and charities, one can

Figure 20.1 (Colour online):² Real charitable giving growth in the United States, along with the Standard & Poor's 500 Stock Index for comparison over time (2009–2019). The gap between total donations and individual donations is growing over the years

Source: Data on the trends of total charitable giving and individual charitable giving in the United States were retrieved from Giving USA Foundation. Yearly reports are based on the estimates of IRS Form 990 (a tax exemption form completed yearly by a non-profit organisation), which are econometrically adjusted based on information from other research institutions

empirically determine, in laboratory settings, individuals' motives that drive charitable giving. While such motives are difficult to determine from data on actual donations, such as surveys, tax returns, or charitable level data, laboratory experiments and experimental techniques offer a useful alternative.

In the following section, we introduce the new interdisciplinary field of behavioural philanthropy, an approach that combines insights and methods of disciplines that investigate philanthropy from a broader perspective, such as sociology that utilises surveys and case studies to investigate how policies may impact philanthropy at the societal level, with those of disciplines that analyse the determinants of philanthropy at the individual level, such as behavioural economics that relies on experiment-based research to provide a mechanistic understanding of philanthropic behaviour and its determinants.

Enter behavioural philanthropy

The academic literature on philanthropy has been growing over the past 20 years (see Figure 20.2). Although the literature is spread across the disciplines of economics, law, psychology, and sociology, among others, we simplified the categorisation of these approaches into two levels: macro-surveys and micro-experimental levels.

Figure 20.2 (Colour online):³ Number of publications on ‘charitable contributions’ over time (2000–2020). The fitted line represents logistic regression

Source: Data on the number of publications were extracted using the Dimensions AI database (Hook, Porter and Herzog, 2018)

The prevailing approach in philanthropic research has been at the macro level, relying on archival tax data and cross-sectional surveys (Bekkers and Wiepking, 2011). Studies that use surveys have identified important correlates of charitable giving, such as religion, age, education, and socialisation practices (for review, see Wiepking and Bekkers, 2012). Such surveys usually involve a large number of respondents and are therefore relatively thorough and can detect small effects (see Figure 20.3). Most of these questionnaires often ask about real-life behaviour, as surveys are generalisable and ecologically valid such that they can be applied to other real-life situations. While survey and tax data provide an insightful line of research for philanthropy, the biggest flaw of this approach is the lack of evidence to support causal inferences; given that mostly correlational data are used, survey measures do not provide insights on the causality of the observed relationships between external factors, predictors, and behaviour. Therefore, due to the lack of a mechanistic explanation, findings in this domain often have several possible explanations for the relations identified, which are not mutually exclusive. For example, while there is a lot of descriptive knowledge about who gives, little is known about why some people give more than others or why some people may be more inclined to give to a specific cause instead of another. Cross-country surveys

Figure 20.3 (Colour online):⁴ Overview of the advantages (above) and disadvantages (below) of macro- and micro-level research

can also be a costly and time-consuming method of data collection, and while taxation studies frequently provide longitudinal data, they are usually collected only once a year. Another notable drawback of this type of data is that it relies on self-reports. Since philanthropy is a prosocial behaviour, it might be impacted by self-serving biases, such as social desirability and self-deception. As such, one could expect that people may report wrong information about desirable outcomes (i.e., more donations), thus impacting results. Even when participants want to be honest, the results might vary depending on the respondent's level of introspection (Wallendorf and Brucks, 1993).

In the past years, there has been a rise in micro-level research, especially in the fields of psychology and behavioural economics, which investigates philanthropic behaviour at the level of individuals or small groups by relying on controlled causal manipulations. Studies using such experiments provide an additional answer to how and why some people engage in philanthropy more than others and thus enhance the potential to inform policymakers looking for effective mechanisms to stimulate individual giving, for instance, through tax incentives. The experimental designs are flexible to different experimental manipulations and provide evidence of how philanthropic behaviour changes with environmental parameters. For example, how does philanthropic behaviour change when a country introduces a new tax subsidy scheme? Does an increase in taxation of individual wealth affect charitable donations? These manipulations can be studied in laboratory settings and are an important step in building predictive models that aim to capture the rationale behind people's decision-making. Such empirical knowledge provides insights into individual differences and establishes a basis for predictive models of philanthropic behaviour. However, experimental data are usually not reliable, generalisable, or ecologically valid because the evidence gathered in these controlled and simplified experiments often prevents drawing generalised inferences that could predict behaviour outside the laboratory setting. Another disadvantage of such experiments is that most of them are conducted on a 'Western,

educated, industrialised, rich, and democratic' (WEIRD) (Henrich, Heine and Norenzayan, 2010) sample and therefore lack explanatory and predictive validity on the behaviour of the majority of the population. However, with recent advances in online platforms (such as Prolific and Mechanical Turk), online experiments are not only cost and time effective but also allow testing of the same designs on a country or global scale and across representative samples. Since tax cultures, and thus incentives, may differ depending on the region (see, for instance, the typology of the tax systems of the OECD countries proposed by Wagschal, 2015), such studies not only offer a very detailed overview at the country level but also extend and compare these findings to those of other cultures and countries.

Behavioural philanthropy proposes to generate novel theoretical models that are capable of providing mechanistic explanations of philanthropic behaviour by relying on evidence gathered in controlled experiments at the individual and group levels. Obtaining such evidence can be instrumental in forming policies and best practices for philanthropic actors. In the context of this book, it is important to stress the relevance of this approach by providing solid evidence regarding data-driven incentive schemes.

The challenge for behavioural philanthropy is to elaborate on existing economic models to deliver psychological realism that does not depend only on specific cases. We propose that combining the cognitive psychology studies on individual motivations for philanthropy and matching these insights with well-defined theories and methodologies of behavioural economics will allow a better understanding of the mechanisms that drive human (charitable) behaviour. To provide reliable evidence capable of informing policymaking and supporting other practical applications, we must carefully design research that ensures that behavioural philanthropy: 1) addresses socially and ecologically valid questions, 2) uses appropriate methods to answer these questions, and 3) develops theories that are well defined and supported by computational models that can predict philanthropic behaviour at both the micro and macro levels.

2 Literature review: identifying the motives of giving through psychology and economics

Understanding motives is crucial for solving one of the economic puzzles that philanthropy poses, namely why self-interested agents work hard to give away their earnings (apparently) unselfishly. In the following discussion, we analyse some of the most common motives that drive philanthropy as identified by researchers.

Personal material benefits – spillover effects

To address the donor's puzzle (see previously), the micro-donor-centric utility-based approach proposes that one of the crucial motives for philanthropy is that it provides benefits for both the recipients and the donors (Becker, 1974). In this spirit, early economic theories have proposed that philanthropy is not unselfish and that self-interested agents might give because they will benefit from these donations (for review, see Andreoni, 2006). For example, donating to medical research (for example, in COVID-19 times) may help donors benefit from the findings (i.e., vaccines) in the future. A second example is illustrated by so-called enlightened self-interest, which suggests that individuals may give to the poor to keep an institution in place that would take care of them in case they become impoverished (Andreoni, 2006).

Personal psychological benefits – self-image effects

While the personal spillover effects of charitable giving reconcile the apparent dissonance between self-interest and philanthropy, this motive fails to explain why individuals engage in philanthropic activities even when it is extremely unlikely that they might experience any benefits. For instance, why would individuals donate to relieve poverty on another continent, or why do people decide on charitable bequests (after their death)? In both of these scenarios, the individual has little to no chance of directly generating any personal benefit.

An alternative explanation is that donors do not derive a direct (or indirect) economic utility from giving but rather a psychological one: people feel good when they do good. This view has been referred to as ‘warm-glow’ giving, in which a donor gets an emotional reward by giving to others (Andreoni, 1990). This perspective has been supported by several empirical findings (Ottoni-Wilhelm, Vesterlund and Xie, 2014). Moreover, self-image theories use a dual self-approach to account for self-image as a motivation (Ariely, Bracha and Meier, 2009). As such, the dual self serves as an observer of one’s own actions and provides signals about one’s own identity (Bodner and Prelec, 2003; Bénabou and Tirole, 2006). Mazar, Amir, and Ariely (2008) suggested that people try to find a balance between two motivational forces (i.e., cheating and getting higher material payoffs and maintaining the self-image of being honest).

Long-term strategic benefits – social signalling

A large body of evidence demonstrates that one can use philanthropic giving as a strategy to promote or signal one’s social image. For instance, previous studies found that public recognition increases not only volunteer work (Linardi and McConnell, 2011) and effort in charitable fundraising (Ariely, Bracha and Meier, 2009) but also the willingness to donate blood (Lacetera and Macis, 2010), as well as the likelihood that people will respond to fundraising appeals (Karlán and McConnell, 2014). Strategic motives for philanthropy have been captured by two main theoretical models that speculate that such motives are observed either because donors want to signal their altruism to others and receive social image benefits (i.e., ‘I am generous’) (Harbaugh, 1998a; Harbaugh, 1998b; Andreoni and Petrie, 2004; Rege and Telle, 2004) or because donors want to encourage others to give through social influence (i.e., ‘follow my lead’) (List and Lucking-Reiley, 2002; Shang and Croson, 2009; Bracha, Menietti and Vesterlund, 2011).

Intrinsic and extrinsic motives

Intrinsic moral motivation is another dominant driver of philanthropy. While it can be hard to directly assess the relevance of moral motives in promoting giving due to experimental demand effects, it is possible to quantify its relevance by measuring ‘moral crowding-out’, that is, the observed detrimental effects of adding extrinsic material incentives to stimulate a given behaviour (e.g., donating to charity, voting, etc.), which is motivated by intrinsic moral motives. Such effects have been documented in several studies that have demonstrated the economic inefficiency of extrinsic incentives on intrinsically motivated behaviour (for a review, see Promberger and Marteau, 2013). In 1970, Titmuss hypothesised that paying for blood donation would undermine the social utility of the intrinsic motivation of the act and have negative consequences on blood donations. Accordingly, a meta-analysis (Niza, Tung and Marteau, 2013) of Titmuss’ hypotheses suggested that economic incentives are inefficient in the blood donation context. Similarly, Venkataramani et al. (2012) found that tax incentives do not boost

organ donation. In the charitable giving context, Nelson et al. (2006) implemented egoistic (emphasising that donated money will benefit oneself as well as helping others) and altruistic (emphasising that donated money will benefit others in need) ads and found that altruistic ads were preferred by people whose charitable behaviour was motivated by intrinsic factors.

Despite these findings, it is still unclear how extrinsic incentives influence philanthropy. For instance, Falk and Zehnder (2013) found that the impact of gifts on possible donors influenced the frequency and amount donated in different directions. Compared to the no-gift condition, in which the relative frequency of donations was 12%, small gifts (one postcard with one envelope) increased the frequency of donations by 2% points (to 14%), and large gifts (four postcards with four envelopes) increased the frequency by 9% (to 21%). While these frequency differences were significant, the net donations were significantly lower between the no-gift and the large-gift conditions but not between the no-gift and small-gift conditions and between the small- and large-gift conditions. Interestingly, while only suggestive, those receiving no gift were more likely to donate large amounts (>200 CHF), whereas those receiving large gifts were more likely to donate smaller amounts. Furthermore, another study looked at how financial incentives in the form of tax-matching or tax-rebate schemes can impact individuals' donations to charitable giving. Here, it was shown that in a dictator game setting (see Section 3 and Forsythe et al., 1994), matching schemes had a stronger effect on incentivising donations as compared to the effect of rebate schemes (Peng and Liu, 2020). Finally, additional studies that have investigated the role of gifts in charitable donations found mixed results ranging from no effect in an online fundraising campaign offering products (Chen, Li and MacKie-Mason, 2006) to a negative effect on the amount contributed by donors to a natural park in Costa Rica (Alpizar, Carlsson and Johansson-Stenman, 2008). Such mixed evidence regarding the effect of incentives on charitable giving calls for future meta-analysis and replication studies.

Social norms, rules, and mimesis

Social norm theory in sociology (Schwartz, 1977) suggests that the likelihood that individuals will adopt charitable giving depends on whether such behaviour is approved, shared, and expected by the group or society and is considered a social norm. Social norms can be explicitly written in the teachings of many religions globally with a common consequence; that is, to give purely altruistically is the true essence of giving, as expressed in the Jewish Torah and the teachings of the Quran. The role of social norms in stimulating philanthropic behaviour has been established in existing studies that demonstrated that when participants are explicitly told that the social norm is to contribute to charity, the likelihood of their donating money increased (Agerström et al., 2016).

Modulators of individual motivations

The previous paragraphs provide an overview of some of the economic, psychological, and societal motives for charitable giving. Such motives are not important solely from the perspective of theoretical works (Bonar, 1926) but also because they provide a solid basis for designing experimental paradigms that can test predictions in a laboratory setting. For example, one could design an experiment to understand how the source (e.g., gifted vs. earned) of one's wealth may modulate the impact of self-image motivation and warm glow on one's decision to give. In this vein, a previous study (Erkal, Gangadharan and Nikiforakis, 2011) investigated whether

participants' earnings were the result of effort or obtained through effort and luck. The results revealed that participants with the highest wealth were less likely to contribute to wealth redistribution among their social group's peers, irrespective of whether their wealth was obtained by exerting higher effort or due to effort and luck. Thus, these results demonstrate that the source of one's wealth does not seem to impact one's decision to give back to society. In the context of philanthropy, based on these findings, a theoretical model has been proposed (Mayo and Tinsley, 2009) which states that a similar behavioural pattern would be observed in the context of charitable giving; that is, perceptions of effort and luck as the cause of reward distribution would systematically reduce the warm glow giving of higher-earnings households and thus lead to lower contributions to charity by wealthier individuals.

Other possible modulators of individual motivations could be the perceived effectiveness of a philanthropic organisation or individual preferences for a given charity. In other words, are people more strongly motivated to give to charities that maximise impact and produce the greatest welfare gains? Or are more efficient philanthropic organisations the most popular ones? While normative economics models of charitable giving suggest that individuals should be motivated to give to charities that maximise welfare, descriptive accounts show that individuals often do not maximise the outcomes of their donations (Berman et al., 2018); however, they are more sensitive to efficacy when helping themselves or their families (Burum, Nowak and Hoffman, 2020). Therefore, lab studies could investigate and disclose whether and how individual preferences for charities and charity efficacy impact intrinsic moral motivation and therefore charitable giving.

To conclude, as the previous examples illustrate, there is a strong need for novel data that are capable of isolating the different factors that modulate individual motivations and informing computational models of individual philanthropic behaviour. To obtain this data, behavioural philanthropy proposes using methods from behavioural economics and game theory to investigate philanthropic decision-making with experimental games in controlled lab settings.

3 Testing models of individual charitable giving: behavioural/experimental game theory and social preferences

Behavioural game theory has developed experimental games, wherein: 1) the decisions of the player can impact other individuals' payoffs, and/or 2) the player's payoff may not only depend on their own decisions but also on the decisions of others. By altering the payoff rules of different parties, such games can be used to reproduce the elementary tensions that govern decision-making in social contexts and therefore constitute the most convenient experimental tools to investigate individual motives in social contexts (Camerer, 2003).

The main goal of this section is to introduce behavioural game theory as a powerful and flexible framework for behavioural philanthropic research on charitable decision-making. First, we present two of the most pertinent games for the studies of philanthropy, namely the dictator game, which is the one most widely used games in the study of social preferences such as altruism and inequity aversion, among others (Vesterlund, 2016), and the public good game, which, although widely studied in the economics of cooperation (Fischbacher, Gächter and Fehr, 2001), is overlooked in charitable giving research. Following this, we highlight three major advantages of using these games for investigating charitable decision-making; that is, they measure actual behaviour and are properly incentivised, allow researchers to infer causality, and are highly generalisable and comparable.

Economic games to model charitable decision-making

Dictator game

The dictator game is one of the simplest games and a useful tool for investigating generosity and altruistic motives (Forsythe et al., 1994). It features two players: the dictator and the recipient. The dictator is endowed with an amount of money and asked to divide this endowment with the recipient. The recipients' role is entirely passive, since they can neither send some of the transferred money back (as in the trust game) nor reject the offer (as in the ultimatum game). For example, if the dictator is endowed with 10 dollars (E) and decides to allocate 2 dollars (x) to the recipient, the dictator receives 8 dollars ($E - x$), and the recipient receives 2 dollars (x). As such, the dictator game measures how much dictators give under experimentally manipulated conditions to mimic giving in charitable settings. The more money the dictators transfer, the more prosocial they are toward the recipient.

Rational choice theory predicts that the dictator will act solely out of self-interest, maximise his payoffs by keeping the largest amount possible, and thus give nothing (zero) to the recipient. However, empirical studies have reported that giving behaviour in a dictator game is consistently and significantly larger than zero. A recent meta-analysis reported that, on average, dictators gave 28.35%, while the distribution of means was left skewed; 36.11% of all participants gave nothing, 16.74% gave 50% (equal split), and as many as 5.44% of all participants gave 100% of their endowment to the recipient (Engel, 2011).

However, the classic setup features another (anonymous) participant as the recipient (e.g., Forsythe et al., 1994), and later studies looked at transfers to recipients outside the laboratory, such as Hurricane Katrina victims (e.g., Fong and Luttmer, 2009) or let an existing non-profit replace the role of the recipient (e.g., Eckel and Grossman, 2006b) and found contrasting results. Although changing the recipient does change the giving amounts, the theoretical predictions (everyone behaves self-interestedly and gives nothing) are never met, and most participants decide to give in laboratory as well as non-laboratory settings.

Public good game

While the dictator game focuses on binary interactions (one person deciding to give to another person, entity, or charity), the public good game was designed to investigate decision-making within group dynamics.

Participants in the public good game are first paired in groups and are each given an amount of money that they can individually allocate between a personal account and a public common pool. The money in an individual account benefits only the individual; the money in the public pool benefits the entire group and is typically also increased by the experimenters, as it is multiplied by a predefined rate. Importantly, group benefits are equally distributed across all individual members regardless of whether they contribute to the public good. The design of public and private earnings is set to mimic everyday situations/dilemmas of public goods (i.e., contributing to public transport, health insurance, and public education). In particular, on the one hand, the entire group earns the highest profit when all members contribute all of their resources to a public good (for a review, see Menietti et al., 2018). On the other hand, free riders can increase their payoff by contributing nothing and still benefit from the common pool (see Figure 20.4, a player in red). Such behaviour (as in real life) creates a socially inefficient situation and is called the free-rider problem.

Figure 20.4 (Colour online):⁵ Overview of the two economic games' settings for studying charitable decision making: Dictator game (upper part) and public good game (lower part)

Empirically, contributions in the public good game typically start off around 50% of endowments and then decrease with repetition but remain substantial even when participants have had time to gain experience in the game (see, e.g., Isaac and Walker, 1988; Ledyard, 1995; Croson, 2007, 2008; Holt and Laury, 2008 for reviews). Such contributions can be seen as evidence that individuals are concerned about others' welfare. Thus, by manipulating the incentives to give, we can determine how certain parameters and mechanisms influence contributions to others. For example, the introduction of an altruistic punishment option, in which individuals can punish free riders (who do not contribute to the common good), increases public cooperation. Interestingly, such punishments work even when they are costly for individuals who decide to punish, and there is some evidence that negative emotions toward defectors influence such altruistic punishment (Fehr and Gächter, 2002). This has been supported by a neuroscientific study by Strobel et al. (2011), who found that reward-related regions of the brain (nucleus accumbens) showed punishment-related activation.

In this context, studies in different disciplines (including law, management, economics, and public policy) have revealed that beliefs, feelings, and behaviours of people within groups influence individual decisions regarding cooperation and promotion of the group good over the selfish benefit. As such, the public good game captures how the incentive to behave selfishly affects the interaction between potential donors and groups.

Advantages of economic games

Accurately measuring behaviours

One of the main strengths of economic games is that they allow researchers to observe and assess actual behaviours. Such games connect the strategic decisions of multiple individuals to group-level outcomes through precisely defined mechanisms. In contrast, much of the research

in law and social science has conducted surveys aimed at eliciting self-reports of behaviour and participant perceptions. Such self-reports and perceptions can be biased, especially when self-serving, social desirability, and self-deception biases come into play (Lee and Sargeant, 2011). The decision-making context in economic games is monetarily incentivised to increase value and create real stakes and dilemmas (between personal gains and cooperation) that will motivate individuals to reveal their true behaviour and mimic real-life situations. Although economic games are simplified and cannot include all factors from complex real-life settings, they nevertheless provide a setting that is more comparable to a real-life scenario as compared to hypothetical survey scenarios.

Inferring causality

An important element of any theory is the understanding and description of causal relationships (Muthukrishna and Henrich, 2019). Such insights are also important for practitioners and organisations that develop interventions based on theories and experimental findings. One of the biggest problems of field research is that it usually has an endogeneity problem, which refers to a scenario in which unmeasured or omitted variables could explain the resulting correlation. In contrast, participants in economic games are usually randomly assigned to different conditions and experimentally controlled to rule out alternative explanations. Such settings allow experimental manipulations to be imposed, thus providing mechanistic (i.e., causal) explanations of how people decide.

Adaptability, comparability, and replicability

Economic games provide great flexibility, and their baseline designs are usually simple and adaptable to the specific research questions that mirror situations in which people have to decide whether they would trust, cooperate, free ride, or be fair. While survey questionnaires are usually greatly varied, economic games have standard designs, and their richness and complexity can be modified as required. Economic games, therefore, provide an opportunity to achieve adaptability, comparability (to other studies), and replicability (of findings and their generalisability).

Economic games and behavioural philanthropy

A general framework

To further explore the different factors that influence charitable giving, we believe that both the dictator game and public good game can offer a clear and well-controlled setup for analysing charitable decision-making. By randomising experimental treatments, providing a baseline condition, and testing representative samples, such studies will provide implications more clearly and quickly and avoid the endogeneity issues in field experiments.

As in all economic games, there is no deception involved, and participants know that they receive real incentives and the money will go to the selected charity. This not only provides insights into personal preferences in which people's self-interest competes with self-image but also allows us to test the efficiency of different motivations that mirror decisions in real settings (such as tax incentives, warm-glow giving, social signalling, etc.). Furthermore, since public good games entail group interactions, this facilitates the study of the influence of social factors such as norms, social comparisons, and social signalling on individual and group behaviour.

Toward a more ecological framework

Although such games mirror everyday dilemmas, we believe that further improvements to provide an even more ecologically valid framework are possible. In the following paragraphs, we discuss some fundamental adaptations and manipulations that can increase the relevance of public good games as the tool of choice to investigate individual motives for philanthropy.

First, a common practice in dictator and public good games is to provide participants with endowments that serve as their capital and participants use such ‘free’ endowment when making decisions. There has been empirical evidence suggesting that such ‘given’ money, so-called house money, might be treated differently, and people take more risks when playing with it as compared to using their regular income (Thaler and Johnson, 1990). To avoid such distortion, a simple addition to economic games might be a working task in which participants earn money before playing economic games. Then, we will be able to provide insights into how varying sources of money (e.g., whether higher rewards are earned by luck or effort) impact decision making and how individual decisions are influenced by the nature of the money (i.e., free endowment vs. earned income) (Erkal, Gangadharan and Nikiforakis, 2011; Tonin and Vlassopoulos, 2017). Moreover, manipulating the level of effort can enable us to test how warm-glow motivation plays a role in giving, investigate the meritocratic aspects of giving (Mayo and Tinsley, 2009), and reveal how income inequality impacts giving behaviour (Gee, Migueis and Parsa, 2017). Importantly, these endowments should not be confused with the incentive schemes that are characteristic of public good games, which entail growing public wealth by multiplying the individual contributions of individuals to the public good by a pre-determined factor. These incentives are ecologically sound, as they mimic existing schemes, such as tax rebates or matching, that governments frequently decide to implement to stimulate private investments in a given area such as philanthropy.

Second, manipulating the participants’ level of information in public good games can explain the role of subjective and objective social comparisons in giving. We believe that studies should also look into whether behaviour in games is generalisable with respect to real-life behaviour, for example, by combining experimental data with reports on real donations.

4 Behavioural philanthropy and tax incentives

In this section, we illustrate how the behavioural approach to philanthropic giving can help address important practical questions. Accordingly, we focus on individual reactions to tax subsidies. To incentivise more individuals to donate and greater amounts of donations, many countries have implemented subsidies as tax deductions, tax credits, allocation, or matching schemes. Identifying the best subsidy mechanism and understanding how it is perceived by individual taxpayers is fundamental to promoting charitable giving.

Incentives for charitable giving: rebate and match subsidy

Most empirical studies have investigated subsidies such as rebate or match subsidies. In a tax rebate subsidy, a fraction of the donor’s contribution is refunded by a government and/or third party, while the charity still receives the entire amount donated. Alternatively, the match subsidy supplements the donated money; both the individual’s contribution as well as a matching payment by the government and/or third-party subsidy are given to the charity. Theoretically, the rebate (r) and match subsidy (m) predict identical effects on individuals’ net donations: $m = r/(1 - r)$, and the total amount a charity receives should be the same regardless of the

subsidy type. For example, a 1 (donor contribution):1 (government contribution) matching scheme should be equivalent to a 50% rebate subsidy: when a 50% tax rebate (subsidy) is applied, an individual donor contributes 1 dollar, and the government refunds 50% of the donation (0.5 dollars) to the donor; thus, the charity receives 1 dollar, and the cost of donation for a donor is 0.5 dollars. When a 100% match subsidy is applied and an individual donor contributes 0.5 dollars, the government also donates 0.5 dollars; thus, the charity receives 1 dollar, and the cost of donation for a donor is 0.5 dollars, which is expressed by the following equation: $1 = 0.5 / (1 - 0.5)$. Similarly, a 2:1 matching scheme is equivalent to a 33% rebate, and a 4:1 matching scheme is equivalent to a 20% rebate.

Empirical studies: matching subsidy stimulates more giving to charities than rebate subsidy

Strikingly, despite the mathematical equivalence between the two subsidy mechanisms, both laboratory- and field-based empirical studies have repeatedly observed that match subsidies raise more money for charities as compared to rebates that are equally costly for the donor.

Eckel and Grossman (2003) conducted the first lab study to investigate whether charitable decisions are the same under equivalent match (100%, 33%, or 25% match) and rebate subsidies (50%, 25%, or 20% rebate). Employing a modified dictator game, participants ($n = 181$, students from the University of Texas) were asked to divide different amounts of endowments (40, 60, 75, or 100 tokens; each token value \$0.10) between themselves and a charity of their choice. The findings showed that under the match subsidy condition, charity received 1.2 to 2 times more money than that of the rebate subsidy. Several experimental studies have replicated the finding that matching subsidies lead to higher charity receipts and larger price elasticity as compared to rebate subsidies (see Table 20.1). Moreover, findings from laboratory experiments were replicated in field studies; however, although the difference between the rebate and match subsidy in total charity receipts was significant, it was smaller than that of the findings reported in laboratory studies (see Eckel and Grossman, 2008, 2017; Bekkers, 2015).

Several previous studies have examined the impact of different rates under matching and rebate conditions (see a summary of the existing studies in Table 20.1). Karlan and List (2007) conducted a natural field experiment to investigate how different match ratios (donation: match of \$3:\$1, \$2:\$1, \$1:\$1) impacted revenue per solicitation and response rate. Contrary to intuition and standard economic theory predictions, higher match ratios (\$3:\$1, \$2:\$1) did not have a different impact on donations as compared to that of smaller match ratios (\$1:\$1). Moreover, this study also found that match subsidy increased both the likelihood of contributions (by 22%) and the amount given (by 19%) as compared to the no-subsidy condition. However, the effect of match subsidy relative to the control treatment could not be confirmed in a follow-up study (Karlan, List and Shafir, 2011). Therefore, future laboratory and field experiments are needed to establish how effective match and rebate subsidies are relative to the control treatment (i.e., the no-subsidy condition).

From both the non-profit and government perspectives, it is important not only to provide clear and replicable evidence on how effective specific subsidies are but also to examine the long-term consequences of implementing different subsidies. In other words, does more giving in match conditions result in less giving in the future? Meier (2007) conducted the first field experiment on student tuition among students at the University of Zurich. While the randomly assigned matching mechanism increased contributions at the start, once the matching subsidy stopped, the contribution rate declined. Furthermore, this decline was strong enough to outweigh the positive effect and ultimately had a negative net effect on the participation rate.

Table 20.1 Review of matching and rebate subsidies on charitable giving in laboratory experiments

<i>Paper</i>	<i>Methodology</i>	<i>Main manipulation</i>	<i>Design</i>	<i>Rebate vs. match rate</i>	<i>No. of subjects</i>	<i>Pool</i>	<i>Main findings</i>	<i>Differences on net donations</i>	<i>Comments</i>
(Eckel and Grossman, 2003)	Modified dictator game: subject makes a series of allocation decisions to divide an endowment between himself and a charity he chooses from a list of five charities	The decision problems differed by: 1) endowment (40, 60, 75, or 100 tokens), 2) the cost to the subject of contributing \$1 to the charity (\$1, \$0.80, \$0.75, and \$0.50), and 3) match and rebate condition	Within-subject repeated dictator game.	Rebate rate: 20, 25, and 50% Match rate: 25, 33, and 100%	181 subjects	Undergraduate and graduate students at University of Texas at Arlington	Under match subsidy, charity received significantly more than under rebate subsidy	Authors did not report the net donations when no subsidy is applied (\$1 costs \$1) for three out of four conditions (\$3, \$7.50, \$10); therefore, comparison is only possible for \$6 endowment: there is a significant increase of net donations between no subsidy and match subsidy, as well as between no subsidy and rebate subsidy	The result of donations is reported for sample size = 135
(Davis, Millner and Reilly, 2005)	Modified dictator game: subject makes a series of allocation decisions to divide an endowment between himself and a charity (Feed the Children).	The decision problems differed by: 1) endowment: \$8, \$12, \$2) the cost to the subject of contributing \$1 to the charity (\$1.00, \$0.67, and \$0.50), and whether the reduction in cost is a result of a rebate or a portion of matching	Within-subject repeated dictator game	Rebate rate: 33%, 50% Match rate: 50%, 100%	43 subjects	Mostly undergraduate students at Virginia Commonwealth University	Under match subsidy charity received significantly more than under rebate subsidy	There is no difference between net donation of match and no subsidy; however, rebate is significantly lower both from match and from no subsidy. This effect is the same for \$8 and \$12 endowments	Three experiments reported differ in: 1) control, 2) rewards in investment context, and 3) full information treatment (with table describing all possible outcomes)

(Continued)

Table 20.1 (Continued)

<i>Paper</i>	<i>Methodology</i>	<i>Main manipulation</i>	<i>Design</i>	<i>Rebate vs. match rate</i>	<i>No. of subjects</i>	<i>Pool</i>	<i>Main findings</i>	<i>Differences on net donations</i>	<i>Comments</i>
(Eckel and Grossman, 2006b); Subsidising	Modified dictator game: subject makes a series of allocation decisions to divide an endowment between himself and a charity (Feed the Children)	The decision problems differed by: 1) endowment (\$4, \$6, \$7.5), 2) the cost to the subject of contributing \$1 to the charity (\$1, \$0.80, \$0.75, and \$0.50), and 3) match and rebate condition	Between-subject (rebate vs. match) repeated dictator game	Rebate rate: 20, 25, and 50% Match rate: 25, 33, and 100%	96 subjects	Saint Cloud State University	Under match subsidy, charity received significantly more than under rebate subsidy	There is no control group which would not get any subsidy	
(Eckel and Grossman, 2006a); Do Donors	One-shot dictator game	Participants could decide whether they would like to implement match or rebate subsidy. Endowment was \$20	Between-subject dictator game	Rebate rate: 50% Match rate: 100%	120 subjects (and 4 monitoring participants)	Saint Cloud State University	53 selected matching subsidy, and 67 selected rebate subsidy	While the net donations were not significantly different between match and rebate, the amount charities received was significantly higher in match than in rebate condition	
(Gandullia and Lezzi, 2018)	Modified dictator game: subject makes a series of allocation decisions to divide an endowment between himself and a charity from the list (The	The decision problems differed by: 1) endowment (\$1.5 and \$2), 2) the cost of contributing \$1 (\$1, \$0.80, \$0.75, and \$0.50), and 3) match and rebate condition	Within-subject design	Rebate rate: 20, 25, and 50% Match rate: 25, 33, and 100%	333 participants	Amazon Mechanical Turk platform	Under match subsidy, charity received significantly more than under rebate subsidy	While the net donations were not significantly different between match and rebate, the amount charities received were significantly higher in match than in rebate condition	Correlational data: males are less altruistic than females, older participants donate more than participants younger than 35 in both subsidy

Red Cross, WWF, Save the Children, and Doctors without Borders)	types, and Democratic participants are more altruistic than strongly Republican only under the rebate subsidy. Probability of giving increases monotonically along with subsidy rates, and participants who usually donate are more likely to give and less responsive to price changes
(Peng and Liu, 2020)	Modified dictator game: subject makes a series of allocation decisions to divide an endowment between himself and a charity (Feed the Children)
	The decision problems differed by: 1) the cost of contributing \$1 to the charity (\$1, \$0.75, and \$0.50) and 2) match and rebate condition
	Between-subject design
	Rebate rate: 0, 20, and 50% Match rate: 0.25, and 100%
	165 participants
	National Taipei University
	Under match subsidy, charity received significantly more than under rebate subsidy. Rebate subsidy was not significantly different between the three different costs of contributions
	Individual net donations were higher under match than under rebate

A large national study in the Netherlands (Bekkers, 2015) found that nine months after the matching campaign, there was no difference in contributions between individuals whose donations were matched and those whose donations were not matched. In contrast, other studies (Karlan, List and Shafir, 2011; Kesternich, Löschel and Römer, 2016) found a positive increase in contributions after the experiment but only in the specific condition of a 1:1 match subsidy. Overall, these findings report very mixed results of subsidies in the long term, and future longitudinal studies are needed to better address the factors that might explain these inconsistent results.

While previous studies established that match subsidies increase charity receipts, recently, Peng and Liu (2020) explored whether match subsidies increased individual net donations. Moreover, given the large amount (about 2% of GDP) donated annually in the United States, another important aspect is the amount donated by government or third-party donors under subsidies such as match or rebate. To provide evidence on these two important questions, further studies that compare match, rebate, and control (no subsidy) conditions and highlight not only the charity receipts but also net donations and cost for government and/or a third party who subsidises the donations are required. Therefore, the verdict for the most optimal donation design, which accounts for the costs and benefits of different subsidies, is still ongoing, and more research that implements representative samples and avoids using house money is needed.

Speculations on what drives the different behavioural outcomes

There have been some speculations and explanations from cognitive psychology regarding why theoretically similar match and rebate conditions would provide different behavioural outcomes. One of the first factors investigated was the role of confusion. In Davis, Millner, and Reilly's (2005) third experiment (referred to as full information treatment), a table on how much participants would earn and how much the charity would receive was included when participants made decisions. While this extra information moved the rates of match and rebate subsidies closer together, the charity receipts were still higher under the match subsidy than under the rebate subsidy. A recent study (Peng, 2020) followed up on this finding and reported a correlation between the money donated under the two different subsidies and the cognitive reflection task (CRT), which is a measure of cognitive abilities. While people with high and low CRT both gave significantly higher donations under the match subsidy condition, participants with higher cognitive ability are more likely to attain theoretical equivalence. Since rebate subsidies are even more complex to calculate and estimate in real life, future studies should address whether and how attention, complexity, and confusion play a role in the effectiveness of different tax incentives.

Davis and Millner (2005) argued that part of the effect might be attributed to rebate aversion, since participants might have more real-life experiences with rebate subsidies than with match subsidies. For example, in real life, rebates usually come with cost uncertainty. Such uncertainty depends on both the donor (i.e., time cost and additional effort or errors, or they might forget filling and mailing the form) and external, non-donor mistakes (i.e., the letter can be lost, errors can occur) regarding filling and mailing the forms. Comparing this to a typically immediate match subsidy, it might be that people are just rebate averse. To test this, Eckel and Grossman (2006a) asked participants to freely decide between the two subsidies before they were asked to contribute to the selected incentive. They predicted that if participants were rebate averse, more participants would decide to implement a match subsidy. Interestingly, more people decided on a rebate than a match subsidy, although this difference was not statistically significant. Furthermore, the donations from participants who selected the matching subsidy

were twice the amount of donations from participants who selected the rebate subsidy. Another possible explanation could be that the different responses were due to an isolation effect (Davis, 2006), suggesting that participants focus on the variable they have under their control (i.e., money transfer), and net donations will be the same between rebate and match, which in turn implies that total contributions under the match exceed those under the rebate by precisely the magnitude of the match.

Lukas, Grossman and Eckel (2010) focused on the problem that the choice set under the rebate is smaller than under the match condition; that is, a participant in the rebate condition can never contribute everything. To minimise this effect, the authors allowed participants to borrow against future rebates to mirror possible contributions under the match. Additionally, they included the payoff table, yet the difference between the match and rebate conditions remained. Finally, although proposed in the first study by Eckel and Grossman (2003), to the best of our knowledge, no study has addressed whether different results are due to the differences in cooperative framing and reference groups. While the rebate subsidy is cast in a reward frame, the match subsidy might be perceived as a cooperation frame, and the experimenter can be seen as a reference group. Accordingly, it is plausible that rebate incentives may hurt an individual's intrinsic motivation to give.

To address these unanswered questions, we have developed a novel paradigm in an ongoing research project that asks participants to make donations in a public good game setting and allows us to manipulate whether donations are incentivised by matching or rebate schemes or in the absence of incentives. Our preliminary results revealed that in this social context, the matching scheme was the only one that effectively increased net donations to charities as compared to no incentives and rebate-type incentives. Importantly, we found no difference between the donations given by participants in the group incentivised through this scheme and those that had no incentive at all. This suggests that rebate schemes may be inefficient to promote philanthropy, as they cost the state a loss in tax revenues and do not achieve the objective of increasing the revenue of philanthropic organisations (see Figure 20.5).

5 Open questions and future research directions

We believe that behavioural philanthropy can make fundamental contributions to the understanding of why people engage in philanthropy and devise ways to increase the willingness of people to participate in the endeavour of promoting human wellbeing. Insights from this new field of research, combined with knowledge from other micro- and macro-level approaches to philanthropy, have the potential to deliver better-rounded evidence to support the design of effective tax policies and institutional practices aimed at promoting philanthropy. As can be seen in this chapter, recent years have seen a dramatic increase in the number of attempts to address the question of what motivates people to donate and how to boost this donation behaviour. However, much of this research regarding different factors that impact charitable giving has been largely correlational, leaving an open question of how different factors influence donation decision-making.

One of the most direct ways of stimulating giving among individual donors is to decrease the monetary cost of donating (for instance, through tax subsidies). While such a direct way of incentivisation decreases the cost of individual donors, it also increases the cost of government and/or third parties. To maximise public good, the 'most optimal' donation design (Haruvy et al., 2020) that produces the highest donor contributions at the lowest cost to the governments or third parties must be found (O.E.C.D., 2020). The first step in providing such applications for a behaviourally informed policy is to define which subsidies work, whether donors are price

Figure 20.5 (Colour online):⁶ Preliminary results on the effect of taxation subsidies on charity donations. Match subsidy significantly increases charity donations as compared to both rebate and no-subsidy schemes. Interestingly, the rebate scheme does not increase charity donations as compared to the no-subsidy condition. There is no main effect of effort tasks (low vs. high) within conditions

sensitive, and how donors respond to different frames of reduction in the cost of a donation. Since large amounts of money are involved in fundraising campaigns, such questions are not only important for the benefits of non-profit organisations but also have key implications for policymakers and overall public good maximisation.

While many studies have focused on monetary incentives that boost charitable giving, such as rebates and matches, recent neuroscientific studies have shown that altruism can also be mediated by mindfulness (Iwamoto et al., 2020). In particular, subjects who were in meditation treatment donated 2.61 times higher than the control. Such findings call for more research on how stress and emotional regulation impact social preferences and charitable giving.

Overall, field studies on the long-term effects of matching subsidies have reported mixed results, from no effect to positive and negative effects. We believe that laboratory studies, which are not only cheaper and faster to conduct but can also better control for heterogeneity of settings and samples, might be useful in the future to provide insights into what drives the differences. Once the behaviour in the laboratory is well understood, we believe field experiments could test whether such long-term findings are replicated in the representative samples and real-life behaviour.

While the experiments using match and rebate subsidies that were reviewed in this chapter treated taxes and donations as private ways of creating public value, economic literature (Slavov, 2014) seems to agree that taxes are public, while donations are a private way of creating public

and social welfare. Therefore, laboratory studies that mirror the effects of tax reductions regarding different public or private ways of creating public value are needed.

As mentioned previously, we must stress that most studies (with the exception of Peng and Liu, 2020) have used WEIRD societies for their study samples, which has compounded the replication problem discussed in this chapter (Henrich, Heine and Norenzayan, 2010). To provide conclusions on a more general understanding of human behaviour, future studies should focus on cross-cultural samples and investigate how different donation behaviours are similar or vary across different countries and cultures.

Constructing theories of a more general understanding of human behaviour, linked between economics, psychology, and neuroscience, provides opportunities to address long-standing questions. By providing such theories, we will not only develop clear predictions through the use of formal modelling and set theoretical expectations but also determine whether novel findings are confirmatory or surprising and thus whether they require future replication and scrutiny. We hope to see behavioural philanthropy flourishing by addressing socially relevant and empirical studies with strong empirical methods that can answer these questions and provide models and evidence that predict charitable donations within and without the laboratory setting. We hope such practices will provide evidence on current mechanisms and build new ways ‘to get the basket under the apple tree’.

Notes

- 1 The definition used by the Geneva Centre for Philanthropy: <https://www.unige.ch/philanthropie/en/>.
- 2 https://www.unige.ch/BehavioralPhilanthropyLab/files/2216/1916/8366/Ch15_Figure1.png
- 3 https://www.unige.ch/BehavioralPhilanthropyLab/files/3116/1916/8376/Ch15_Figure2.png
- 4 https://www.unige.ch/BehavioralPhilanthropyLab/files/2516/1916/8408/Ch15_Figure3.png
- 5 https://www.unige.ch/BehavioralPhilanthropyLab/files/9416/1916/8420/Ch15_Figure4.png
- 6 https://www.unige.ch/BehavioralPhilanthropyLab/files/4716/1916/8448/Ch15_Figure5.png

References

- Agerström, J. *et al.* (2016) ‘Using descriptive social norms to increase charitable giving: The power of local norms’, *Journal of Economic Psychology*, 52, pp. 147–153. doi: 10.1016/j.joep.2015.12.007.
- Alpizar, F., Carlsson, F. and Johansson-Stenman, O. (2008) ‘Anonymity, reciprocity, and conformity: Evidence from voluntary contributions to a national park in Costa Rica’, *Journal of Public Economics*, 92(5–6), pp. 1047–1060. doi: 10.1016/j.jpubeco.2007.11.004.
- Andreoni, J. (1990) ‘Impure altruism and donations to public goods: A theory of warm-glow giving’, *The Economic Journal*, 100(401), pp. 464–477. URL: <http://www.jstor.org/stable/2234133> Accessed: 02-03-2020.
- Andreoni, J. (2006) ‘Chapter 18 philanthropy’, in S.-C. Kolm and J. M. Ythier (eds.) *Handbook of the economics of giving, altruism and reciprocity*. Elsevier, pp. 1201–1269. doi: doi.org/10.1016/S1574-0714(06)02018-5.
- Andreoni, J. and Petrie, R. (2004) ‘Public goods experiments without confidentiality: A glimpse into fund-raising’, *Journal of Public Economics*, 88(7–8), pp. 1605–1623. doi: 10.1016/S0047-2727(03)00040-9.
- Ariely, B. D., Bracha, A. and Meier, S. (2009) ‘Doing good or doing well? Image motivation and monetary incentives in behaving prosocially’, *American Economic Review*, March, 99(1), pp. 544–555.
- Becker, G. S. (1974) ‘A theory of social interactions’, *Journal of Political Economy*, 82(6), pp. 1063–1093.
- Bekkers, R. (2015) ‘When and why matches are more effective subsidies than rebates’, *Research in Experimental Economics*, 18, pp. 183–211. doi: 10.1108/S0193-230620150000018007.
- Bekkers, R. and Wiepking, P. (2011) ‘Generosity and philanthropy: A literature review’, *SSRN Electronic Journal*, pp. 1–67. doi: 10.2139/ssrn.1015507.
- Bénabou, R. and Tirole, J. (2006) ‘Incentives and prosocial behavior’, *American Economic Review*, 96(5), pp. 1652–1678.

- Berman, J. Z. et al. (2018) 'Impediments to effective altruism: The role of subjective preferences in charitable giving', *Psychological Science*, 29(5), pp. 834–844. doi: 10.1177/0956797617747648.
- Bodner, R. and Prelec, D. (2003) 'The diagnostic value of actions in a self-signaling model', *The Psychology of Economic Decisions, Volume I: Rationality and Well-Being*, 1, pp. 105–126.
- Bonar, J. (1926) "The theory of moral sentiments," By Adam Smith, 1759', *Philosophy*, 1(3), 333–353. doi: 10.1017/S0031819100023536.
- Bracha, A., Menietti, M. E. and Vesterlund, L. (2011) 'Seeds to succeed: Sequential giving to public projects', *Journal of Public Economics*. Elsevier B.V., 95(5–6), pp. 416–427. doi: 10.1016/j.jpubeco.2010.10.007.
- Burum, B., Nowak, M. A. and Hoffman, M. (2020) 'An evolutionary explanation for ineffective altruism', *Nature Human Behaviour*. Springer: US, 4(12), pp. 1245–1257. doi: 10.1038/s41562-020-00950-4.
- Camerer, C. F. (2003) *Behavioral game theory: Experiments in strategic interaction*. Princeton: Princeton University Press.
- Chen, Y., Li, X. and MacKie-Mason, J. K. (2006) 'Online fund-raising mechanisms: A field experiment', *Contributions in Economic Analysis and Policy*, 5(2), pp. 75–113. doi: 10.2202/1538-0645.1477
- Croson, R. T. (2007) 'Theories of commitment, altruism and reciprocity: Evidence from linear public goods games', *Economic Inquiry*, 45(2), pp. 199–216.
- Croson, R. T. (2008) 'Differentiating altruism and reciprocity', *Handbook of Experimental Economics Results*, 1, pp. 784–791.
- Davis, D. D. (2006) 'Rebate subsidies, matching subsidies and isolation effects', *Judgment and Decision Making*, 1(NA), pp. 13–22.
- Davis, D. D. and Millner, E. L. (2005) 'Rebates, matches, and consumer behavior', *Southern Economic Journal*, 72(2), p. 410. doi: 10.2307/20062118.
- Davis, D. D., Millner, E. L. and Reilly, R. J. (2005) 'Subsidy schemes and charitable contributions: A closer look', *Experimental Economics*, 8(2), pp. 85–106. doi: 10.1007/s10683-005-0867-y.
- Eckel, C. C. and Grossman, P. J. (2003) 'Rebate versus matching: Does how we subsidize charitable contributions matter?' *Journal of Public Economics*, 87(3–4), pp. 681–701. doi: 10.1016/S0047-2727(01)00094-9.
- Eckel, C. C. and Grossman, P. J. (2006a) 'Do donors care about subsidy type? An experimental study', *Research in Experimental Economics*, 11(0316), pp. 157–175. doi: 10.1016/S0193-2306(06)11007-8.
- Eckel, C. C. and Grossman, P. J. (2006b) 'Subsidizing charitable giving with rebates or matching: Further laboratory evidence', *Southern Economic Journal*, 72(4), p. 794. doi: 10.2307/20111853.
- Eckel, C. C. and Grossman, P. J. (2008) 'Subsidizing charitable contributions: A natural field experiment comparing matching and rebate subsidies', *Experimental Economics*, 11(3), pp. 234–252. doi: 10.1007/s10683-008-9198-0.
- Eckel, C. C. and Grossman, P. J. (2017) 'Comparing rebate and matching subsidies controlling for donors' awareness: Evidence from the field', *Journal of Behavioral and Experimental Economics*. Elsevier Inc., 66, pp. 88–95. doi: 10.1016/j.soc.2016.04.016.
- Engel, C. (2011) 'Dictator games: A meta study', *Experimental Economics*, 14(4), pp. 583–610. doi: 10.1007/s10683-011-9283-7.
- Erkal, B. N., Gangadharan, L. and Nikiforakis, N. (2011) 'American economic association relative earnings and giving in a real-effort experiment', *Publish*, 101(7), pp. 3330–3348.
- Falk, A. and Zehnder, C. (2013) 'A city-wide experiment on trust discrimination'. *Journal of Public Economics*, 100, pp. 15–27.
- Fehr, E. and Gächter, S. (2002) 'Altruistic punishment in humans', *Nature*, 415(6868), pp. 137–140. doi: 10.1038/415137a.
- Fischbacher, U., Gächter, S. and Fehr, E. (2001) 'Are people conditionally cooperative? Evidence from a public goods experiment', *Economics Letters*, 71(3), pp. 397–404. doi: 10.1016/S0165-1765(01)00394-9.
- Fong, C. M. and Luttmer, E. F. (2009) 'What determines giving to Hurricane Katrina victims? Experimental evidence on racial group loyalty', *American Economic Journal: Applied Economics*, 1(2), pp. 64–87.
- Forsythe, R. et al. (1994) 'Fairness in simple bargaining experiments', *Games and Economic Behavior*, 6(3), pp. 347–369. doi: 10.1006/game.1994.1021.
- Gandullia, L. and Lezzi, E. (2018) 'The price elasticity of charitable giving: New experimental evidence', *Economics Letters*. Elsevier B.V., 173, pp. 88–91. doi: 10.1016/j.econlet.2018.09.012.
- Gee, L. K., Migueis, M. and Parsa, S. (2017) 'Redistributive choices and increasing income inequality: Experimental evidence for income as a signal of deservingness', *Experimental Economics*. Springer: US, 20(4), pp. 894–923. doi: 10.1007/s10683-017-9516-5.
- Giving USA. (2020) 'The annual report on philanthropy for the year 2019, giving USA foundation', researched and written by the Indiana University Lilly Family School of Philanthropy. Available at: www.givingusa.org. (Accessed: 7 January 2021).

- Harbaugh, B. W. T. (1998a) 'The prestige motive for making charitable transfers author (s): William T. Harbaugh source: The American economic review, vol. 88, No. 2 papers and proceedings of the hundred and tenth annual meeting of the American', *American Economic Review*, 88(2), pp. 277–282.
- Harbaugh, B. W. T. (1998b) 'What do donations buy?' *Journal of Public Economics*, 67(2), pp. 269–284. doi: 10.1016/S0047-2727(97)00062-5.
- Haruvy, E. *et al.* (2020) 'Fundraising design: Key issues, unifying framework, and open puzzles', *Marketing Letters*, 31(4), pp. 371–380. doi: 10.1007/s11002-020-09534-8.
- Havens, J. J., O'Herlihy, M. A. and Schervish, P. G. (2006) 'Charitable giving: How much, by whom, to what, and how?' *The Nonprofit Sector: A Research Handbook*, 2, pp. 542–567.
- Henrich, J., Heine, S. J. and Norenzayan, A. (2010) 'The weirdest people in the world?' *Behavioral and Brain Sciences*, 33(2–3), pp. 61–83. doi: 10.1017/S0140525X0999152X.
- Holt, C. A. and Laury, S. K. (2008) 'Theoretical explanations of treatment effects in voluntary contributions experiments', *Handbook of Experimental Economics Results*, 1, pp. 846–855.
- Hook, D. W., Porter, S. J. and Herzog, C. (2018) 'Dimensions: Building context for search and evaluation', *Frontiers in Research Metrics and Analytics*, 3(August), pp. 1–11. doi: 10.3389/frma.2018.00023.
- Hui-Chun, P. and Wen-Jing, L. (2020) 'Crowding-out (-in) effects of subsidy schemes on individual donations: An experimental study', *Judgment and Decision Making*, 15(3), p. 346.
- Isaac, R. M. and Walker, J. M. (1988) 'Group size effects in public goods provision: The voluntary contributions mechanism', *The Quarterly Journal of Economics*, 103(1), pp. 179–199.
- Iwamoto, S. K. *et al.* (2020) 'Mindfulness meditation activates altruism', *Scientific Reports*, 10(1), 6511. doi: 10.1038/s41598-020-62652-1.
- Johnson, E. J. and Goldstein, D. (2003) 'Do defaults save lives?' *Science*, 302(5649), pp. 1338–1339. doi: 10.1126/science.1091721.
- Karlan, D. and List, J. A. (2007) 'American economic association does price matter in charitable giving? Evidence from a large-scale natural field experiment', *American Economic Review*, 97(5), pp. 1774–1793.
- Karlan, D., List, J. A. and Shafir, E. (2011) 'Small matches and charitable giving: Evidence from a natural field experiment', *Journal of Public Economics*, 95(5–6), pp. 344–350. doi: 10.1016/j.jpubeco.2010.11.024.
- Karlan, D. and McConnell, M. A. (2014) 'Hey look at me: The effect of giving circles on giving', *Journal of Economic Behavior and Organization*. Elsevier B.V., 106, pp. 402–412. doi: 10.1016/j.jebo.2014.06.013.
- Kesternich, M., Löschel, A. and Römer, D. (2016) 'The long-term impact of matching and rebate subsidies when public goods are impure: Field experimental evidence from the carbon offsetting market', *Journal of Public Economics*. Elsevier B.V., 137, pp. 70–78. doi: 10.1016/j.jpubeco.2016.01.004.
- Kingma, B. R. (1997) 'Public good theories of the non-profit sector: Weisbrod revisited', *VOLUNTAS*, 8(2), 135–148. doi: 10.1007/BF02354191.
- Lacetera, N. and Macis, M. (2010) 'Social image concerns and prosocial behavior: Field evidence from a nonlinear incentive scheme', *Journal of Economic Behavior and Organization*. Elsevier B.V., 76(2), pp. 225–237. doi: 10.1016/j.jebo.2010.08.007.
- Laffan, K. M. and Dolan, P. H. (2020) 'In defence of charity which benefits both giver and receiver', *Nature Human Behaviour*. Springer: US, 4(7), pp. 670–672. doi: 10.1038/s41562-020-0855-4.
- Ledyard, J. O. (1995) 'Is there a problem with public goods provision', *The Handbook of Experimental Economics*, pp. 111–194.
- Lee, Z. and Sargeant, A. (2011) 'Dealing with social desirability bias: An application to charitable giving', *European Journal of Marketing*, 45(5), pp. 703–719. doi: 10.1108/03090561111119994.
- Linardi, S. and McConnell, M. A. (2011) 'No excuses for good behavior: Volunteering and the social environment', *Journal of Public Economics*. Elsevier B.V., 95(5–6), pp. 445–454. doi: 10.1016/j.jpubeco.2010.06.020.
- List, J. A. and Lucking-Reiley, D. (2002) 'The effects of seed money and refunds on charitable giving: Experimental evidence from a university capital campaign', *Journal of Political Economy*, 110(1), pp. 215–233. doi: 10.1086/324392.
- Lukas, I., Grossman, P. J. and Eckel, C. (2010) 'Preference or confusion: Understanding the differential impact of rebate and matching subsidies', Saint Cloud State University Working Paper.
- Mayo, J. W. and Tinsley, C. H. (2009) 'Warm glow and charitable giving: Why the wealthy do not give more to charity?' *Journal of Economic Psychology*. Elsevier B.V., 30(3), pp. 490–499. doi: 10.1016/j.joep.2008.06.001.
- Mazar, N., Amir, O. and Ariely, D. (2008) 'The dishonesty of honest people: A theory of self-concept maintenance', *Journal of Marketing Research*, 45(6), pp. 633–644. doi: 10.1509/jmkr.45.6.633.
- Meier, S. (2007) 'Do subsidies increase charitable giving in the long run? Matching donations in a field experiment', *SSRN Electronic Journal*, (December), pp. 1203–1222. doi: 10.2139/ssrn.960959.

- Menietti, M., Recalde, M. P. and Vesterlund, L. (2018) 'Charitable giving in the laboratory: advantages of the piecewise linear public goods game', in M. Tonin and K.A. Scharf (eds.) *The Economics of Philanthropy: Donations and Fundraising*. MIT Press.
- Muthukrishna, M. and Henrich, J. (2019) 'A problem in theory', *Nature Human Behaviour*. Springer: US, 3(3), pp. 221–229. doi: 10.1038/s41562-018-0522-1.
- Nelson, M. R. et al. (2006) 'Effects of culture, gender, and moral obligations on responses to charity advertising across masculine and feminine cultures', *Journal of Consumer Psychology*, 16(1), pp. 45–56. doi: 10.1207/s15327663jcp1601_7.
- Niza, C., Tung, B. and Marteau, T. M. (2013) 'Incentivizing blood donation: Systematic review and meta-analysis to test Titmuss' hypotheses', *Health Psychology*, 32(9), pp. 941–949. doi: 10.1037/a0032740.
- O.E.C.D. (2020) 'Taxation and philanthropy', *O.E.C.D. Tax Policy Studies*, 26.
- Osili, U., Clark, C. and Han, X. (2019) *16 years of charitable giving research*. Indiana University Lilly Family School of Philanthropy, Indianapolis.
- Otoni-Wilhelm, M., Vesterlund, L. and Xie, H. (2014) 'Nber working paper series why do people give? Testing pure and impure altruism', Available at: www.nber.org/papers/w20497.
- Peng, H. C. (2020) 'Effect of cognitive ability on matching and rebate subsidies', *Research in Economics*. Elsevier Ltd, 74(1), pp. 19–25. doi: 10.1016/j.rie.2019.11.003.
- Promberger, M. and Marteau, T. M. (2013) 'When do financial incentives reduce intrinsic motivation? Comparing behaviors studied in psychological and economic literatures', *Health Psychology*, 32(9), pp. 950–957. doi: 10.1037/a0032727.
- Rege, M. and Telle, K. (2004) 'The impact of social approval and framing on cooperation in public good situations', *Journal of Public Economics*, 88(7–8), pp. 1625–1644. doi: 10.1016/S0047-2727(03)00021-5.
- Schwartz, S. H. (1977) 'Normative influences on altruism', *Advances in Experimental Social Psychology*, 10(C), pp. 221–279. doi: 10.1016/S0065-2601(08)60358-5.
- Shang, J. and Croson, R. (2009) 'A field experiment in charitable contribution: The impact of social information on the voluntary provision of public goods', *Economic Journal*, 119(540), pp. 1422–1439. doi: 10.1111/j.1468-0297.2009.02267.x.
- Slavov, S. N. (2014) 'Public versus private provision of public goods', *Journal of Public Economic Theory*, 16(2), pp. 222–258. doi: <https://doi.org/10.1111/jpet.12058>
- Strobel, A., Zimmermann, J., Schmitz, A., Reuter, M., Lis, S., Windmann, S. and Kirsch, P. (2011) 'Beyond revenge: Neural and genetic bases of altruistic punishment', *Neuroimage*, 54(1), pp. 671–680.
- Thaler, R. H. and Benartzi, S. (2004) 'Save more tomorrow™: Using behavioral economics to increase employee saving', *Journal of Political Economy*, 112(S1), S164–S187. doi: 10.1086/380085.
- Thaler, R. H. and Johnson, E. J. (1990) 'Gambling with the house money and trying to break even: The effects of prior outcomes on risky choice', *Management Science*, 36(6), pp. 643–660. doi: 10.1287/mnsc.36.6.643.
- Tonin, M. and Vlassopoulos, M. (2017) 'Sharing one's fortune? An experimental study on earned income and giving', *Journal of Behavioral and Experimental Economics*. Elsevier Inc., 66, pp. 112–118. doi: 10.1016/j.soc.2016.04.014.
- Venkataramani, A. S. et al. (2012) 'The impact of tax policies on living organ donations in the United States', *American Journal of Transplantation*, 12(8), pp. 2133–2140. doi: 10.1111/j.1600-6143.2012.04044.x.
- Vesterlund, L. (2016). Edited by J. H. Kagel and A. E. Roth using experimental methods to understand why and how we give to charity. Princeton: Princeton University Press.
- Wagschal, U. (2015) 'Families of taxation: Convergence or divergence', Article Presented at the Conference the New Politics of Taxation from ECPR.
- Wallendorf, M. and Brucks, M. (1993) 'Introspection in consumer research: Implementation and implications', *Journal of Consumer Research*, 20(3), p. 339. doi: 10.1086/209354.
- Weber, E. U. and Johnson, E. J. (2012) 'Psychology and behavioral economics lessons for the design of a green growth strategy', *Policy Research Working Paper Series*, 6240(October), pp. 1–50.
- Wiepking, P. and Bekkers, R. (2012) 'Who gives? A literature review of predictors of charitable giving. Part Two: Gender, family composition and income', *Voluntary Sector Review*, 3(2), pp. 217–245. doi: 10.1332/204080512X649379.
- World Bank. (2014) '2015: Mind, society, and behavior, world development report 2015: Mind, society, and behavior', *World Development Report*. doi: 10.1596/978-1-4648-0342-0.