

Can Collaborative Giving Boost Generosity?

by
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Abstract

People often make charitable donations together with others, from strangers to romantic partners. Do people donate more generously when they give collaboratively with others? Past work has been largely correlational, mixed, and limited. To overcome prior empirical shortcomings, I conducted two well-powered, pre-registered experiments to test whether collaborative giving boosts generosity while also exploring its interpersonal and emotional consequences. In Study 1 ($N=202$; 101 dyads) and Study 2 ($N=310$; 155 dyads), pairs of unacquainted undergraduate peers earned money for evaluating a charitable advertisement. Then, I randomly assigned pairs to donate either collaboratively (Studies 1-2), individually in the presence of one another (Studies 1-2), or privately (Study 2). In both studies, I observed no differences in generosity across conditions. However, collaborative (vs. individual) giving boosted generosity through greater intrinsic enjoyment. Additionally, collaborative (vs. individual) giving facilitated social bonds between peers. Practical and theoretical insights are discussed.

Keywords: Generosity; Charitable Giving; Collaborative Giving; Intrinsic Motivation; Social Bonding

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Chapter 1.

Introduction

Humans have an exceptional capacity for prosociality (Fehr & Fischbacher, 2003, 2004; Fehr & Gächter, 2002; House, Henrich, Brosnan, & Silk, 2012; Rand & Nowak, 2013). From extraordinary feats of heroism to everyday acts of kindness, people act in various ways to benefit others (e.g., Batson, 2012; Oppenheimer & Olivola, 2011; Penner et al., 2005; Schroeder & Graziano, 2015)—sometimes without regard to personal costs (Gintis, Bowles, Boyd, & Fehr, 2003).

Despite this capacity, a concerning trend has taken root in North America: Fewer people are giving their time and money to improve the well-being of others, and those that do are donating less than previous generations (Angus Reid Institute & Charitable Impact, 2017; DoGood Institute, 2018; Giving USA, 2018, 2019; Institute for Social Research, 2018; Palacios & Fuss, 2018; Pew Research Center, 2019; Rooney, Wang, & Ottoni-Wilhelm, 2018; Statistics Canada, 2019). These declines put the future of charities and non-profits at risk. They also restrict the impact that charitable organizations can have by forcing a reliance upon fewer donors whom give fewer resources (e.g., CanadaHelps, 2018). Further, North Americans may be missing out on the numerous benefits of generous behaviour, such as greater social connection, happiness, and health (Aknin, Barrington-Leigh, et al., 2013; Aknin, Dunn, Proulx, Lok, & Norton, 2020; Aknin, Whillans, Norton & Dunn, 2019; Curry et al., 2018; Dunn, Aknin, & Norton, 2008; Layous et al., 2012; Whillans, Dunn, Sandstrom, Dickerson, & Madden, 2016; Willer, 2009; Yörük, 2014).

Researchers from multiple disciplines have long been interested in what factors promote prosocial behaviour. Indeed, within the realm of charitable giving, researchers have identified various factors which influence people's financial generosity, including donor characteristics, how charities present their appeals, and the potential donor's situational context (for reviews, see Allen, 2018; Binder-Hathaway, 2018; Oppenheimer

& Olivola, 2011; Whillans, 2016). For example, both an agreeable personality and strong prosocial/moral identity (i.e., helping others is an important aspect of one's identity) have been associated with greater generosity (Batchelder & Root, 1994; Finklestein et al, 2005; Graziano & Eisenberg, 1997; Graziano & Habashi, 2010, 2015; Gur & Olien, 2015; Habashi, Graziano, & Hoover, 2016; Hardy & Carlo, 2011; Schnitker et al, 2019; Sets & Carter, 2011, 2012). Charitable appeals which provide tangible information about the impact of one's donation (e.g., a \$5 donation can buy food to feed a child for a week) can also increase charitable donations (e.g., Cryder, Loewenstein, & Scheines, 2013; Erlandsson, Björklund, & Bäckström, 2014) and help unlock the happiness benefits of giving (e.g., Aknin, Dunn, Whillans, Grant, & Norton, 2013). Moreover, appeals which highlight the plight of a single identifiable victim (vs. large groups) tend to elicit greater generosity (e.g., Butts, Lunt, Freling, & Gabirel, 2019; Dunn & Ashton-James, 2008; Kogut & Ritov, 2011; Small & Loewenstein, 2003).

People's generosity can also change in response to features of the situation (Dovidio & Penner, 2001; Reyniers & Bhalla, 2013; Schroeder, Penner, Dovidio, & Piliavin, 1995). For example, across two studies ($N = 1,580$), Wiesenthal and colleagues (1983) demonstrated that individuals give less generously to donation requests when personally solicited in the presence of larger groups. In one study, researchers found that undergraduates at a pub were less generous and less willing to give to charity when sitting in groups (i.e., between two and six people) than when sitting alone. In fact, individuals sitting by themselves were most generous, and generosity decreased as group size increased. These findings demonstrate that donations are influenced by one's social context and that charitable action may be reduced when others are present.

But how does the presence of someone else *who gives with you* in a collaborative fashion impact generosity? This specific and potentially critical situational factor that may boost financial generosity has remained largely unexplored. Despite advances in the science of charitable giving, research to date has almost exclusively focused on understanding the generosity of *individuals* making *independent giving* decisions. In turn, the field has largely overlooked *collaborative* donation decisions that occur when two or more people – romantic couples, family, friends, peers, and even strangers – donate

together. As a result, little is known about whether and how collaborative giving, defined here as discussing and reaching a donation decision together with others, might boost generosity.

To address this gap, I conducted two well-powered, pre-registered experiments to understand whether and how giving collaboratively with a peer boosts financial generosity compared to giving independently either in the presence of a peer (Studies 1 and 2) or privately (Study 2). In addition, I explored the theoretical mechanisms by which collaborative giving may boost generosity, as well as its interpersonal and emotional consequences.

1.1. Charitable Giving in Groups

While charitable giving is on the decline in North America (e.g., Lasby & Barr, 2018; Palacios & Fuss, 2018), donating to charity is still a relatively frequent prosocial behaviour. According to data collected from over 130 countries by the Gallup World Poll in 2009-2017, 63.4% and 62.3% of Canadian and American respondents reported donating to charity in the past month, respectively (Aknin et al., 2019; Helliwell, Huang & Wang, 2019). Critically, people often tend to give to charity with others. For example, the Gallup Organization collected cross-sectional data from 2500 heterosexual couples in the US between 1992 to 1994 and found that over half of respondents (53%) reported regularly making collaborative charitable giving decisions (Andreoni, Brown, & Rischall, 2003; Brown et al., 2010; Yörük, 2010).

More broadly, people often engage in collaborative giving with friends and peers in their community. For example, giving circles—a form of collaborative giving that has been gaining popularity over the last two decades—are small groups of individuals or formal organizations who pool their money and decide together how to give the money to charity (Collective Giving Research Group, 2017; Eikenberry & Bearman, 2009). More than 1,500 giving circles currently exist in the US, and since their inception, giving circles have engaged at least 150,000 people to donate as much as \$1.29 billion to charity (Collective Giving Research Group, 2017).

Similarly, there has been a significant rise in peer-to-peer fundraising and online crowdfunding, such as *Facebook Causes*, *Go Fund Me*, *Donors Choose*, and *Givealittle* (e.g., Chapman et al., 2019; Saxton & Wang, 2014; Scharf & Smith, 2016). Peer-to-peer fundraising allows people within one's existing social network to promote and donate to a charitable cause together, often online using social media (Chapman et al., 2019). While this form of giving is still new and understudied, it is gaining rapid popularity and seems to be a preferred method of giving for newer generations such as Millennials (Saxton & Wang, 2014). Crowdfunding is another popular form of collaborative giving that enables a large number of people to donate to reach a shared charitable goal together (Greenberg & Gerber, 2012; Zhao et al., 2019). Taken together, these data suggest that people often give collaboratively in various forms with their romantic partners, friends, and peers and these forms of giving are gaining in popularity.

1.2. Does Collaborative Giving Boost Generosity?

While collaborative giving may be surprisingly common, its impact on generosity remains unclear. For example, correlational research conducted with married couples suggests its impact is mixed. Some data collected from a nationally representative panel of Americans in 2003 and 2005 reveals that married couples who make collaborative charitable donations give a larger percent of their income to charities than couples who donate individually (Brown et al., 2010 as cited in Dale, 2016; Toppe, Kirsch, & Michel, 2002; Yörük, 2010). While these data suggest that cooperatively discussing charitable giving is associated with giving larger donations to charity (Einolf, Curran, & Brown, 2018; Yörük, 2010; Wiepking & Bekkers, 2010), other data suggest that married couples who make collaborative charitable donations give approximately 6% less of their income than couples who donate individually (Andreoni et al., 2003). These conflicting findings may be due to any number of unmeasured variables, such as different negotiation styles between couples (e.g., Andreoni et al., 2003; Einolf et al., 2018; Lundberg & Pollak, 1993; Yörük, 2010). For example, some couples may distribute power over financial decision-making equally, where spouses freely share ideas and beliefs and can come to a mutual giving decision. To the extent that a collaborative negotiation style allows both partners to support their interests, collaborative giving may be associated with greater

generosity. In contrast, other couples may discuss charitable contributions but distribute power over financial decisions unequally, such that couples have to engage in costly bargaining to meet their individual interests (e.g., Andreoni et al., 2003). To the extent that this competitive negotiation style inhibits the autonomy and donation preferences of one person, collaborative giving may be associated with less generosity. Overall, little research has been conducted to reconcile these findings, leaving the link between collaborative giving and generosity among married couples uncertain.

Despite the mixed findings among couples, most research suggests that collaborative giving in other relationships—such as between friends or peers—is associated with greater generosity. Researchers investigating the generosity of “giving circles” claim that people who participate in giving circles give more to charity than people who donate individually (Carboni & Eikenberry, 2018; Eikenberry & Bearman, 2009). For example, Eikenberry and Bearman (2009) conducted a survey with 331 giving circle members and over 250 control group participants consisting of a random sample of Midwestern university donors and a non-random sample of public service graduate students and alumni. The researchers found that the annual household giving of giving circle members was significantly higher than the control group. Indeed, a majority of giving circle respondents (66%) believed that their giving had increased due to their participation in a giving circle (see also Kahn, 2007; Moody, 2008). More recently, researchers found that giving circle respondents reported giving significantly more of their annual household income to charity than demographically similar donors not in giving circles (Carboni & Eikenberry, 2018). However, these quasi-experimental data are open to a number of alternative explanations, such as inflated self-reports and statistical confounds (e.g., household income). Most importantly, these data fail to explain whether participation in giving circles *causes* greater generosity or whether this is a case of reverse causality where exceptionally generous individuals seek out giving circles.

Taken together, the existing correlational data suggest that there is most likely a positive relationship between collaborative giving and generosity. However, these data alone make it difficult to conclude whether collaborative giving *leads to* changes in

generosity. Thus, experimental work is necessary to help understand when and how collaborative giving can lead to changes in generosity.

1.3. Limitations of Previous Experimental Work

To date, only two experimental studies have investigated the impact of collaborative charitable giving on generosity or its downstream emotional consequences. The first experiment was conducted with a sample of 99 female introductory psychology students in Iowa (Baron, Roper, & Baron, 1974). Researchers had small groups (3–4 participants) discuss and try to reach a unanimous decision on how much each group member should pledge to donate to charity. The experimenter left the room for three minutes to allow for group discussion. If a unanimous decision was not reached at the end of the three minutes, the researcher requested participants to record their current pledge. No additional information was reported about the nature of these discussions, including the extent to which they were collaborative. After making the pledge as a group, participants individually made an anonymous pledge for how much they would like to donate to charity (i.e., a *post-group* pledge). The researchers randomly assigned some groups to make an individual pledge both before and after the group discussion (*individual-group-individual* condition). Meanwhile, other groups just made a group pledge and an individual, post-group pledge (*group-individual* condition). Participants' individual decisions were private and were not shown to any other group member.

The researchers analyzed the pledge amount averaged across the group members using two individual analyses. First, the researchers ignored the post-test pledges within the *individual-group-individual* condition to conduct a 2×2 ANOVA, with sequence (individual-pledge first vs. group-pledge first) as one factor and making an individual vs. group pledge as the second factor. The researchers concluded that people pledged more as individuals than as a group. For the second analyses, the researchers dropped individual pre-test scores within the *individual-group-individual* condition and ran an additional 2×2 ANOVA. Again, the researchers concluded that participants were more generous with their individual decisions as compared to their group decisions.

While it is possible that people may be less generous when making collaborative giving decisions than when alone, it is difficult to make strong conclusions from these data given several limitations. First, the repeated/within nature of the study design brings the two situational contexts—giving collaboratively and giving independently—in clear contrast to one another. People often have the opportunity to give in each situational context, however when people make collaborative giving decisions, it often does not directly precede or follow an independent giving decision. Thus, participants' generosity may have been influenced by the preceding situational context. Second, this study was likely underpowered (28 groups). Third, the analytic strategy forced the researchers to drop data points to conduct the analyses, and failed to model the dependency of the data, which is critical given the group nature of the task.

In a more recent, well-powered experiment, researchers recruited over 400 participants randomly assigned to make a donation decision either independently or as a “collective” (group sizes not reported; Bischoff & Krauskopf, 2015). Across conditions, participants were seated in the same classroom with a number of participants (unreported) and used a voucher worth 10 € to make a donation decision. In the independent giving condition, participants recorded their individual decision on how much of their voucher to donate on paper and were told each of the other participants in the classroom would do the same. In the collective giving condition, participants also privately recorded an amount to donate in the presence of others and were told that every other member of the classroom was doing the same. However, participants were told that these proposals would be rank ordered and that everyone would donate the median of those proposals. For example, in a group of five participants, each member could propose to donate 1 €, 2 €, 5 €, 8 €, and 10 €, respectively, but each member would only donate the median of those proposals, 5 €. Communication between participants was forbidden in each condition and participants additionally completed self-report measures of positive affect both before and after the donation decision.

The researchers found no evidence that participants in the collective giving condition donated differently than participants in the individual giving condition. Additionally, the researchers found no differences in post-donation positive affect across

conditions. It is difficult to conclude whether collaborative giving impacts generosity from these data because communication was prohibited in the collective giving condition, thereby precluding a key defining feature of collaboration. Indeed, most examples of collaborative giving in the real world involve a discussion of whether, where, how much, and why to give – and these conversations are likely a critical component of collaborative giving (e.g., Einhorn et al. 2018). Second, the dependent nature of these data was not accounted for during analyses, potentially misestimating the effects of collaborative giving on either generosity or post-donation positive affect.

1.4. Overcoming the Limitations of Previous Experiments

The present thesis builds upon the limitations of past research in four key ways. First, I included and manipulated the two defining features of collaborative giving—discussion and joint-decision making. Specifically, participants making a collaborative giving decision were explicitly instructed to discuss and reach a decision together. Second, I powered my research to detect the smallest effect size likely to be of practical interest to practitioners and scholars ($d = .20$; Cohen, 1988) and utilized the appropriate nested analyses to handle the non-independent structure of the data. Third, I utilized a between-subjects experimental design to eliminate the contrast between collaborative and individual giving that would be made salient by a within-subjects design.

Finally, and perhaps most critically, I included a rigorous set of control conditions which act as meaningful comparisons and rule out alternative explanations. Both Studies 1 and 2 included an *independent giving* condition in which two participants made an individual donation in the presence of one another. Giving independently near another person provides an important theoretical comparison because it holds constant the impact of social context (e.g., the physical presence of others) on generosity. Thus, this condition helps isolate the key ingredients of collaborative giving on generosity—discussion and joint decision-making—from the effect of mere social presence. Similarly, I added another theoretically relevant condition in Study 2—giving alone in a private room—to help isolate the unique impact of social presence on generosity. Moreover, this condition is of practical importance because people are often solicited for donations while alone

(e.g., in a personal phone call, by paper or e-mail). Thus, including this comparison enabled me to benchmark the value of collaborative giving against “business as usual” fundraising strategies.

1.5. Proposed Theoretical Mechanisms

How and why might collaborative giving boost generosity? As there are likely a number of psychological mechanisms, I explored a selection of theoretical mechanisms I believed to be most critical to help explain how collaborative giving could positively impact financial generosity.

1.5.1. Intrinsic enjoyment

One reason why collaborative giving might boost generosity is because it may be more intrinsically enjoyable to give to charity together with someone else than alone. According to *Self-Determination Theory* (SDT), one of the strongest drivers of human behaviour is intrinsic motivation (Ryan & Deci, 2000). Intrinsic motivation is marked by fulfilling fundamental psychological needs, including autonomy (having volition), competence (feeling effective, capable), and relatedness (feeling socially connected; Ryan & Deci, 2000). Past research demonstrates that people not only find charitable giving intrinsically enjoyable (e.g., Harbaugh, Mayr, & Burghart, 2007; Zaki & Mitchell, 2011), but that greater intrinsic motivation leads to greater generosity (e.g., Gorczyca & Hartman, 2017; Ki & Oh, 2018; Reykowski, 1982).

Why might collaborative giving be more intrinsically enjoyable than giving individually? Past research suggests that people are often more intrinsically motivated and persistent at tasks when they complete them collaboratively with others as compared to alone (e.g., Aronson & Osherow, 1980; Isaac, Sansone, & Smith, 1999; Shteynberg & Apfelbaum, 2013; Thoman, Sansone, Fraughton, & Pasupathi, 2012). In fact, mere cues that one is working together with others towards a shared goal increases both intrinsic motivation and task persistence, even when people physically work alone on tasks (Carr & Walton, 2014). One possibility for why this may be is because sharing experiences with others can amplify emotions, making positive experiences more enjoyable (Boothby,

Clark, & Bargh, 2014; Boothby, Smith, Clark, & Bargh, 2016; Shteynberg et al., 2014). Thus, it is possible that simply sharing the act of giving with someone else can amplify the intrinsic enjoyment felt above and beyond acts of individual charitable giving.

Another possibility why collaborative giving may bolster intrinsic enjoyment is because it may offer the opportunity connect with others and forge social bonds through positive social interaction (Aron & Aron, 1986; Baumeister & Leary, 1995; Carr & Walton, 2014; Fredrickson, 1988, 2001, 2013; Stielor & Germelmann, 2016). According to *Relationships Motivation Theory* (Deci & Ryan, 2014), relating to others is not only a fundamental need, but it is often a highly enjoyable activity in itself. Thus, collaborative giving may foster intrinsic enjoyment because it fosters feelings of social connection. In turn, collaborative giving may increase people's generosity through magnified levels of intrinsic enjoyment.

1.5.2. Perceived prosocial impact

People are more likely to donate generously when they feel competent and believe that their actions can make a positive difference for others (e.g., Cryder et al., 2013; Duncan, 2004; Erlandsson et al., 2014; Grant, 2008, Grant et al., 2007; Jenni & Loewenstein, 1997; Karlan & List, 2007; Small & Loewenstein, 2003; Smith, Keating, & Stotland, 1989; Touré-Tillery & Fishbach, 2017). Collaboration may be an effective means to increase one's feelings of competence and impact because people can better meet goals that might otherwise be out of reach by oneself (Asch, 1952; Carr & Walton, 2014). Indeed, when making a collaborative giving decision with someone else, it is possible to combine money to make a larger donation than one individual might alone. Thus, collaborative giving may increase people's perceptions that they can make a greater prosocial impact and, in turn, increase their generosity.

1.5.3. Social pressure

According to *Social Comparison Theory* (Festinger, 1954), people have a fundamental motivation to learn about themselves through comparison with others, especially when external standards are ambiguous. As a result, humans are susceptible to

social pressure. Indeed, massive bodies of research demonstrate that people attune to and change their behaviours in response to the actual or expected behaviours and thoughts of others (Asch, 1951; Cialdini & Goldstein, 2004; Cialdini & Trost, 1998; Crutchfield, 1955; Festinger, 1954; Gerber, Wheeler, & Suls, 2018; Seta, 1982; Smith & Kim, 2007; Taylor, Wayment, & Carrillo, 1996; Turner, 1991; White & Lehman, 2005). Past work similarly suggests social pressure motivates people to act generously (e.g., Rogers, Ternivski, & Yoeli, 2016). For example, research has shown that when people receive social information that others are or have been generous—or believe that people ought to be generous—people tend to give more generously in subsequent donation requests (Croson & Shang, 2011; Frey & Meier, 2004; Martin & Randal, 2011; Krupka & Weber, 2013; Michaeli & Spiro, 2018; Rege & Telle, 2004; Shang & Croson, 2006, 2008, 2009).

Applying this insight, it seems plausible that people may feel socially pressured to donate more generously when making a collaborative decision. Supporting this possibility, Reyniers and Bhalla (2013) recruited 200 undergraduates for an experiment in which participants made a private donation decision before revealing what they donated to a study partner. After participants discussed their decisions with each other for two minutes, they were allowed to revise their donation. Critically, participants with partners who donated more than they did increased their donations (on average, by £0.55). Thus, collaborative giving may increase people’s perceptions of social pressure and in turn, increase their generosity.

Of course, it is also possible that social pressure could have the opposite effect, leading people to donate *less* generously. Indeed, past research suggests that when people receive social information that others are behaving less generously (i.e. the norm is to give less), people give less in response to subsequent donation requests (e.g., Croson & Shang, 2011). Indeed, Reyniers and Bhalla (2013) found that some participants reduced their donation when they found out that their partner gave less. Overall, however, given the social value often placed upon generous action (e.g., Buss, 1989; Hardy & van Vugt, 2006; Jordan, Hoffman, Nowak, & Rand, 2016; Klein, Grossman, Uskul, Kraus, & Epley, 2015; Roberts, 1998), it is perhaps more likely that people will feel socially pressured to act *more* generously during a collaborative donation.

1.6. Interpersonal Consequences of Collaborative Giving

The main goal of this research is to understand whether and how collaborative giving might boost financial generosity. However, this work also provides an opportunity to explore the interpersonal consequences of collaborative giving as a meaningful outcome in and of itself. Humans are social creatures with a need to belong and to connect with others (Baumeister & Leary, 1995). According to the *Self-Expansion Model*, an optimal way for people to connect with others is to share novel, interesting, exciting, and/or challenging activities together (Aron & Aron, 1986; Aron, Lewandowski, Mashek, & Aron, 2013; Xu, Lewandowski, & Aron, 2016). Further, according to the *Broaden and Build Theory of Positive Emotions*, sharing emotions with others—such as the joy of giving (e.g., Harbaugh, Mayr, & Burghart, 2007; Zaki & Mitchell, 2011)—is a powerful way to forge social bonds (Fredrickson, 1988, 2001; Otero et al., 2019). Thus, because collaborative giving offers a novel, interesting, and intrinsically enjoyable activity, it may foster feelings of closeness and connection between peers.

1.7. Emotional Consequences of Collaborative Giving

Past work demonstrates that giving leads to happiness (e.g., Aknin, Barrington-Leigh, et al., 2013; Aknin, Dunn, Proulx, Lee & Norton, 2020; Curry et al., 2018; Dunn et al., 2008). Yet, the literature has focused almost exclusively on the relationship between giving and well-being of solitary givers. Thus, I also capitalized on this opportunity to take an initial and simple look at the emotional consequences of collaborative giving in two ways. First, I examined whether participants reported greater happiness after making a collaborative donation decision than after making a donation decision on their own in the presence of another person. Second, I investigated whether larger donations led to greater happiness in the collaborative giving context than when giving alone in the presence of another.

Why might collaborative giving lead to greater positive emotion than giving alone in the presence of another person? There are numerous possibilities including many of the potential mechanisms named above. For instance, discussing and agreeing on a donation

with another person may be more intrinsically rewarding, build greater social connection, or offer greater opportunity for positive impact – all independent predictors of well-being (see Diener, Oishi, & Tay, 2018) – than giving alone in the mere presence with another person. Of course, giving with another person could also lead to more social pressure to give or result in negative evaluations, both of which could make people to feel *less* happy (e.g., Reyniers & Bhalla, 2013). Overall, however, the culmination of past work suggests that collaborative giving may be more likely to *enhance* the happiness than diminish it.

The second question probes whether larger donations lead to greater happiness when people give collaboratively than alone. This possibility is grounded in past work demonstrating that the emotional benefits of generosity are greater when a giver’s basic psychological needs are satisfied (Dunn, Aknin, & Norton, 2014; Hui & Kogan, 2018; Lok & Dunn, 2020). For example, larger donations lead to greater happiness when giving opportunities allow people to foster social connection or appreciate the positive impact of their donation (i.e., Aknin, Dunn, Sandstrom, & Norton, 2013; Aknin, Dunn, Whillans, et al., 2013; Dunn, Aknin, & Norton, 2014; Lok & Dunn, 2020). As discussed, collaborative giving may cultivate greater intrinsic enjoyment and prosocial impact. Moreover, collaborative giving provides people with an opportunity to connect with one’s giving partner. Thus, compared to individual giving, collaborative giving may amplify the emotional rewards of larger donations.

1.8. The Present Research

I conducted two well-powered, pre-registered experiments designed to test the impact of collaborative giving on generosity among samples of unacquainted undergraduate peers. These studies used rigorous control conditions to compare pairs who made collaborative giving decisions against pairs who made independent giving decisions in the presence of a peer (Studies 1 and 2) or privately (Study 2). To better understand the impact of collaborative giving on generosity, I tested several theoretical mechanisms, including intrinsic enjoyment, perceived prosocial impact, and social pressure. Finally, I explored both the interpersonal and emotional consequences of collaborative giving.

Chapter 2.

Study 1

In Study 1, I randomly assigned pairs of participants to either discuss and make a donation decision collaboratively (*collaborative giving* condition) or make a donation independently in the presence of the other participant (*independent giving* condition). The study pre-registration, including power analyses, study materials, questionnaires, data, and analyses scripts can be found on the Open Science Framework (OSF) at osf.io/g93xr.

2.1. Pre-registered Hypothesis

A substantial portion of the past correlational evidence suggests that collaborative giving is likely to boost generosity (e.g., Carobni & Eikenberry, 2018). However, in light of the mixed evidence found among romantic couples (e.g., Andreoni et al., 2003) and because this was my first empirical investigation into this research question, I pre-registered the following non-directional hypothesis on the OSF:

Hypothesis 1 (H₁): Donations in the *collaborative giving* condition will differ from donations in the *independent giving* condition. That is, participants in the *collaborative giving* condition will donate more or less generously than participants in the *independent giving* condition.

2.2. Exploratory Hypotheses

I additionally pre-registered several exploratory analyses. Foremost, to examine each of my proposed theoretical mediators, I pre-registered mediation analyses to examine whether intrinsic enjoyment, perceived prosocial impact, and/or social pressure explained the relationship between collaborative giving and generosity. Second, I pre-registered exploratory analyses to examine the interpersonal consequences of collaborative giving across a range of measures assessing participants' attitudes towards and social connection with their study partner. Finally, I pre-registered the following

exploratory analyses to investigate the downstream emotional consequences of collaborative giving:¹

Main Effect Hypothesis: Participants in the *collaborative giving* condition will report greater post-donation positive affect than participants in the *independent giving* condition, while controlling for baseline positive affect and generosity.

Interaction Hypothesis: Participants in the *collaborative giving* condition will report greater post-donation positive affect from larger donations than participants in the *independent giving* condition, while controlling for baseline positive affect.

2.3. Methods

2.3.1. Participants and power

As pre-registered on the OSF, power analyses revealed that I would require a minimum sample size of 160 participants (80 dyads) to have 90% power to detect my smallest effect size of interest, $f = .10$ (Lakens, 2017) at an $\alpha = .05$. I expected that some participants may not provide complete data on my key measures and thus, I set to collect data from 25% more participants for a total goal sample size of at least 200 participants (100 dyads).

All participants were Simon Fraser University (SFU) undergraduate students who completed the study in exchange for course credit. I recruited a final sample of 202 participants (101 dyads) using the SFU subjects pool. Two undergraduate students individually registered for a timeslot on a first-come, first-serve basis. Participants were predominantly female (70%), Asian (49%) and Caucasian (31%), with a mean age of 19.2 ($SD = 1.88$). I collected familial household income data among other demographic measures to create an overall socio-economic status (SES) measure. However, over one-third of the sample (37%) did not report their family's annual pre-tax household income,

¹ I pre-registered a number of additional exploratory measures and analyses beyond the scope of the present report. For each of these measures and analyses, please see the supplementary methods and results in the Appendix A.

precluding a meaningful measure of my sample's SES. See Table 1 for a complete summary of all participant demographics.

The sample consisted of 67% same gender-dyads (56 female/female dyads and 14 male/male dyads) and 33% mixed-gender dyads, 62% mixed-ethnicity dyads, with approximately equal numbers assigned to each condition ($n=50$ dyads and $n=51$ dyads in the *independent giving* and *collaborative giving* conditions, respectively). Dyads were primarily strangers (96.2%), but three dyads reported being friends and one dyad whom reported being in a romantic relationship. All of the effects held when excluding friends and the romantic couple, thus all dyads were included in the analyses. See Table 1 for a complete summary of all dyad demographics.

2.3.2. Procedure

Consent and baseline questionnaire

Two participants were scheduled for each study session and arrived at the lab individually. Upon providing informed consent, participants completed a baseline questionnaire in separate rooms. The baseline questionnaire primarily assessed participants' positive affect and demographics among several additional exploratory measures (see Table 2 for a summary of study measures; see Supplementary Methods in Appendix A for additional exploratory measures).

Experimental conditions

As participants were completing the baseline questionnaire, pairs of participants were randomly assigned to one of the aforementioned conditions using a random number generator. Pairs in each condition evaluated an advertisement for the B.C. Children's Hospital Foundation (BCCHF) for a financial endowment and subsequently made a donation decision to the BCCHF using the endowment. Critically, participants in the *collaborative giving* condition evaluated the advertisement *together* for a joint \$10 financial endowment and then discussed and made the donation decision together. Meanwhile, participants in the *independent giving* condition evaluated the advertisement *individually* for a \$5 financial endowment and made their own donation decision in each

other's presence. All participants completed these tasks side-by-side in a small room. If both participants previously provided consent, a clearly visible video recorder was set to record participant behaviours. This video camera enabled me to confirm whether participants abided by the experimental instructions.

Advertisement evaluation task and financial endowment

The advertisement evaluation task served two primary purposes: First, it introduced participants to the charity. Second, it helped disguise the research question as participants were under the impression that I was interested in what they found compelling about the advertisement. Financial endowments provided all participants equal opportunity to make a donation. Endowments consisted of \$1 coins enclosed in an envelope marked "*Study Payment.*" To increase participants' psychological ownership over the endowment, all participants signed a receipt. To boost the strength of the manipulation, participants in the *collaborative giving* condition received their joint \$10 payment in a single envelope and signed the same receipt. Meanwhile, participants in the *independent giving* condition each received their own envelope of five coins and signed individual receipts.

Upon accepting the financial endowment, participants watched the advertisement for the BCCHF. To similarly boost the strength of the manipulation, participants in the *collaborative giving* condition watched the advertisement aloud together on a single device. Meanwhile, participants in the *independent giving* condition watched the advertisement silently using headphones from their own devices. Rather than have the experimenter verbally administer the experimental manipulation, participants were left alone to read their study instructions. This design choice was implemented to reduce the likelihood that the experimenter would systematically influence participants' behaviours (i.e., experimenter expectancy effects; Rosenthal, 1966).

To evaluate the advertisement, participants completed an adapted thought-listing task (Cacioppo, von Hippel, & Ernst, 1997). To bolster the strength of the manipulation, participants in the *collaborative giving* condition discussed and listed their thoughts and feelings about the advertisement *together*. Meanwhile, participants in the *independent*

giving condition silently and individually listed their thoughts. Indeed, discussing the charitable advertisement gave participants in the *collaborative giving* condition the initial opportunity to work collaboratively on a task. Further, it enabled participants to discuss the charity itself, a frequent component of collaborative giving decisions (e.g., Einhorn et al., 2018).

Donation opportunity

After completing the evaluation task, participants flipped the page to read that they had the opportunity to donate any of their financial endowment to the charity. Specifically, the donation opportunity was presented with the following text:

After evaluating the advertisement, participants in our study sometimes ask if they can donate any of their additional study earnings to the B.C. Children’s Hospital Foundation. You can make this choice as well. Any donation made will go directly to the B.C. Children’s Hospital Foundation.

A brief description of the BCCHF was included to inform participants about the charity’s services.

To bolster the strength of the manipulation, participants in the *collaborative giving* condition were asked to split any amount they chose to keep evenly among themselves. For example, if participants donated \$8 and kept \$2, each participant donated \$4 and kept \$1. This served to make the donation feel more like a collaborative effort—one in which each person contributed equally. Moreover, it ensured a fair and equal distribution of the financial endowment across participants.²

Participants recorded their donation on paper and sealed their donations into a small envelope marked “*For Charity;*” a single envelope between participants in the *collaborative giving* condition and for each participant in the *independent giving* condition. Participants deposited their donation into small box with the BCCHF logo

² One pair of participants in the *collaborative giving* condition did not follow the instructions that they should each donate the same amount to charity. Video footage was used to confirm the amounts each participant chose to donate, and the exact donations were reflected in the data. Results did not change when these participants were excluded and were thus kept in the data.

which had been sitting in the center of the table in front of participants prior to the start of the advertisement evaluation task. The labeled box was included to help reinforce the fact that participants were making real donations to the BCCHF and keep participants engaged with the task. After the donation opportunity, participants completed a post-donation questionnaire in private testing rooms and reported on measures primarily assessing my exploratory mechanisms and various interpersonal and emotional outcomes (see Measures below and Table 2; for all additional exploratory outcomes, see Table A1 in the Appendix A).

2.3.3. Measures

Generosity

The amount of money each participant donated was used to measure generosity—my primary preregistered outcome. Each participant could donate anywhere between \$0 and \$5 in \$1 increments.

Manipulation check

I aimed to ensure that there were differences across conditions in how much participants interacted with their study partner during the donation decision. Therefore, participants in both conditions reported the duration of time they spoke with their study partner when evaluating the advertisement and making their financial decision (0-None of the time; 1-A bit of the time; 2-Some of the time; 3-Most of the time; 4-The whole time).

Theoretical mechanisms

Intrinsic enjoyment. To assess intrinsic enjoyment from the donation decision, participants completed an adapted version of the Interest/Enjoyment subscale of the Intrinsic Motivation Inventory (i.e., IMI; “Our financial decision was fun to make;” $\alpha = .77$; Ryan, 1982).

Perceived prosocial impact. To assess perceived prosocial impact from their donation decision, participants completed an adapted version of the Perceived Prosocial

Impact scale (e.g., “Our actions will make a significant difference in people’s lives;” $\alpha = .96$; Grant et al., 2007).

Social pressure. As an approximate measure of social pressure during the donation decision, participants completed an adapted version of the Pressure/Tension subscale from the IMI (e.g., “I felt pressured while we were making our financial decision;” $\alpha = .84$; Ryan, 1982).

Interpersonal outcomes

To explore the interpersonal outcomes of collaborative giving, participants completed a battery of measures assessing positive interpersonal feelings towards and social connection with their study partner. Participants indicated across two face valid items how positive they felt towards their study partner and how interested they thought their study partner was in working with them (scales ranged from -5 to +5). Participants reported their perceived similarity to their study partner (“My study partner and I see things in the same way;” $\alpha = .88$; Turban & Jones, 1988) and how much they liked their study partner (“I like my partner very much as a person;” $\alpha = .91$; Wayne & Ferris, 1990). Finally, participants reported how related they felt to their study partner (“I feel close to my study partner;” $\alpha = .72$; Ryan, 1982) and how close they felt to their study partner, as indexed by the Inclusion of Other in Self scale (i.e., IOS; Aron, Aron, & Smollan, 1992).

Emotional outcomes (post-donation)

Participants reported their post-donation positive affect using the Positive and Negative Affect Schedule (PANAS; Watson, Clark & Tellegen, 1988). Consistent with past research, I included the additional word “happy” (consistent with other research, e.g., Aknin, Dunn, Sandstrom & Norton, 2013; Aknin, Barrington-Leigh, et al., 2013; Aknin, Mayraz & Helliwell, 2016; Whillans, Aknin, Ross, Chen & Chen, 2019). I computed positive affect by taking the average of the 10-item positive affect subscale and “happy” ($\alpha = .93$).

2.4. Results

2.4.1. Manipulation check

First, I tested whether the level of interaction between pairs of participants differed across condition. To do so, I conducted a Nested Analysis of Variance (NANOVA) to account for the non-independence in participants' reports. Specifically, using the General Linear Model command in *SPSS* Version 25, I input the duration of time pairs interacted during donation decision (rated on scale from 0-*None of the time* to 4-*The whole time*) as the outcome, condition as a fixed factor, and dyad as a random factor. I specified a custom model, which included condition and a condition \times dyad interaction term. Confidence intervals (95%) on partial eta-squared effect sizes were calculated using the MBESS package in *R*. Confirming the success of my manipulation, analyses revealed that there was a significant effect of condition on time spent discussing the donation decision with one's study partner, $F(1, 99) = 226.30, p < .001, \eta_p^2 = .70, 90\%CI [.61, .75]$ (see Table 3). Specifically, participants in the *collaborative giving* condition reported speaking with their study partner about the donation decision ($M = 2.02; SD = 1.12$) and participants in the *independent giving* condition reportedly did not speak with their study partner about the donation decision ($M = .17; SD = .43$).

As pre-registered on OSF, I coded the available video data if a participant's response to the manipulation check question was inconsistent with their condition assignment ($n = 6$ and $n = 15$ participants in the *collaborative giving* and *independent giving* conditions, respectively). Specifically, I coded whether participants uttered at least one sentence to each other about how much money to donate to charity. Taken together with the self-report data, video data indicated that 98% of participants in the *collaborative giving* condition and 90% of participants in the *independent giving* condition followed study instructions. Removing participants who failed to follow study instructions did not change the conclusions of the results. Thus, all participants were included in analyses.

2.4.2. Pre-registered analyses

My primary pre-registered hypothesis was that giving collaboratively with a peer would lead to different levels of generosity than when giving independently in the presence of a peer. As seen in Figure 1, NANOVA analyses did not reveal a difference in generosity between conditions, $F(1, 99) = 1.50, p = .223, \eta_p^2 = .02, 90\% \text{ CI } [.00, .08]$; for a complete summary of the results for this and all other analyses, see Table 3. Participants in the *collaborative giving* condition ($M = 4.66, SD = .95$) donated no differently than participants in the *independent giving* condition ($M = 4.42, SD = 1.41$).³ Overall, 85% of the sample (83% in the *independent giving* condition; 87% in the *collaborative giving* condition) donated the full \$5 to charity, demonstrating a ceiling effect on donation rates. I discuss this result and its potential causes in the Discussion section.

2.4.3. Exploratory analyses

Exploratory mechanisms

While I found no direct effect of condition on generosity, it is possible to examine the data for indirect effects in the absence of significant direct effects (Zhou, Lynch, & Chen, 2010). As such, I explored whether there was an indirect effect of condition on generosity through each proposed mechanism, including intrinsic enjoyment, perceived prosocial impact, and/or social pressure.

Main effect analyses. First, using NANOVA analyses, I examined whether making a collaborative giving decision with a peer (vs. an independent giving decision in the presence of a peer) led to any differences in intrinsic enjoyment. As seen in Figure 2 and Table 3, analyses revealed that participants in the *collaborative giving* condition reported greater intrinsic enjoyment ($M = 5.14, SD = 1.15$) than participants in the *independent giving* condition ($M = 4.59, SD = 1.26$), $F(1, 99) = 9.86, p = .002, \eta_p^2 = .09, 90\% \text{ CI } [.02, .19]$. In contrast, I found no significant condition differences on either

³ Results did not change when outliers (± 2 SDs) were excluded, $F(1, 99.74) = .09, p = .771, \eta_p^2 = .00, 90\% \text{ CI } [.00, .03]$.

perceived prosocial impact or social pressure to donate ($ps > .157$; see Table 3). Together, these results suggest that giving collaboratively with a peer may be more intrinsically motivating than making an independent giving decision in the presence of a peer. However, giving collaboratively with a peer may not garner greater feelings of prosocial impact, nor social pressure, compared to giving independently in the presence of a peer.

Mediation analyses. Next, to determine whether each of the theoretical mechanisms could lead to condition differences in generosity, I conducted a set of multilevel mediation analyses. Specifically, I first used Multilevel Linear Modeling (MLM) with participants at Level 1 clustered within dyads at Level 2 to estimate each path in the model. This approach allowed me to estimate the effect of condition (a Level 2 variable) on each mediator (path a) and the effect of each mediator (grand mean centered) on generosity (path b). I used Maximum Likelihood (ML) estimation and the MIXED command in SPSS Version 25. To estimate the indirect effect ($a*b$) and its 95% confidence interval, I used *RMediation*—a shiny app based upon the *RMediation* package in R (Tofighi & Mackinnon, 2011). As seen in Figure 3, mediation analyses revealed a significant indirect effect of intrinsic enjoyment, *indirect effect* = .11, 95% CI [.02, .22]. However, I found no evidence of an indirect effect for either perceived prosocial impact, *indirect effect* = .05, 95% CI [-.05, .21], or social pressure, *indirect effect* = .09, 95% CI [-.02, .24]. Taken together, these results suggest that giving collaboratively with a peer (vs. independently in the presence of a peer) may boost generosity through greater feelings of intrinsic enjoyment, but not through perceived prosocial impact or social pressure to donate.

Interpersonal consequences

To explore whether collaborative giving fosters social connection and positive interpersonal attitudes between peers, I conducted a series of analyses across the range of interpersonal outcomes. Analyses revealed that compared to participants in the *independent giving* condition, participants in the *collaborative giving* condition reported greater relatedness, positive interpersonal feelings, perceived similarity, liking, and inclusion of other in the self ($ps < .002$; η_p^2 s between .12 and .20; see Figure 4). Taken

together, these results suggest that giving collaboratively with a peer may have the potential to facilitate social bonds between peers.

Emotional consequences (post-donation)

To explore the downstream emotional consequences of collaborative giving, I conducted two sets of analyses. First, I set out to understand whether participants in the *collaborative giving* (vs. the *independent giving*) condition reported greater happiness, regardless of baseline affect and generosity. To test this main effect hypothesis, I used Nested Analysis of Covariance (NANCOVA) to account for the non-independent structure of the data while including baseline positive affect and generosity as covariates. As seen in Table 3, I found no significant differences in post-donation positive affect across conditions, $F(1, 99) = .34, p = .562, \eta_p^2 = .00, 90\% \text{CI} [.00, .05]$. Participants in the *collaborative giving* condition were no happier ($M = 2.86, SD = .89$) than participants in the *independent giving* condition ($M = 2.87, SD = 1.00$) while controlling for baseline positive affect and generosity. Overall, these results suggest that regardless of how participants donated, giving collaboratively with a peer may not yield additional downstream emotional rewards as compared to giving independently in the presence of a peer.

Second, I set out to understand whether collaborative giving amplified the emotional rewards of large donations. To test this interaction hypothesis, I again used NANCOVA analyses that additionally included a condition \times generosity interaction term; generosity was specified as a random factor. I did not find a significant interaction between condition and generosity in predicting post-donation positive affect while controlling for baseline positive affect, $F(1, 94) = .46, p = .502, \eta_p^2 = .00, 90\% \text{CI} [.00, .05]$. These findings suggest that collaborative giving may not amplify the downstream emotional rewards of large donations compared to giving independently in the presence of a peer. However, due to the observed ceiling effect on generosity, it is difficult to make strong conclusions on these data.

2.5. Discussion

In an initial, pre-registered experimental study, I found no evidence that discussing and making a donation decision together with a peer significantly influenced generosity beyond making a donation decision independently in the presence of a peer. Notably, however, this null effect may have been the result of exceptionally high donation rates, with 85% of the sample donating the full \$5 to charity. Despite the lack of condition differences on generosity, exploratory mediation analyses revealed that the greater intrinsic enjoyment associated with making a donation decision collaboratively with a peer (vs. independently in the presence of a peer) may be a driver for greater generosity.

I did not find any evidence that giving collaboratively with a peer bolstered post-donation positive affect nor amplified the emotional rewards of larger donations. However, I did find intriguing preliminary evidence that giving collaboratively with a peer may confer positive interpersonal consequences. Indeed, participants in the *collaborative giving* condition consistently reported greater positive interpersonal attitudes and social connection with their study partner across a range of interpersonal outcomes. Of course, it may be that simply having a discussion with a peer bolsters social connection and closeness. In other words, there may be no special feature about discussing a *donation decision* with a peer that is likely to enhance social connection beyond simple conversation or collaborating to make a non-generous financial decision. Thus, employing designs that eliminate this alternative explanation is critical to conclude whether collaborative giving definitely facilitates social connection. Overall, it is first critical to determine whether such effects I observed on the interpersonal consequences of collaborative giving are replicable.

2.5.1. Limitations

Participants in both conditions donated nearly all their study endowment to charity, precluding my ability to detect for donation differences across conditions. This ceiling effect may have been the result of several design limitations: (1) asking

participants to make a donation decision in a highly observable environment, (2) using a high sympathy-evoking advertisement, (3) providing minimal cues of psychological ownership over the study payment, and (4) providing money in denominations that may have restricted variability in donations. I consider each of these limitations below.

Highly observable environment

It is possible that most participants donated the full endowment because their behaviours were perceived as highly observable, both by their peer, and by the experimenter through the video recorder. A large body of research suggests that increased observability is associated with generosity (e.g., Bradley et al., 2018; Kraft-Todd et al., 2015; Powell, Roberts, Nettle, & Fusani, 2012; Rand et al., 2014). Under observable conditions, people are often motivated to receive the social rewards of acting generously, including appearing trustworthy and competent (e.g., Hardy & van Van Vugt, 2006; Jordan, et al., 2013; Roberts, 1998). In fact, observability seems to have the most influence on generosity in laboratory studies (as opposed to field or online studies), where the scrutiny of an experimenter is salient (Bradley et al., 2018). As such, donating with or in the presence of a peer while simultaneously being video recorded may have created a highly observable environment that amplified donation rates and overpowered my ability to detect condition differences in generosity.

High sympathy-evoking advertisement

During the study, participants watched a short, emotionally gripping advertisement for the B.C. Children's Hospital Foundation (BCCHF). The video portrayed numerous terminally ill and injured youth receiving care at the hospital as well as the emotional reactions of their family members (see at osf.io/6bsxp). It is possible that this advertisement engendered a large degree of sympathy, which led to high levels of generosity.

This possibility aligns with past research demonstrating that arousing feelings of sympathy leads to generous behaviour (e.g., Batson, Early, & Salvarani, 1997; Coke, Batson, & McDavis, 1978; Loewenstein & Small, 2007; Small, 2011; Small, Loewenstein, Slovic, 2007). Researchers have identified several aspects of charitable

appeals which tend to elicit the most sympathy. For example, vividly portraying single, identifiable victims (Kogut & Ritov, 2005; Small & Loewenstein, 2003), who are similar to the viewer (Small, 2011), and who express sad facial expressions (Small & Verrochi, 2009), often engender high levels of sympathy. Similarly, advertisements which enable viewers to take the perspective of the victim (Batson et al., 2003) or display misfortunes which viewers can relate to (Small & Simonsohn, 2008) elicit high levels of sympathy. Each of these aspects were included in the BCCHF advertisement participants viewed. Specifically, single identifiable victims of similar ages to the undergraduate participants, all within the local Vancouver area; sad facial expressions; displaying the perspective of victims (e.g., a victim with mobility issues trying to walk); and displaying victims with a variety of common health issues likely to be experienced by others close to the participants (e.g., cancer). Therefore, it is possible that the advertisement elicited high levels of generosity in most participants, which overpowered my ability to detect condition differences in generosity.

Low psychological ownership

In Study 1, participants each received a \$5 endowment in an enclosed envelope in exchange for evaluating an advertisement. My intention was to increase psychological ownership over the payment—that is, the sense that payment was earned or belongs to them (Pierce, Kostova, & Dirks, 2003)—by asking participants to sign a payment receipt. Psychological ownership is a critical component to generalize the results of generosity research, as people tend to donate their own income differently than unearned income. Specifically, research suggests that people tend to be *more* generous when they use unearned money (i.e., a windfall) to donate as opposed to earned money because they consider it to be less valuable or painful to part with (e.g., Arkes et al., 1995; Cherry, Frykblom, Shogren, 2002; Keasey & Moon, 1996; Keeler, James, & Abdel-Ghany, 1985; Thaler & Johnson, 1990). Indeed, donating one’s own income is often associated with a form of psychological displeasure or pain from foregoing opportunities to spend the money on oneself (i.e., the *pain of paying effect*; Meyvis, Bennett, & Oppenheimer, 2011; Prelec & Loewenstein, 1998; Zellermayer, 1996). As a result, people often reduce their generosity to compensate for this pain of paying effect.

To counteract these effects, and ensure the generalizability of their research, researchers often try to instill a sense of psychological ownership in their participants over their study payments. However, it is possible that merely signing a payment receipt was too minimal to instill psychosocial ownership over the payment. Furthermore, several design choices may have inadvertently lowered participants' psychological ownership. Specifically, (1) the money was unexpected, (2) participants had minimal direct contact with the endowment, and (3) participants possessed the money for a brief time before making a donation decision. I consider each of these below.

Unexpected money. First, the study was not advertised as paid. Participants were not explicitly informed by the experimenter that they would be paid for completing a portion of the study until the moment they were about to complete the advertisement evaluation task and subsequent donation opportunity. As a result, the payment was unexpected and as some research suggests, people may spend more when using unexpected as compared to expected windfalls (e.g., Arkes et al., 1995). This is perhaps because expecting a payment allows people time to envision how they would spend the money (i.e., *mental accounting*; Thaler & Shefrin, 1981), thus increasing perceptions of psychological ownership (Hackinger, 2018). It is possible then that the unexpected payment left participants unable to mentally account for their money, reducing feelings of psychosocial ownership and increasing generosity.

Minimal contact with money. Second, participants received the money in a sealed envelope which they did not open or interact with until the very moment they were about to complete the donation task. Past research suggests an effective way to increase psychological ownership is to increase direct contact with the object. For example, Peck and Shu (2009) found that across four studies, touching physical objects—as compared to not touching or imagining touching objects—led to greater reported psychological ownership over the objects. Thus, it is possible that participants lack of physical interaction with the money may have reduced overall psychological ownership, and in turn, increased generosity.

Minimal time spent with money. Third, it is possible that the quick, 5-minute or less advertisement evaluation task did not have participants exert enough effort or time to consider their payment as earned. Indeed, research has shown that expending greater invested time and effort for a payment (e.g., 20–30 minutes) is associated with greater perceptions that the payment is earned/owned and greater variability in donations (e.g., Cherry et al., 2001; Hackinger, 2018; Koo & Fishbach, 2016; Strahilevitz & Loewenstein, 1998). Given that the payment was associated with the 5-minute advertisement evaluation task as opposed to the 30–45 minutes study duration, it is possible that participants did not feel they earned the money, which subsequently increased generosity.

Restrictive payment denominations

An additional limitation of Study 1 is that the \$5 endowment was presented in \$1 coins, which restricted participants' ability to make more fine-grained donations. For example, participants were unable to split half of their financial endowment (i.e., \$2.50) between themselves and charity—a choice commensurate with the results of existing research conducted on donation behaviours (e.g. Aknin, Barrington-Leigh, et al., 2013; Aknin et al., 2017). It is possible that participants may have wanted to make smaller donations, but donating \$2 (40% of the study payment) or less may have been too stingy for participants, particularly in front of their peers. Similarly, donating \$3 (60% of the study payment) may have been so psychologically close to donating the maximum amount that participants were inclined to donate the full amount. Thus, limiting the ways in which participants could donate may have overpowered my ability to detect condition differences in generosity.

2.5.2. Addressing the ceiling effect of Study 1

I aimed to examine whether the null effect I observed in Study 1 was due to a ceiling effect on generosity or whether collaborative giving is unlikely to directly boost generosity. To that end, I conducted a second well-powered, pre-registered experiment with several key design changes to address the limitations discussed above (see Study 2 Procedures). Further, Study 2 enabled me to conduct a confirmatory test of the intriguing

exploratory finding that collaborative giving led to greater intrinsic enjoyment and, in turn, boosted generosity. Similarly, Study 2 enabled the opportunity to replicate the exploratory findings suggesting that collaborative giving may help facilitate social bonds between peers.

Chapter 3.

Study 2

Building upon Study 1, I conducted a follow-up study to examine people's generosity when donating collaboratively with a peer. As in Study 1, pairs of participants were randomly assigned to either discuss and make a donation decision collaboratively (*collaborative giving* condition) or make a donation decision independently in the presence of the other participant (*independent giving* condition). Pairs of participants could also be randomly assigned to a third condition in Study 2—the *private giving* condition—in which each participant made a donation decision in their own private room (see Procedures and Measures for details).

3.1. Pre-registered Hypotheses

In Study 1, I found no evidence that collaborative giving increased generosity relative to making a donation decision independently in the presence of a peer. However, my exploratory analyses suggested that giving collaboratively with a peer was more intrinsically enjoyable than giving independently in the presence of a peer. In turn, greater intrinsic enjoyment predicted greater generosity. Thus, I pre-registered the following directional hypotheses for Study 2 on the OSF:⁴

Hypothesis 1 (H₁): Participants in the *collaborative giving* conditions will donate more generously than participants in the *independent giving* condition. I made no *a priori* predictions about the level of generosity of participants in the *private giving* condition.

Hypothesis 2 (H₂): Participants in the *collaborative giving* condition will report greater intrinsic enjoyment from making the donation decision than participants in the *independent giving* condition. I made no *a priori* predictions about the level of intrinsic enjoyment reported by participants in the *private giving* condition.

⁴ The pre-registration for Study 2 is available on the OSF at osf.io/g93xr, along with the power analyses, study materials, questionnaires, data, and analyses scripts.

Hypothesis 3 (H₃): Intrinsic enjoyment from the donation decision will mediate the relationship between condition and generosity. Specifically, participants in the *collaborative giving* condition will be more generous than participants in the *independent giving* condition through greater intrinsic enjoyment from the donation decision.

3.2. Exploratory Hypotheses

As noted above, I had no *a priori* predictions about the levels of generosity or intrinsic enjoyment of participants in the *private giving* condition. Thus, I pre-registered that I would explore how participants in the *private giving* condition compared with participants in the *collaborative* and *independent giving* conditions in my analyses using non-directional tests.

As in Study 1, I pre-registered that I would explore the impact of two alternative mediators: perceived prosocial impact and social pressure. Additionally, I pre-registered that I would try to replicate the effects I observed in Study 1 of collaborative giving on various interpersonal outcomes. In Study 1, I found that participants in the *collaborative giving* (vs. the *independent giving*) condition reported greater relatedness, positive feelings, perceived similarity, liking, and inclusion of other in the self ($ps < .002$; η_p^2 s between .12 and .20). Therefore, in Study 2, I pre-registered predictions that participants in the *collaborative giving* (vs. *independent giving*) condition would report greater positive attitudes, feelings, and connectedness towards their partner. Relatedly, I pre-registered that participants in the *collaborative giving* (vs. *independent giving*) condition would report that *their partner* would have greater positive attitudes/feelings towards *oneself*.

Again, I planned to explore the emotional consequences of collaborative giving. Given the null effects I observed in Study 1 on *post-donation* positive affect, I sought to examine the influence of collaborative giving on the positive affect that people recalled feeling *during* the donation. As in Study 1, I pre-registered two main tests. First, a main effect test examining whether participants in the *collaborative giving* (vs. *independent giving*) condition were happier during the donation decision. Second, a test examining for an interaction between condition and generosity in influencing positive affect. To be

more conservative, however, I pre-registered no *a priori* predictions for the interaction hypothesis. As in Study 1, I pre-registered that I would control for baseline happiness in both sets of analyses (i.e., prior to making the donation).⁵

3.3. Methods

3.3.1. Participants and power

Power analyses revealed that I required a minimum sample size of 240 participants (120 dyads) to have 90% power to detect my smallest effect size of interest, $f = .10$, with $\alpha = .05$, one-tailed. As in Study 1, I pre-registered a target sample of 300 participants (150 dyads) to account for up to a 25% attrition rate. I recruited a final sample of 310 undergraduates (155 dyads) from the SFU subjects pool using identical recruitment procedures as Study 1.⁶ Participants were predominantly female (73.5%), Asian (40%) and Caucasian (32.6%), with a mean age of 19.3 ($SD=2.56$). See Table 4 for a complete summary of all participant demographics.

The sample consisted of 59% same gender-dyads (83 female/female dyads and 9 male/male dyads) and 41% mixed-gender dyads, 66% mixed-ethnicity dyads; dyads were approximately equal across conditions ($n = 52$ dyads, $n = 51$ dyads, and $n = 52$ dyads in the *independent giving*, *collaborative giving*, and *private giving* conditions, respectively). Dyads were primarily strangers (91.9%), but 14 dyads reported being friends and nine dyads reported being acquaintances or recognizing one another. As in Study 1, removing these dyads did not substantively change the conclusion of the results and so all dyads

⁵ I pre-registered intentions to explore condition differences for several additional outcomes, including norms around giving (i.e., descriptive, injunctive, and local/dyadic), impression management motivations, and the extent to which they engaged in diffusion of responsibility and/or free riding. Descriptions of these items and their corresponding analyses can be found in Appendix A.

⁶ Due to the complicated nature of scheduling strangers for a dyadic study (i.e., one participant of a dyad often fails to show for their timeslot which prohibits data collection), I over-posted timeslots to expedite successful data collection. As a result, five additional dyads (10 participants) were registered to complete the study prior to study closure.

were included in the analyses. See Table 4 for a complete summary of all dyad demographics.

3.3.2. Procedure

The procedure of Study 2 was largely identical to that of Study 1. However, to address the limitations of Study 1, I made eight key changes.

Private giving condition

Foremost, in addition to the *collaborative giving* and *independent giving* conditions, pairs of participants could be randomly assigned to make their donation decision privately, outside the presence of a peer (*private giving* condition). This condition permitted me to examine the potential impact of observability on generosity in comparison to the main two conditions. Moreover, this condition provides an externally valid benchmark: people often donate or are solicited for donations in private. Thus, including this condition is useful in determining whether collaborative giving boosts people's generosity above and beyond the typical donation context. Participants in the *private giving* condition completed the exact same procedures as participants in the *independent giving* condition from the privacy of their own room. That is, participants independently listed their thoughts/feelings about a charitable advertisement and then made a donation decision with their \$5 payment on their own.

Psychological ownership changes

I made a collection of changes to increase participants' psychological ownership over their study payment. Prior to coming to the lab, I gave participants time to consider how they would spend the payment (i.e., mental accounting). Within 24 hours of registration, participants received a personal email notifying them that in addition to their course credit, they would receive a \$5 payment simply for participating; a similar reminder email was sent approximately three days before their scheduled session.⁷

⁷ The notification emails are available on the OSF project page at osf.io/wcnv7/.

Upon arriving to the lab, I attempted to increase psychological ownership by prolonging the duration that the payment was in participants' possession and increasing their direct contact with the money. Specifically, participants were immediately given their \$5 study payment upon providing informed consent. Then, participants (1) counted the money to ensure they received their full payment and (2) placed the payment in their pocket, wallet, or bag before signing the payment receipt.

Smaller coin denominations

While the total study payment amount was identical across studies (i.e., \$5), I split the amount into smaller coin denominations in Study 2 to allow for greater variability in donations (e.g., \$2.50, \$1.75). Specifically, participants were given one \$2 coin, two \$1 coins, and four \$0.25 coins. To assuage suspicions about using particular denominations for the study payment, the Research Assistant (RA) told participants that only change was available in the lab.

Baseline questionnaire

I condensed the baseline questionnaire to assess only a selection of basic demographic items (i.e., gender, age, ethnicity) and capture participants' baseline happiness across two items. Specifically, participants rated their state happiness ("Do you feel happy right now?"; from 1–*Not at all* to 5–*Extremely*) and trait happiness ("In general, I consider myself...": from 1–*Not a very happy person* to 7–*A very happy person*; Lyubomirsky & Lepper, 1999). To disguise my exploratory interest in happiness, these items were presented among several filler questions (e.g., "How tired are you feeling right now?").

Print advertisement

In Study 1, participants were introduced to the BC. Children's Hospital Foundation (BCCHF) with a vivid, emotionally evocative video advertisement. To reduce these high-sympathy evoking conditions in Study 2, participants received a print advertisement for the BCCHF alongside the same basic description about the foundation included in Study 1 (see Appendix B for print advertisement).

Administering study instructions

In Study 1, participants did not always understand the written instructions for the advertisement evaluation task, the experimental manipulation, or the donation opportunity. Therefore, in Study 2, the RA verbally administered the experimental manipulation and explained the advertisement evaluation task and the donation opportunity. The RAs were blind to the study hypotheses, reducing the likelihood that they would influence participants' behaviours in a systematic way (i.e., experimenter expectancy effect; Rosenthal, 1966).

To administer the experimental manipulation, the RA told participants in the *collaborative giving* condition to (1) pool their payments, (2) freely discuss and decide together whether and how much of their combined \$10 sum to donate (vs. keep for themselves), and (3) split any money not donated evenly. Meanwhile, participants in the *independent* and *private giving* conditions were simply told that they were free to decide whether and how much of their \$5 study payment to donate (vs keep).

To present the donation opportunity, the RAs informed participants in all conditions that our lab often collects money for charitable campaigns and at the time was collecting money for the BCCHF. The RA told participants that because we were studying decision making, they could decide how much, if any, of their study payment to give to the BCCHF and that any donations would go directly to the BCCHF. Notably, this cover story replaced the one used in Study 1, which stated that previous participants had inquired about making a donation as this may have introduced a descriptive norm that one's peers are generous. Therefore, I updated the cover story in Study 2 to remove social information that could unduly influence participant donation behaviour.

Donation materials

Participants received the same materials to complete the donation opportunity as those in Study 1: an empty envelope in which to seal donations and an empty donation

box marked with the BCCHF logo.⁸ In Study 1, the envelopes were labeled “For Charity” and the donation box was visible from the start of the advertisement evaluation. To help minimize participants’ suspicions about the purpose of the study and ensure that participants maintained focus during the advertisement evaluation task, the box was presented only at the time of the donation opportunity and the envelopes were left blank. Participants in the *collaborative* and *independent giving* conditions had a single donation box placed in the room between the pair whereas *private giving* participants each received their own donation box.

Covert video recording

Participants in the *collaborative* and *independent giving* conditions were covertly recorded using a non-obtrusive spy camera disguised as a small wall clock. This covert recording permitted me to confirm that participants abided by the experimental manipulation while removing obvious cues of surveillance that may inflate generosity. Video data were kept only for participants who provided informed video consent after data collection was finished.

3.3.3. Measures

Unless otherwise noted below, participants completed measures identical to Study 1.⁹ Two small language changes were made throughout the questionnaires for the sake of clarity and consistency. First, any item referencing the donation opportunity specifically referred to a “*donation*” rather than a “*financial*” decision. Second, any mention of a “*study partner*” was changed to “*the other participant*” so that the item applied to all conditions, including the *private giving* condition. For the internal consistency statistics for all scales, see Table 5.

⁸ *Collaborative giving* participants received a single envelope between them whereas *independent* and *private giving* participants received their own envelopes; envelopes were surreptitiously marked to facilitate data collation.

⁹ For all additional exploratory outcomes, see the *Supplementary Methods (Study 2)* in Appendix A.

Generosity

The amount of money donated by each participant was my primary pre-registered dependent variable. Unlike Study 1, participants did not record their donation decision on paper because this may have heightened perceptions of observability. Instead, RAs counted the funds placed in the donation envelopes. Approximately 10% of the sample ($N = 32$) elected to give their own money *instead* of or *in addition* to the money included in the study payment. These data were included in the analyses and therefore, the measure of generosity ranged between \$0 and \$10.

Perceived prosocial impact

Participants completed five items nearly identical to those used in Study 1 assessing perceived prosocial impact (Grant et al., 2007). However, each item was modified slightly to remove qualifiers that may have made the item too strong for the context of a small \$5 donation. For example, the item from Study 1, “Our actions will make a *significant* difference in people’s lives,” was modified in Study 2 to, “Our actions will make a difference in people’s lives.”

Social pressure

Participants completed a single item from the pressure/tension scale, similarly used in Study 1, to assess social pressure (e.g., “I felt pressured while we were making our donation decision;” Ryan, 1982). This item was selected from the scale for its strong face validity in measuring social pressure. While utilizing scales is often a more reliable and valid measurement strategy compared single items (e.g, Diamantopoulos et al., 2012; Nunnally, 1978), the remaining three items of the pressure/tension scale used in Study 1 were largely measures of anxiety/tension as opposed to social pressure (e.g. “I was anxious while we were making our financial decision”). Therefore, as opposed to relying upon a scale which may not have fully captured social pressure as a construct, I utilized a single item with strong face validity.

Interpersonal consequences

In addition to completing all the interpersonal measures used in Study 1 (i.e., relatedness, positive feelings, perceived similarity, liking, and inclusion of the other in self; see Table 5), participants rated how much they enjoyed working with the other participant (-5 – *Not at all* to +5 – *Very much*). Furthermore, participants reported their perceptions of how their *study partner* felt about *them*. Specifically, how positive (vs. negative) they believed their study partner felt towards them; how interested (vs. uninterested) their study partner would be in working with them again in the future; and, how much their study partner enjoyed working with them; all items were rated on a scale from -5 to +5.

Emotional consequences (recalled)

Rather than asking participants to rate their *post-donation* positive affect as they did in Study 1, participants in Study 2 were asked to recall how they felt *during* the donation opportunity. As in Study 1, participants reported their positive affect on the PANAS (Watson et al., 1988). I also added the Scale of Positive and Negative Experience (SPANE; Diener et al., 2009) because of its strengths in assessing both general and specific positive states.

3.4. Results

For the descriptive and inferential statistics for all of the below preregistered analyses, please see Table 6.

3.4.1. Manipulation check

As in Study 1, I first tested whether conditions differed in the level of interaction between pairs during the donation opportunity. A NANOVA omnibus test revealed an overall significant effect of condition on time spent discussing the donation decision with one's study partner, $F(2, 151) = 193.16, p < .001, \eta_p^2 = .72, 90\% \text{CI} [.66, .76]$. Planned pairwise comparisons were conducted using Fisher's Least Significant Difference (LSD)—the recommended approach to control for family-wise error rates in designs with

three experimental conditions (Myers, Well, & Lorch, 2010). Confirming the success of my manipulation, planned contrasts revealed that participants in the *collaborative giving* condition spent significantly more time talking with the other participant when making the donation decision than either participants in the *independent giving* or *private giving* conditions ($ps < .001$). On average, participants in the *independent* and *private giving* conditions spoke with one another very little when making the donation decision. However, the difference between these latter conditions was significant ($p < .001$), indicating that participants isolated in their own testing rooms had little opportunity to interact with their study partner.

Fifty-six participants (18% of the sample) responded to the manipulation check question in ways that were inconsistent with their condition assignment. Specifically, five participants in the *collaborative giving* condition reported not speaking with their study partner when making their donation, 47 participants in the *independent giving*, and four participants in the *private giving*¹⁰ condition reported speaking with their study partner to some degree when making their donation. As in Study 1, I pre-registered that I would code available video data to see whether participants uttered at least one sentence to each other about how much money to donate to charity. However, due to campus access restrictions during the current COVID-19 pandemic, these videos are currently unavailable. Given that excluding participants who failed the manipulation check did not substantively alter the conclusions from my analyses in Study 1, I included all data in the analyses.

3.4.2. Pre-registered analyses

Generosity (H₁)

I used an omnibus NANOVA test with a planned LSD pairwise comparison to test my primary pre-registered hypothesis (H₁) that giving collaboratively with a peer (vs.

¹⁰ It is impossible for participants to speak with one another during the advertisement evaluation task and donation opportunity, so it is quite likely that participants simply misunderstood the question. All participants were kept in the analyses.

independently in the presence of a peer) led to greater generosity in the donation task. Given the directional nature of this hypothesis, I pre-registered the use of a one-tailed test. As in Study 1, analyses revealed that there were no differences between levels of generosity across conditions, $F(2, 152) = 0.12, p = .988, \eta_p^2 = .00, 90\% \text{ CI } [.00, .01]$. Participants in the *collaborative giving* condition gave a similar amount of money to charity ($M = 3.93, SD = 1.59$) as participants in the *independent giving* condition ($M = 3.89, SD = 1.93; M_{\text{diff.}} = .04, SE = .21, p = .420$; see Figure 5). Across the sample, donations were relatively high on average ($M = 3.90, SD = 1.92$). Because each participant received a \$5 study endowment, these donation rates indicate that participants gave roughly 80% of their study payment on average. Importantly, donation rates were not at ceiling as they were in Study 1—only 51% of the sample gave the full \$5 study payment in Study 2 as compared to the 85% who did so in Study 1. Taken together, these results suggest that a ceiling effect did not preclude my ability to detect group differences in Study 2—as it did in Study 1. Thus, these results fail to support the hypothesized direct positive effect of collaborative giving on generosity.

Intrinsic enjoyment (H₂)

Employing an identical analytic strategy, I tested my second hypothesis (H₂) that giving collaboratively with a peer (vs. independently in the presence of a peer) would be more intrinsically enjoyable. The omnibus test assessing for differences across conditions in reported levels of intrinsic enjoyment did not reach significance, $F(2, 151) = 2.51, p = .085, \eta_p^2 = .03, 90\% \text{ CI } [.00, .08]$. Despite this result, I followed my pre-registered analysis plan to test my directional hypothesis that participants in the *collaborative giving* condition reported greater levels of intrinsic enjoyment than participants in the *independent giving* condition. In line with my hypothesis—and replicating the exploratory results found in Study 1—participants in the *collaborative giving* condition reported greater levels of intrinsic enjoyment ($M = 4.77, SD = 1.30$) than participants in the *independent giving* condition ($M = 4.42, SD = 1.38$); $M_{\text{diff.}} = .35, SE = .29, p = .035$ (see Figure 6).

Intrinsic enjoyment as a theoretical mediator (H₃)

As in Study 1, I tested whether participants in the *collaborative giving* (vs. *independent giving*) condition were more generous through greater intrinsic enjoyment (H₃; see Zhou et al., 2010). To do so, I employed the same analytic strategy used in Study 1. That is, I derived estimates of each path in the mediation model using MLM with participants at Level 1 clustered within dyads at Level 2. Specifically, I used Maximum Likelihood estimation to estimate the effect of condition (Level 2; *independent giving* = 0; *collaborative giving* = 1) on intrinsic enjoyment (path a) and the effect of intrinsic enjoyment (grand mean centered) on generosity (path b). I then tested the indirect effect (a*b) by entering the path estimates into *Rmediation*, a shiny app based upon the *Rmediation* package in *R* (Tofighi & Mackinnon, 2011). As pre-registered, all three tests were one-tailed because of my directional hypotheses.

In line with my pre-registered hypothesis—and replicating the effect found in Study 1—mediation analyses revealed a significant indirect effect of intrinsic enjoyment, *indirect effect* = .07, 90%CI [.002, .16] (see Figure 7). These findings suggest that compared to giving to charity individually in the presence of a peer, giving collaboratively with a peer may boost generosity through greater intrinsic enjoyment.

3.4.3. Exploratory analyses

Descriptive and inferential statistics for all of the exploratory analyses below can be found in Table 6. For a summary of the analyses conducted with all my additional exploratory outcomes—including norms and impression management—please see Appendix A.

Private giving condition

As pre-registered, I explored how participants in the *private giving* condition compared with participants in the *collaborative and independent giving* conditions in each of the above tests. I used non-directional, two-tailed tests because I did not have any *a priori* predictions about how the *private giving* condition would compare to the others. First, with respect to generosity, *private giving* participants did not give to charity any

differently than either participants in the *collaborative giving* or *independent giving* conditions ($ps > .864$). The lack of difference between the *private giving* and the *collaborative giving* conditions suggests that asking people to give collaboratively with a peer or in the presence of a peer has no impact on donation levels beyond the typical “business as usual” form of charitable giving (i.e., giving alone in private). Interestingly, the lack of differences in generosity between participants in the *private giving* and *independent giving* conditions also suggests that increased observability in the *independent giving* condition did not raise donations.

Second, with respect to intrinsic enjoyment, non-directional pairwise comparisons revealed that participants in the *private giving* condition reported marginally less intrinsic enjoyment than participants in the *collaborative giving* condition ($p = .058$) and similar levels as participant in the *independent giving* condition ($p = .923$). Taken together, these results suggest that giving individually leads to similar levels of intrinsic enjoyment as giving in the presence of a peer, but that giving collaboratively *with* a peer may be marginally more intrinsically enjoyable than giving in private.

Finally, I pre-reregistered that I would test the mediation model examining the indirect effect of intrinsic enjoyment when including the private giving condition ($-1 = \textit{private giving}$; $0 = \textit{independent giving}$; $1 = \textit{collaborative giving}$). However, in light of the results that participants in the *private giving* and *independent giving* conditions did not differ in intrinsic enjoyment—and participants donated similarly across conditions—adding the *private condition* separately to the model likely only served to weaken the overall effect. Indeed, under this model, the indirect effect weakened, $\textit{indirect effect} = .05$, 95%CI [.00, .12]. While not pre-registered, perhaps a more interpretable model would be to compare participants across both the *private* and *independent giving* conditions with participants in the *collaborative giving* condition ($0 = \textit{private giving}$ and *independent giving*; $1 = \textit{collaborative giving}$). Under this exploratory alternative model, consistent with my overall hypothesis, analyses revealed a significant indirect effect of intrinsic enjoyment, $\textit{indirect effect} = .10$, 95%CI [.01, .22], 90%CI [.02, .20]. Taken together, these results suggest that giving collaboratively with a peer may indirectly boost collaborative giving through greater intrinsic enjoyment when compared to making an

individual giving decision—both in and out of the presence of a peer. However, given that this model was not pre-registered, it should be interpreted with caution.

Exploratory theoretical mediators

As in Study 1, despite observing no direct effect of condition on generosity, I aimed to test the indirect effects of my exploratory theoretical mediators: perceived prosocial impact and social pressure. Mediation analyses revealed no significant indirect effect of perceived prosocial impact, *indirect effect* = .07, 95%CI [-.01, .19], suggesting that the potential to make a larger prosocial impact by giving collaboratively with a peer does not encourage greater generosity. In contrast, I did find a significant indirect effect of social pressure, *indirect effect* = .08, 95%CI [.001, .19]. Interestingly, as shown in Figure 8, *collaborative giving* was associated with *less* social pressure ($b = -.57$, $SE = .27$, $p = .036$), possibly because participants were able to explain their donation preferences and come to a final mutual decision with a peer. Meanwhile, participants in the *independent giving* condition may have felt watched and unable to explain their donation choice. Importantly, feeling less social pressure in turn was associated with *greater* generosity ($b = -.14$, $SE = .05$, $p = .012$). These exploratory findings are intriguing and worthy of more rigorous future investigation, especially because social pressure was captured with a single item measure (see Discussion).

Interpersonal consequences

In Study 1, I observed that participants who gave collaboratively with a peer (vs independently in the presence of a peer) reported feeling greater social connection to their study partner across a range of interpersonal outcomes—including greater relatedness, positive feelings, perceived similarity, liking, and inclusion of other in the self. To follow up on these findings in Study 2, I pre-registered my intent to examine the potential for collaborative giving to develop relationships between peers via interpersonal outcomes using several directional (one-tailed) tests. Replicating each of the exploratory results observed in Study 1, participants in the *collaborative giving* (vs. the *independent giving*) reported greater positive feelings, relatedness, inclusion of other in self, liking, and perceived similarity (all $ps < .001$; η_p^2 s between .16 and .35; see Figure 9). Participants in

the *collaborative giving* condition also enjoyed working with their study partner more and were more interested in working with them again in the future ($ps < .001$; η_p^2 s = .12 and .18, respectively). Additionally, I found that participants in the *collaborative giving* condition believed that their *study partner* 1) felt more positive *towards themselves*, 2) enjoyed working with them more, and 3) was more interested in working with them in the future ($ps < .001$; η_p^2 s between .10 and .17). Taken together, these results suggest that giving collaboratively with a peer may have the potential to facilitate social bonds between peers. Indeed, these robust results are worthy of future rigorous investigation designed to eliminate important alternative explanations (e.g., *any* collaborative task—generous or otherwise—can develop relationships between peers). I am currently investigating this question in follow up study (see Discussion).

Each of the above results were substantially stronger when comparing the *collaborative giving* condition with the *private giving* condition. Indeed, participants in the *collaborative giving* condition held much stronger positive attitudes and feelings towards their partner—and similarly, that their study partner held positive attitudes towards themselves—than participants in the *private giving* condition ($ps < .001$; see Table 6). Interestingly, participants in the *independent giving* (vs. *private giving*) condition also held significantly greater positive attitudes and feelings towards their study partner ($ps < .028$; see Table 6). Across these conditions, participants did not differ on their beliefs of how positive their study partner felt towards them nor in how interested their study partner was in working with them again in the future ($ps > .247$). However, participants in the *independent giving* condition believed that their study partner enjoyed working with them more than participants in the *private giving* condition did ($p = .009$). Taken together, these results suggest that collaborative giving may help peers form relationships. Yet, compared to giving in complete isolation, giving individually in the presence of a peer—even without saying so much as a word—may provide initial kindling to foster positive attitudes, feelings, and connections between peers.

Emotional consequences (recalled)

Finally, I tested the emotional consequences of making a collaborative giving decision on two different measures of emotion—the PANAS and the SPANE – using

NANCOVA analyses with LSD pairwise comparisons. First, I tested whether participants in the *collaborative giving* (vs. *independent giving*) condition were happier simply for making the donation decision together with a peer, controlling for their levels of generosity and baseline happiness.¹¹ Contrary to predictions, analyses revealed no main effect of condition on positive emotions experienced during the donation on both the PANAS and SPANE ($ps > .407$; see Table 6). Indeed, on the PANAS, for example, participants in the *collaborative giving* condition felt similarly as positive during the donation decision ($M = 2.91, SE = .08$) as participants in the *independent giving* condition ($M = 2.84, SE = .08; M_{diff.} = .07, SE = .12, p = .274$; see Table 6 for results with the SPANE). There were also no significant differences found between the emotion ratings of participants in the *private giving* condition and either participants in the *collaborative* or *independent giving* conditions ($ps > .555$). These results suggest that giving collaboratively with a peer does not lead to greater happiness during the donation decision compared to giving independently in the presence of a peer, holding constant baseline happiness and generosity levels.

Critically, as in Study 1, I tested whether giving generously to charity may be differentially rewarding for participants in the *collaborative giving* (vs. *independent giving*) condition, controlling for baseline happiness. I conducted NANCOVA analyses using two-tailed tests because I did not have *a priori* predictions. Analyses revealed no evidence of an interaction between condition and generosity in predicting positive emotions experienced during the donation on both the PANAS and the SPANE ($ps > .619$). Taken together, these results suggest that compared to giving independently in the presence of a peer, giving collaboratively does not amplify the emotional rewards of larger donations.

¹¹ I pre-registered that I would average across the two baseline measures of happiness if they were highly correlated with one another (i.e., $r > .30$), and the actual correlation ($r = .46, p < .001$) met this criterion, so I standardized and averaged across items to create a baseline composite of happiness.

3.5. Collaborative Giving, Interpersonal Closeness, Intrinsic enjoyment, and Generosity in Studies 1 and 2 (Exploratory)

In Studies 1 and 2, I found no direct effect of condition on generosity. However, participants in the *collaborative giving* (vs. *independent giving*) condition reported greater intrinsic enjoyment when donating, which in turn boosted generosity. Furthermore, participants in the *collaborative giving* condition consistently felt closer and more connected to their study partner than participants in the *independent giving* condition. Taken together, these robust results open up several intriguing exploratory questions.

Given that past research shows that social connection can motivate generous action (e.g., Small & Simonsohn, 2008), can giving collaboratively with a peer boost generosity by facilitating interpersonal closeness between peers? Evidence suggests that collaborating with others fosters intrinsic enjoyment because it offers opportunities for social connection (e.g. Carr & Walton, 2014). Does collaborative giving boost generosity because people derive intrinsic enjoyment from connecting with others? To test these questions, I conducted a series of analyses to understand the overall relationship between collaborative giving, interpersonal closeness, intrinsic enjoyment, and generosity in Studies 1 and 2. All tests were two-tailed given the exploratory nature of these analyses.

3.5.1. Generalized interpersonal closeness composite

To conduct the analyses, I created a generalized measure of interpersonal closeness in each study. This composite measure included the five measures that assessed interpersonal closeness consistently across studies.¹² Internal consistency analyses revealed that the interpersonal outcomes held together at acceptable levels in both Study

¹² To facilitate interpretation of the results across studies and maintain consistency across analyses, the composite consisted only of items assessed in both studies. Thus, peripheral items of social connection—including participants' perceptions about their peer's interpersonal feelings and attitudes—were excluded. Moreover, one item of the relatedness subscale, which had reduced overall scale reliability in Study 2 (see note in Table 5), was also removed. Including these items did not substantially change reliability in either study or the conclusions of the analyses.

1 ($\alpha = .90$) and Study 2 ($\alpha = .89$). I accepted the high internal consistency as minimal justification to standardize and average across the interpersonal items to create generalized composites of interpersonal closeness in each study. Analyses for individual interpersonal outcomes are reported in Tables 7 – 10.

3.5.2. Indirect effect of intrinsic enjoyment controlling for interpersonal closeness

Given the robust effects I observed of collaborative giving on intrinsic enjoyment and interpersonal closeness, I first examined whether the indirect effect I observed of collaborative giving boosting generosity through intrinsic enjoyment may be due in part to the interpersonal closeness benefits of collaborative giving. To test this, I repeated my multilevel mediation analyses estimating the indirect effect of intrinsic enjoyment across each study. Critically, however, I additionally modeled interpersonal closeness as a fixed factor (grand mean centered) in each path of the model to examine whether the indirect effect of intrinsic enjoyment would remain robust when controlling for interpersonal closeness.

As seen in Tables 7 and 8, when controlling for interpersonal closeness, the indirect effect of intrinsic enjoyment vanished—both in Study 1, *indirect effect* = .03, 95%CI [-.04, .12] and in Study 2, *indirect effect* = -.01, 95%CI [-.08, .04]. This pattern of results practically held for each of the individual interpersonal outcomes (see Tables 7-8); although in Study 1, there were two notable exceptions: the indirect effect of intrinsic enjoyment held both when controlling for perceived similarity and the inclusion of other in self. Overall, these results are consistent with the notion that interpersonal closeness may be a critical component in the relationship between collaborative giving, intrinsic enjoyment, and generosity.

3.5.3. Indirect effect of collaborative giving on generosity through interpersonal closeness

Having established that interpersonal closeness may be in part responsible for the impact of collaborative giving indirectly boosting generosity through intrinsic enjoyment,

I tested whether interpersonal closeness would act as a robust mediator in itself. Specifically, I used multilevel mediation analyses to test whether participants in the *collaborative giving* (vs. *independent giving*) condition were more generous through interpersonal closeness; all tests were two-tailed.

In Study 1, I found no evidence that collaborative giving boosted generosity through generalized interpersonal closeness, *indirect effect* = .01, 95%CI [-.14, .16] (see Figure 10). Similarly, analyses across the range of interpersonal measures revealed no evidence of an indirect effect (see Table 9). In Study 2, however, mediation analyses revealed a significant indirect effect of generalized interpersonal closeness, *indirect effect* = .29, 95%CI [.09, .53] (see Figure 11). Similarly, I found a significant indirect effect of perceived similarity, partner liking, enjoyment working with study partner, perceived enjoyment working with study partner, and perceived feelings of study partner towards self (see Table 10). Thus, I observed mixed evidence for collaborative giving boosting generosity through interpersonal closeness across studies, but the intriguing findings in Study 2 warrant further rigorous, confirmatory investigation.

3.5.4. Serial indirect effect: The impact of collaborative giving on generosity through interpersonal closeness and intrinsic enjoyment

Finally, I tested whether giving collaboratively with a peer may boost generosity through interpersonal closeness and intrinsic enjoyment. Specifically, using the R package *lavaan* (Rosseel, 2012; version 0.6-6), I conducted multilevel serial mediation analyses regressing generosity on condition (0 = *independent giving*; *collaborative giving* = 1) through interpersonal closeness (Mediator 1) and intrinsic enjoyment (Mediator 2); all analyses were two-tailed. As seen in Figure 12, analyses revealed a significant serial indirect effect in Study 1, such that collaborative giving (vs. independent giving) boosted generosity through interpersonal closeness and intrinsic enjoyment, *serial indirect effect* = .08, 95%CI [.001, .16], *SE* = .04, *p* = .046. In Study 2, the effect was similar in size, but marginal, *serial indirect effect* = .09, 95%CI [-.02, .19], *SE* = .05, *p* = .100 (see Figure 13). Together, the overall pattern of results suggests an intriguing possibility that collaborative giving may boost generosity because people find it intrinsically enjoyable to

connect with a peer over a donation decision. However, these exploratory results require further rigorous examination and confirmatory work to make any strong conclusions.

Of course, the alternative serial mediation model—generosity regressed on condition through intrinsic enjoyment (Mediator 1) and interpersonal closeness (Mediator 2)—is also plausible. Indeed, theoretical evidence suggests that engaging in novel, interesting, and enjoyable experiences with others motivates people to expand themselves and approach and build connections with others (e.g., Aron et al., 2013; Fredrickson, 1998, 2001). The alternative model appeared to be a worse fit for the data—both in Study 1, *serial indirect effect* = -.00, 95%CI [-.03, .03], *SE* = .01, *p* = .891, and in Study 2, *serial indirect effect* = .03, 95%CI [-.01, .07], *SE* = .02, *p* = .147. However, relying upon the statistical significance of a reversed mediational model to evaluate the fit of different mediation models can lead to inaccurate conclusions (Lemmer & Gollwitzer, 2016; Thoemmes, 2015). Thus, to make strong conclusions about the plausibility of each model, further confirmatory work with designs that manipulate both the focal factor and each mediator in the model is required (e.g., Spencer, Zanna, & Fong, 2005).

Chapter 4.

General Discussion

In the present research, I examined the influence of discussing and reaching a donation decision together with an unacquainted peer on financial generosity. Across two well-powered, pre-registered studies, I observed no direct benefit of giving collaboratively with a peer in boosting people's generosity compared to giving independently in the presence of a peer (Study 1 and 2) or privately (Study 2). However, I found consistent evidence across studies that people derive greater intrinsic enjoyment from making a collaborative donation with a peer, which in turn, may boost generosity. The second most robust finding I observed across studies was that collaborative giving may foster social bonds between peers by increasing feelings of social connection and closeness across numerous interpersonal outcomes. Because both of these findings were pre-registered and confirmed in Study 2, these findings primarily suggest that giving collaboratively with a peer has the potential to both (1) boost short-term financial generosity by cultivating feelings of intrinsic enjoyment and (2) help unacquainted peers forge social bonds.

I also conducted a series of exploratory analyses to probe the relationship between intrinsic enjoyment and partner liking in my data. When controlling for interpersonal closeness, the indirect effect I observed of collaborative giving boosting generosity through intrinsic enjoyment vanished. Exploratory evidence in Study 2 suggested that collaborative giving may boost generosity through increased feelings of social connection and closeness, but this effect did not emerge in Study 1. Finally, serial mediation analyses in Study 1 suggested the collaborative giving may boost generosity through interpersonal closeness and intrinsic enjoyment, but evidence for this serial model was mixed because the effect was marginal in Study 2. Taken together, these analyses provide preliminary evidence that giving collaboratively with a peer may boost generosity because connecting socially with a peer over a donation decision may be intrinsically enjoyable. Of course, the exploratory nature of these findings warrants further rigorous confirmatory research which fully manipulates all factors in the proposed model.

Additional exploratory analyses across studies revealed a mixture of inconsistent and null results. I found in Study 2 that people experienced less social pressure when giving collaboratively with a peer, which in turn, predicted greater generosity, but this effect did not emerge in Study 1. Overall, I found no evidence across studies that giving collaboratively boosted generosity by increasing perceived prosocial impact. Finally, I found no evidence that collaborative giving boosts the emotional rewards of charitable giving—giving with another person did not lead to greater positive affect after (Study 1) or during (Study 2) the donation, nor did it amplify the emotional rewards of larger donations.

4.1. Implications

The present work expands the larger body of research investigating the situational forces shaping people's generosity (e.g., Dovidio & Penner, 2001; Schroeder et al., 1995) and offers novel insight into a relatively common, yet frequently overlooked interpersonal form of charitable giving. The minimal but growing body of correlational evidence, while mixed, suggests that collaborative giving may enhance donation rates (e.g., Brown et al., 2010; Collective Giving Research Group, 2017; Toppe et al., 2002; Yörük, 2010). Few studies have investigated this potential relationship experimentally, and those that have are fraught with methodological and analytical limitations—from low statistical power, limited experimental designs, to improper analytic strategies (Baron et al., 1974; Bischoff & Krauskopf, 2015). However, the present experimental work uses the most rigorous methods to date to challenge the speculative correlational evidence and provides valuable guidance for future work (c.f., Matosin, Frank, Engel, Lum, & Newell, 2014). Contrary to prior work, I found no evidence that giving collaboratively with an unacquainted peer directly increases short-term generosity. However, donating collaboratively with another person did lead to greater feelings of intrinsic enjoyment which, in turn, led to greater generosity in both studies.

In contrast to the robust indirect effect I found with intrinsic enjoyment, I did not find consistent effects for either of my proposed alternative mediators—perceived prosocial impact and social pressure. Perceived prosocial impact is likely a critical

motivator of generosity (e.g., Cryder et al., 2013; Small & Loewenstein, 2003) and key for unlocking the happiness benefits of giving (e.g., Aknin, Dunn, Whillans, et al., 2013; Lok & Dunn, 2020). Yet, despite the potential for collaboration to increase feelings of competence (e.g., Carr & Walton, 2014), I observed no evidence that people who gave collaboratively with a peer experienced greater feelings of prosocial impact, nor that impact indirectly boosted generosity. One possibility for these null effects is that simply having the capacity to donate more money to charity with a peer may not be enough to enhance prosocial impact. Indeed, past work suggests that people may more readily contribute to crowdfunding projects when they believe they will have a large positive impact (Kuppuswamy & Bayus, 2017). However, perceptions of impact were moderated by how much knowledge people had about the progress of the shared crowdfunding goal (e.g., if the project is almost near its deadline, a small funding request, or had only limited support; Kuppuswamy & Bayus, 2017). This suggests that people may need to have a more robust discussion about the impact of their shared donation to boost perceptions of impact and perhaps generosity in turn. Of course, given that my sample consisted of unacquainted peers making a one-time donation in the context of a short lab study, unprompted discussions of impact may have been unlikely. Rather, prosocial impact may be more salient or more likely to be discussed between people in established relationships who make collaborative giving decisions on an ongoing basis, such as friends or romantic couples (see Limitations and Future Directions).

In Study 2, I did observe some support for social pressure as a potential mediator between collaborative giving and generosity. Results, however, were in a counterintuitive direction: participants in the *collaborative giving* condition experienced *less* social pressure which, in turn, indirectly boosted generosity. This result is theoretically intriguing as past work suggests that discussing a donation decision with a peer leads to *greater* social pressure to donate generously in subsequent donation opportunities (e.g., Reyniers & Bhalla, 2013). However, social pressure was measured using only a single item with strong face validity in Study 2. In Study 1, the effect was in the same direction using a full scale, but neither the main effect nor the indirect effect reached significance and the scale may have captured anxiety/tension rather than social pressure. Taken together, these inconsistent results limit conclusions that can be drawn about the capacity

for collaborative giving to boost generosity by minimizing social pressure. Thus, future research is needed to examine the effect of social pressure on generosity in collaborative giving contexts. In fact, research conducted with pairs in close relationships may be particularly fruitful given the potent social influence of a close other on people's behaviour (e.g., Bond et al., 2012; Felmlee & Sprecher, 2000; Kelly, 1983; for a full discussion, see Limitations and Future Directions).

A robust and growing literature suggests that people derive happiness from giving (Aknin, Barrington-Leigh, et al., 2013; Aknin et al., 2020; Curry et al., 2018). Across studies, I found that collaborative giving did not lead to greater positive emotion nor amplify positive emotion when people gave larger donations. The consistent null effects I observed on positive emotion are especially intriguing in light of the robust effect I found on intrinsic enjoyment and past research demonstrating that even minimal opportunities for social connection promote positive affect (e.g., Sandstrom & Dunn, 2013). Taken together, this pattern of results suggests that further empirical work is necessary to disentangle conflicting findings and fully examine the affective consequences of collaborative giving.

The present results also provide preliminary theoretical and practical insight into the potential for collaborative giving to develop relationships between peers. Across studies, participants who were randomly assigned to give collaboratively with a peer consistently reported greater feelings of social connection and interpersonal closeness than those randomly assigned to give independently in or out of the presence of a peer. Indeed, the differences between conditions were substantially large across the range of interpersonal outcomes (average $d = .93$). These results are especially intriguing given that participants spent only a limited time with each other overall (approximately 5-10 minutes). Moreover, these findings are not due to simply spending more time with a peer as my experimental design controls for physical presence (i.e., *independent giving* condition). These findings are consistent with past work on *self-expansion* (Aron et al., 2013), suggesting that people find giving collaboratively with a peer to be an interesting and novel experience that enables people to connect with and feel closer to their peer. These results suggest that there may be potential for collaborative giving to be used as an

intervention to quickly bolster social connections between peer across a variety of contexts (e.g., workplace, classrooms). However, further rigorous, confirmatory work that address critical alternative explanations is needed (see Collaborative giving and Social Connection below).

4.2. Limitations and Future Directions

4.2.1. Collaborative giving and generosity

To my surprise, I found no direct effect of collaborative giving on generosity, despite past work suggesting a relationship between collaborative giving and generosity (e.g., Collective Giving Research Group, 2017). One possibility for this null effect is that giving collaboratively with an unacquainted peer has no bearing on short-term generosity—or the effect is so small, it would take a much larger sample to detect. Future work could conduct experiments with even larger samples to detect smaller effects and employ Bayesian analyses to help quantify to what degree there is evidence in favor of the null or the alternative (Edwards, Lindman, & Savage, 1963; Gallistel, 2009; Rouder, Speckman, Sun, Morey, & Iverson, 2009; Wagenmakers, 2007).

A second possibility is that people’s short-term generosity may be affected more strongly when people give collaboratively with a close other or “strong tie” (e.g., romantic partner, friend, or family member) or perhaps even someone they are likely to re-connect or interact with again in the future. In both studies, I recruited convenience samples of pairs of unacquainted undergraduate peers participating in exchange for course credit. Of course, these weak ties (i.e., strangers and acquaintances) can influence our emotions and behaviour in important ways (e.g., Flynn & Lake, 2008; Sandstrom & Dunn, 2014) and it is important to understand whether giving collaboratively with a peer can boost people’s generosity. However, strong ties often have a much more powerful influence on people’s behaviours (Felmlee & Sprecher, 2000; Kelly, 1983), including encouraging and/or pressuring people to engage in civic behaviours such as voting (Bond et al., 2012). Indeed, it is possible that null or inconsistent effects I observed—both in generosity, prosocial impact, and social pressure—may have been the result of examining

my research questions with unacquainted peers rather than close relationships. In fact, people may be more likely to give collaboratively with a romantic partner, friend or family than a stranger or acquaintance in the real world (e.g., Andreoni et al., 2003; Brown, 2005; Dale, 2016). As such, it may be more externally valid for future research to investigate the impact of collaborative giving on short-term generosity among close dyads (e.g., romantic partners, friends) rather than strangers.

A third possibility is that giving collaboratively with a peer may more likely affect a different dimension of generosity: that is, not how *much* people give in a one-time donation, but how *often* people give to charity over time. Indeed, one limitation of the present work is that it focused on short-term generosity during one-time donation opportunities rather than long-term generosity or people's willingness to give in sustained ways over time. While my focus on a single and immediate opportunity for giving was required for the lab-based experiments, decades of research in *Self-Determination Theory* (Deci & Ryan, 2010; Ryan & Deci, 2000) suggest that people are much more likely to engage in, sustain, and repeat behaviours which are intrinsically enjoyable. Theoretically then, to the extent that giving collaboratively with a peer is an intrinsically enjoyable experience, people may be motivated to continue to give collaboratively in the future. Subsequent research can probe whether people may be more willing to engage in repeat giving over time—such as signing a pledge to donate money to charity or sign up for payroll deductions—if people get to make these decisions collaboratively with a peer rather than on their own.

4.2.2. Collaborative giving and intrinsic enjoyment

One of my most robust findings across studies was that people experienced greater intrinsic enjoyment giving collaboratively with a peer than independently in the presence of a peer. In turn, this greater intrinsic enjoyment boosted people's short-term generosity. These findings fit well with previous work suggesting that working with others leads to greater intrinsic enjoyment and task engagement (e.g., Carr & Walton, 2014) and that greater intrinsic enjoyment leads to greater generosity (e.g., Bidee et al.,

2012; Gorczyca & Hartman, 2017; Hui & Kogan, 2018; Ki & Oh, 2018; Reykowski, 1982).

Of course, in Study 2, the difference I observed between the *collaborative giving* and *independent giving* conditions in my pre-registered pairwise comparison was relatively small. Indeed, it fell within the range of p -values that are typical for a non-existent effect (i.e., $.025 < p < .05$; Simonsohn, Nelson, & Simmons, 2014a, 2014b; Simonsohn, Simmons, & Nelson, 2015). Moreover, the omnibus test did not reach significance. Thus, this replicated effect should be interpreted with caution. Indeed, researchers suggest that an effect is much more likely to be replicable when observed p -values fall below a threshold of .025 (Cumming, 2008; Hung, O’Neil, Bauer, & Kohne, 1997; Simonsohn et al, 2014a, 2014b, 2015).

Furthermore, a critical caveat to these mediational results is that they cannot provide causal evidence of the overall relationship; I only manipulated the independent variable, collaborative giving, and not the mediator, intrinsic enjoyment. Thus, it is critical for future work to use designs such as *experimental causal chain* designs to manipulate collaborative giving and intrinsic enjoyment across studies (e.g., Lemmer & Gollwitzer, 2016; Spencer, Zana, & Fong, 2005). Indeed, these designs are suitable to assess causal impact of each path in my theoretical model while simultaneously assessing the overall reliability of the intrinsic enjoyment effect of collaborative giving.

Theoretically, the intrinsic enjoyment sparked by collaborative giving may motivate people to frequently engage in future acts of collaborative giving. However, it is unclear whether people would still maintain high levels of intrinsic enjoyment over repeated acts of collaborative giving or whether the effect would fade over time. Some research suggests that people are slower to adapt to the warm glow of repeated acts of prosocial spending and charitable giving compared to the happiness benefits of acts of personal spending (O’Brien & Kassirer, 2019). Thus, it is possible that people are similarly slower to habituate to the boost in intrinsic enjoyment from acts of collaborative giving compared to the intrinsic enjoyment from acts of independent giving. Longitudinal experimental work should track the longevity of the intrinsic enjoyment effect for people

who are randomly assigned to engage in either repeated acts of collaborative giving or independent giving.

4.2.3. Collaborative giving and interpersonal closeness

Despite the robust pattern of results suggesting that collaborative giving may facilitate social bonds between peers, there is a clear alternative explanation to these findings. Specifically, simply working together with a peer on *any* shared task (generous or non-generous) could increase feelings of social connection and closeness, particularly for novel or self-expanding tasks (e.g. Carr & Walton, 2014; Shteynberg & Apfelbaum, 2013; Thoman et al., 2012). It is essential to rule out this alternative explanation and explore whether and how collaborative giving might uniquely foster social bonds between peers. Thus, I am conducting a follow-up study investigating the interpersonal impact of collaborative giving against a non-generous collaborative financial task. Specifically, I am randomly assigning pairs of participants to either make a collaborative decision to donate to charity or a non-generous collaborative decision to invest in a business (e.g., Berman, Barasch, Levine, & Small, 2018). Meanwhile, participants' interactions will be surreptitiously recorded using a covert spy camera, enabling me to code participant behaviours, including evidence of shared positive experiences. Afterward, peers will be asked to report their levels of closeness and liking for one another and complete exploratory measures including self-disclosure. This will allow me to investigate whether charitable giving is more effective at fostering relational closeness against a rigorous control condition as well as examine why that might be (e.g., shared positive experiences or self-disclosure; Lauranceau, Barrett & Pietromanaco, 1998; Fredrickson, 1998, 2001).

4.2.4. Ecological and external validity

The present research contains the first two rigorous empirical investigations into the impact of collaborative giving on financial generosity. In each study, I presented participants with advertisements in various forms (i.e., video and print) for a familiar and well-respected charity in a highly controlled lab environment. These experimental design

choices permitted a stringent test of the research question using the various charitable appeals that people encounter in daily life. Overall, however, this design does raise challenges for ecological validity. Relatedly, I used a single charitable organization (i.e., the B.C. Children’s Hospital Foundation) as the target of participants’ generosity. I purposely chose the BCCHF because its broad appeal would likely keep participants engaged in the study. However, it is unclear whether the results I observed would generalize across charities or causes. Future studies should investigate the generalizability of the present results across charitable targets.

Future research would do well to investigate collaborative giving in other contexts where it occurs naturally, such as in online peer-to-peer giving where friends and peers promote and donate to a charitable cause together (Chapman et al., 2019). This form of giving seems to be rapidly becoming the preferred way to give among Millennials (Saxton & Wang, 2014). However, it is unclear whether peer-to-peer giving operates similarly to in-person collaborative giving or influences generosity in similar ways as observed in the present research. Thus, an interesting and critical future direction for this research is to understand whether and how online peer-to-peer giving influences generosity. For example, practitioners such as the Charitable Impact Foundation offer people the opportunity to create “giving groups” through their online giving platform, Charitableimpact.com. Critically, these giving groups enable people to discuss with their friends, family, spouses, and peers in social network style forums how to give pooled resources to charity. Charitable Impact’s online giving platform presents a unique, ecologically valid, and unobtrusive method to observe collaborative giving behaviours. Moreover, the platform can be used to test for differences in people’s generosity when they give collaboratively via giving groups, controlling for donations made independently on the platform.

4.3. Practical Applications

Although there was no direct effect of collaborative giving on generosity, the present research offers practical insights to charities and non-profits who might consider leveraging the potential capacity for collaborative giving to indirectly bolster generosity

through intrinsic enjoyment. To that end, charitable organizations may use appeals that entice new donors to give collaboratively. One way to do so might be craft the appeals to enable donors to experience the intrinsic enjoyment and relational benefits of giving (Gorczyca & Hartman, 2017). For example, charitable appeals which highlight collaborative giving as an inherently fun and interesting way to give may intrigue more people to donate—particularly Millennials, who are sensitive to charitable appeals which promote such ideals (Feldmann et al., 2013; McGlone, Spain, & McGlone, 2011; Stebbins & Hartman, 2013). Indeed, Millennials may be the most amenable to marketing campaigns endorsing collaborative giving given their affinity for novel forms of giving, such as giving online (e.g., Angus Reid Institute & Charitable Impact, 2017). Moreover, given that the declines observed in charitable giving have been particularly prominent among Millennials (Lasby & Barr, 2018; Rooney et al., 2018), marketing collaborative giving to Millennials may be the optimal channel by which collaborative giving can impact the charitable sector. Of course, prior to the launch of any marketing campaigns, additional confirmatory work is needed.

4.4. Conclusion

The present research provides two of the first pre-registered and well-powered tests of collaborative giving. While I did not find evidence that collaborative giving with a peer had any direct impact on generosity, it did cultivate feelings of intrinsic enjoyment which boosted short-term financial generosity. Moreover, collaborative giving may be a unique and effective tool to help unacquainted peers forge social bonds. As the rates of generosity continue to decline in North America, practitioners and scholars alike require novel strategies and insight into how to improve the state of giving in the world. As more and more people begin to share the act of giving with others, it is critical to understand how to leverage the potential joy and social connection that collaborative giving fosters to bring people's behaviours in line with their extraordinary capacity for prosociality.

Chapter 5.

Figures and Tables

Figures

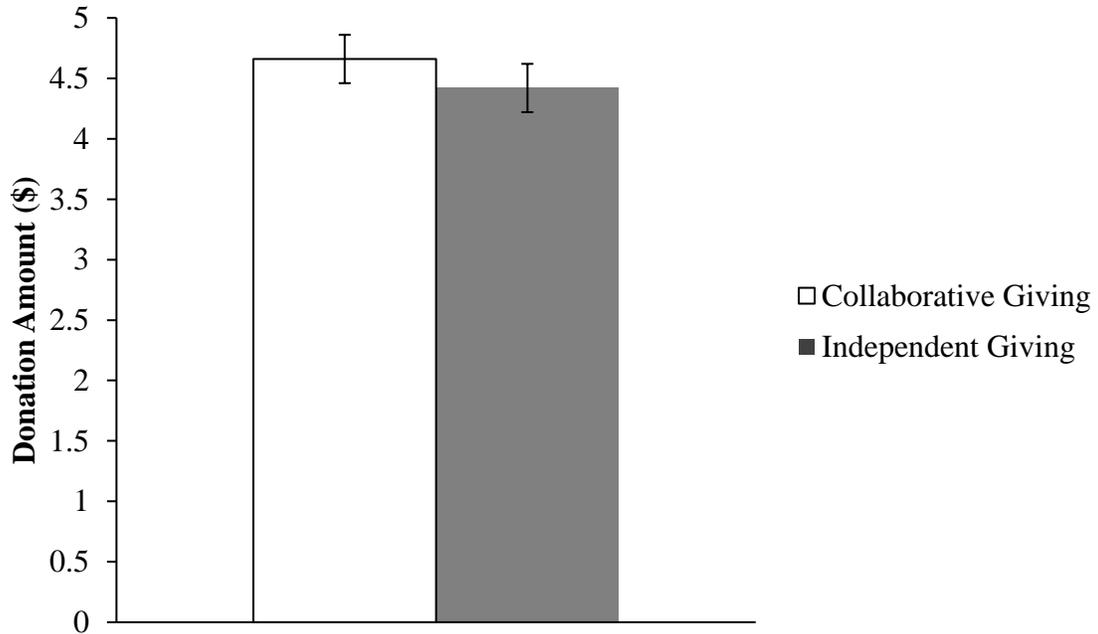


Figure 1. Effect of collaborative giving (vs. independent giving) on generosity (average donation amount) in Study 1.

Note. Error bars represent 95% CIs. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

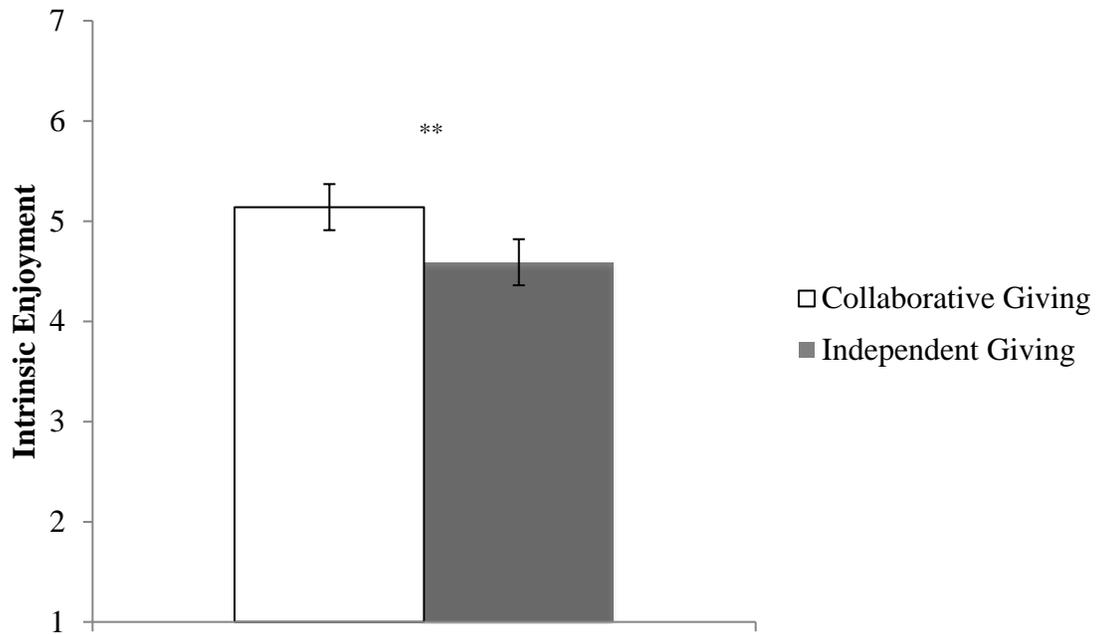


Figure 2. Effect of collaborative giving (vs. independent giving) on intrinsic enjoyment in Study 1.

Note. Error bars represent 95% CIs. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

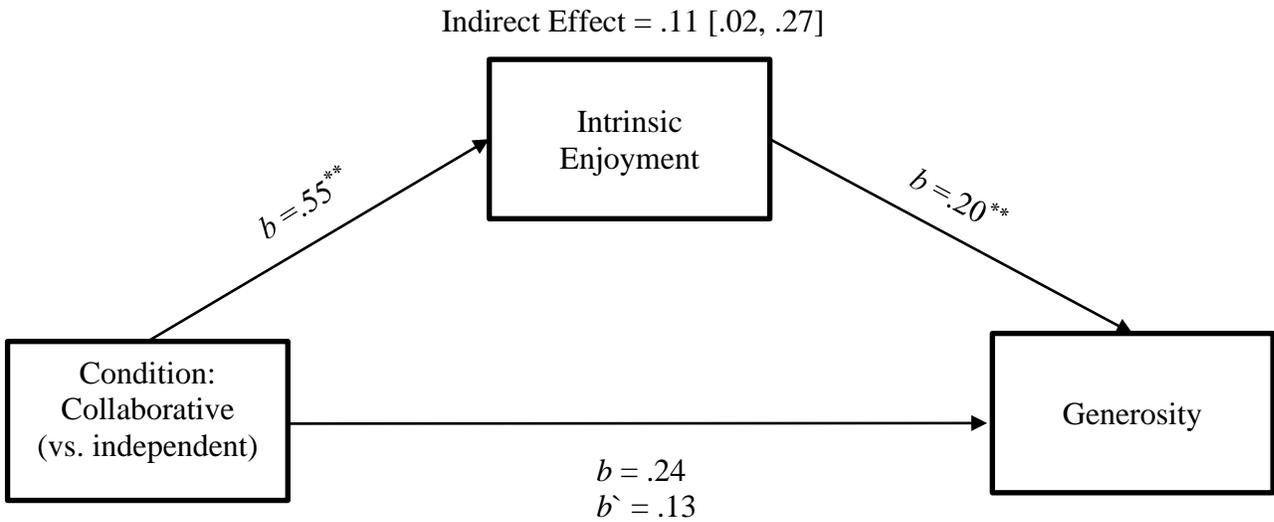


Figure 3. Indirect effect of collaborative giving (vs. independent giving) on generosity through intrinsic enjoyment in Study 1.

Note. All b 's represent unstandardized regression coefficients estimated using Multilevel Modeling (MLM) with Maximum Likelihood estimation. Indirect effect was obtained using *RMediation*. The range in brackets represents the 95% confidence interval of the indirect effect. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

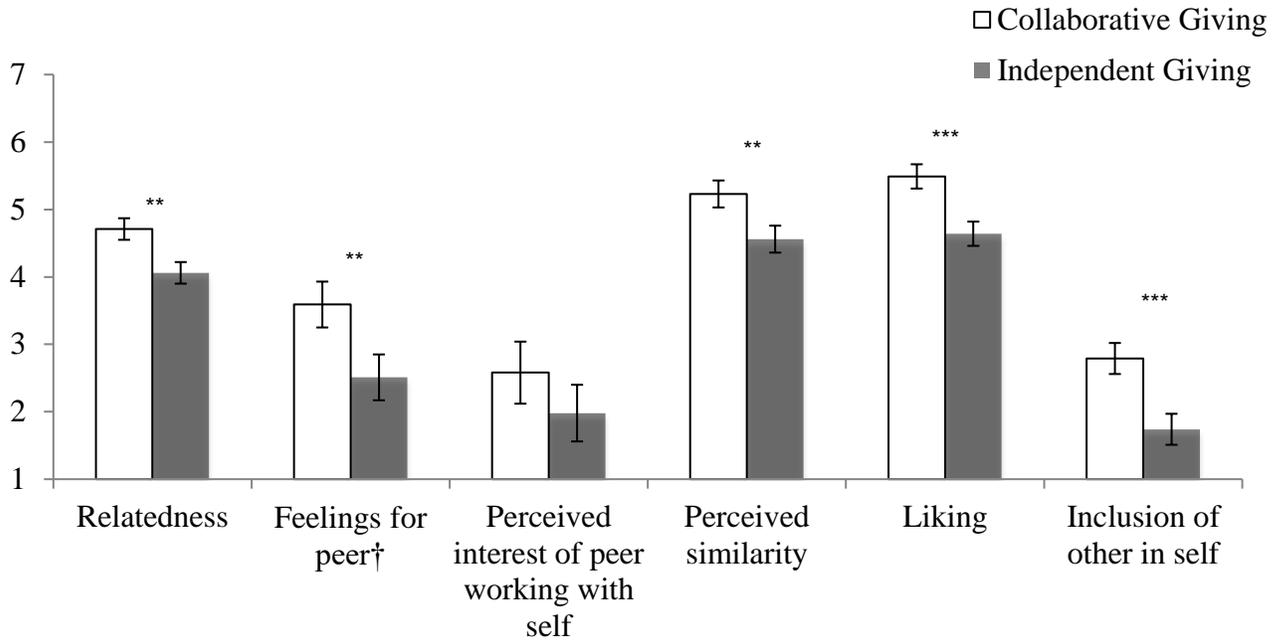


Figure 4. Effect of collaborative giving (vs. independent giving) on interpersonal closeness outcomes in Study 1

Note. Error bars represent 95% CIs. †Rated on a scale from -5 to +5. All other measures were rated on a scale from 1 to 7. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

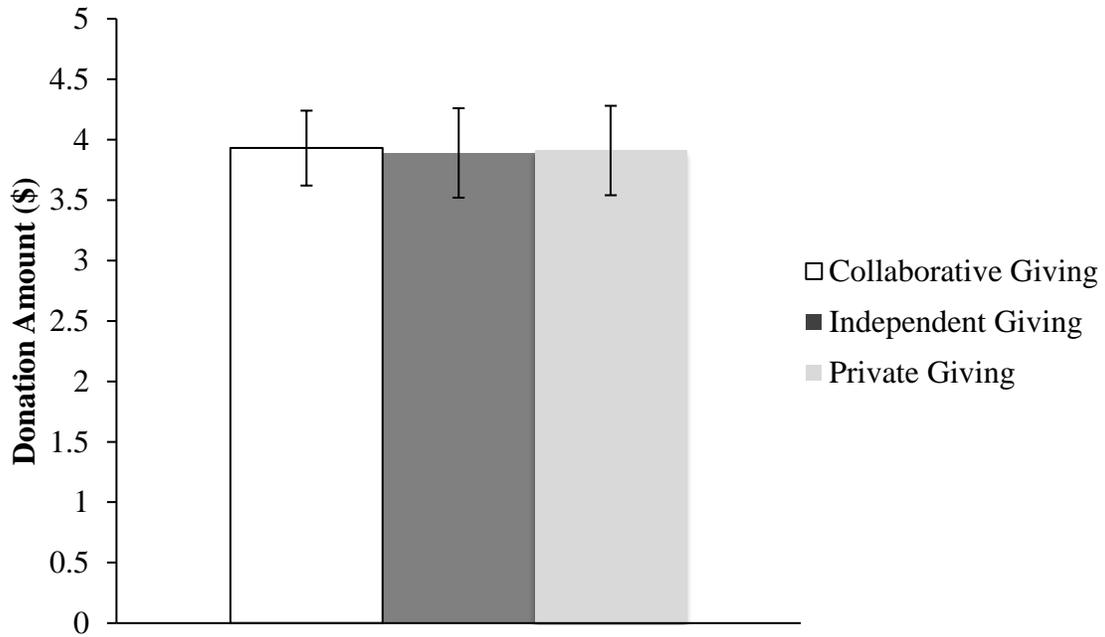


Figure 5. Effect of collaborative giving (vs. independent giving and private giving) on generosity (average donation amount) in Study 2.

Note. Error bars represent 95% CIs. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

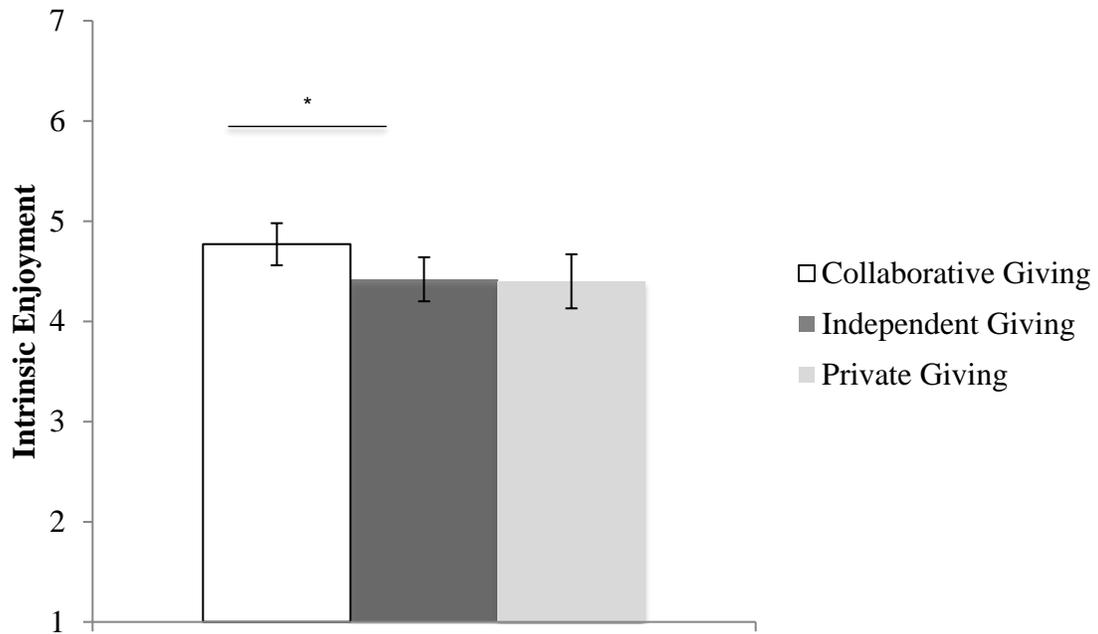


Figure 6. Effect of collaborative giving (vs. independent giving and private giving) on intrinsic enjoyment in Study 2.

Note. Error bars represent 95% CIs. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

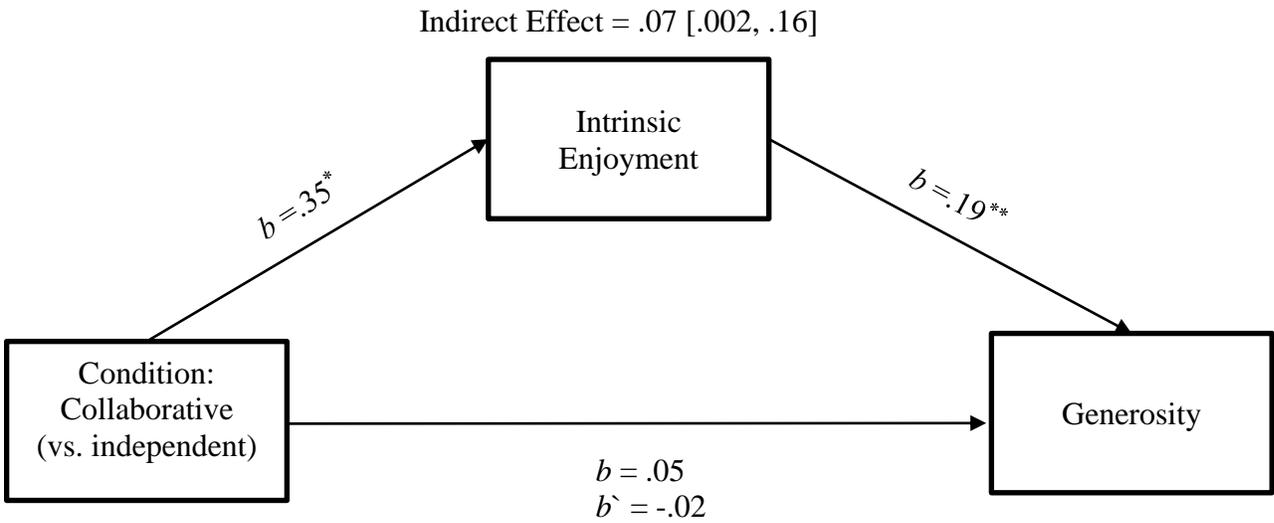


Figure 7. Indirect effect of collaborative giving (vs. independent giving) on generosity through intrinsic enjoyment in Study 2.

Note. All b 's represent unstandardized regression coefficients obtained using Multilevel Modeling (MLM) with Maximum Likelihood estimation. The indirect effect was obtained using *RMediation*. All tests are one tailed as pre-registered. The range in brackets represents the 90% confidence interval of the indirect effect. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

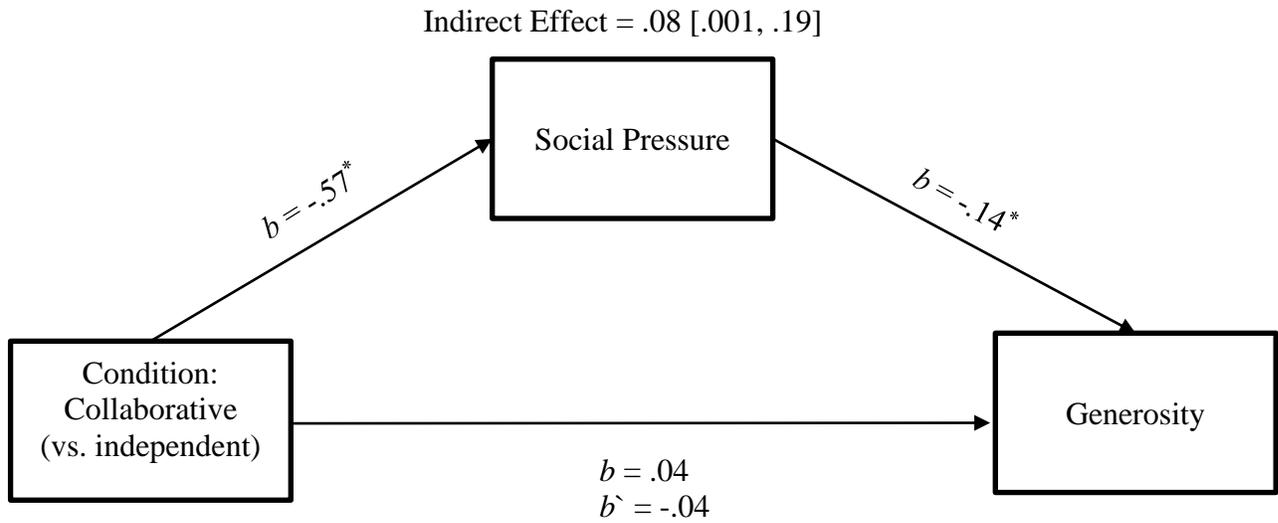


Figure 8. Indirect effect of collaborative giving (vs. independent giving) on generosity through social pressure in Study 2.

Note. All b 's represent unstandardized regression coefficients obtained using Multilevel Modeling (MLM) with Maximum Likelihood estimation. The indirect effect was obtained using *RMediation*. The range in brackets represents the 95% confidence interval of the indirect effect. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

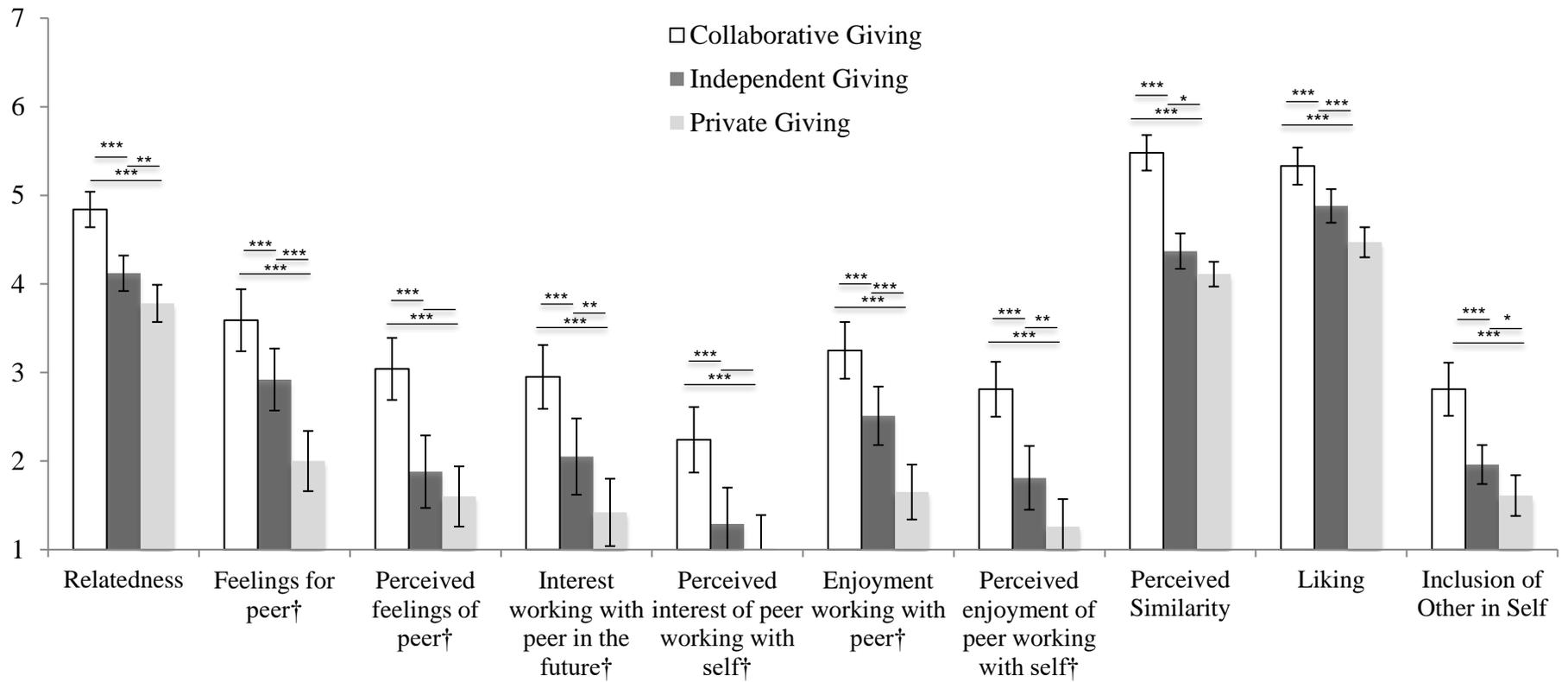


Figure 9. Effect of collaborative giving (vs. independent giving and private giving) on interpersonal closeness outcomes in Study 2.

Note. Error bars represent 95% CIs. †Rated on a scale from -5 to +5. All other measures were rated on a scale from 1 to 7. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

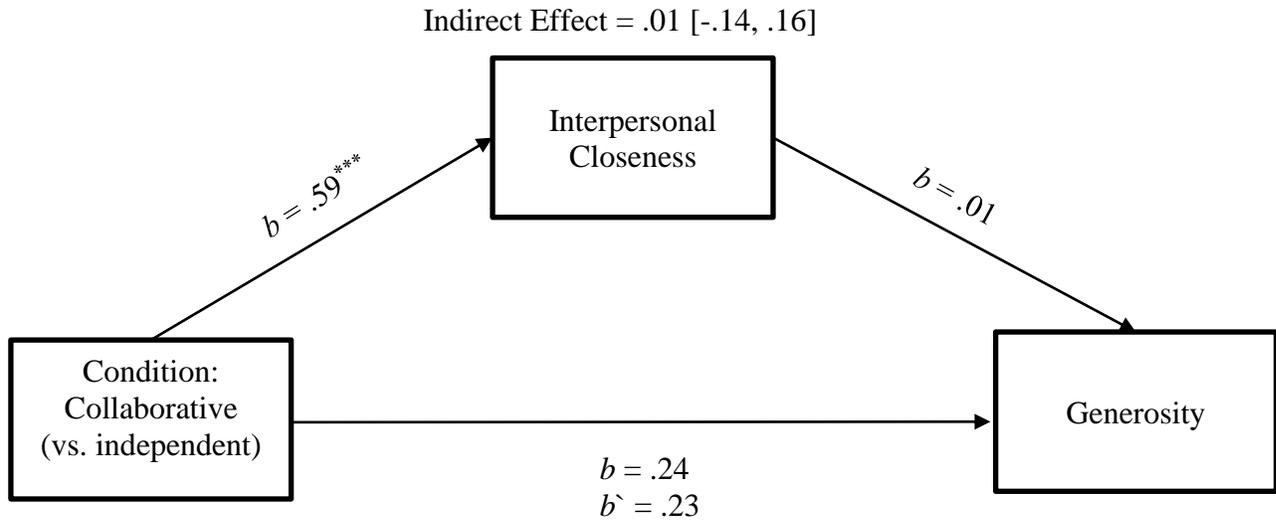


Figure 10. Indirect effect of collaborative giving (vs. independent giving) on generosity through generalized interpersonal closeness in Study 1.

Note. All b 's represent unstandardized regression coefficients obtained using Multilevel Modeling (MLM) with Maximum Likelihood estimation. The indirect effect was obtained using *RMediation*. The range in brackets represents the 95% confidence interval of the indirect effect. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

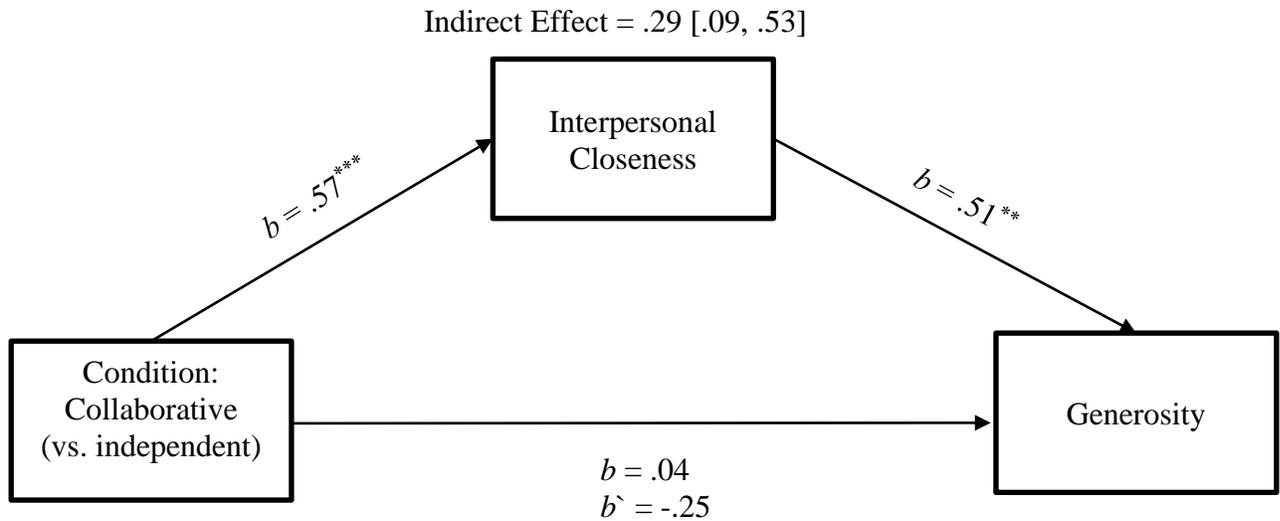


Figure 11. Indirect effect of collaborative giving (vs. independent giving) on generosity through generalized interpersonal closeness in Study 2.

Note. All b 's represent unstandardized regression coefficients obtained using Multilevel Modeling (MLM) with Maximum Likelihood estimation. The indirect effect was obtained using *RMediation*. The range in brackets represents the 95% confidence interval of the indirect effect. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

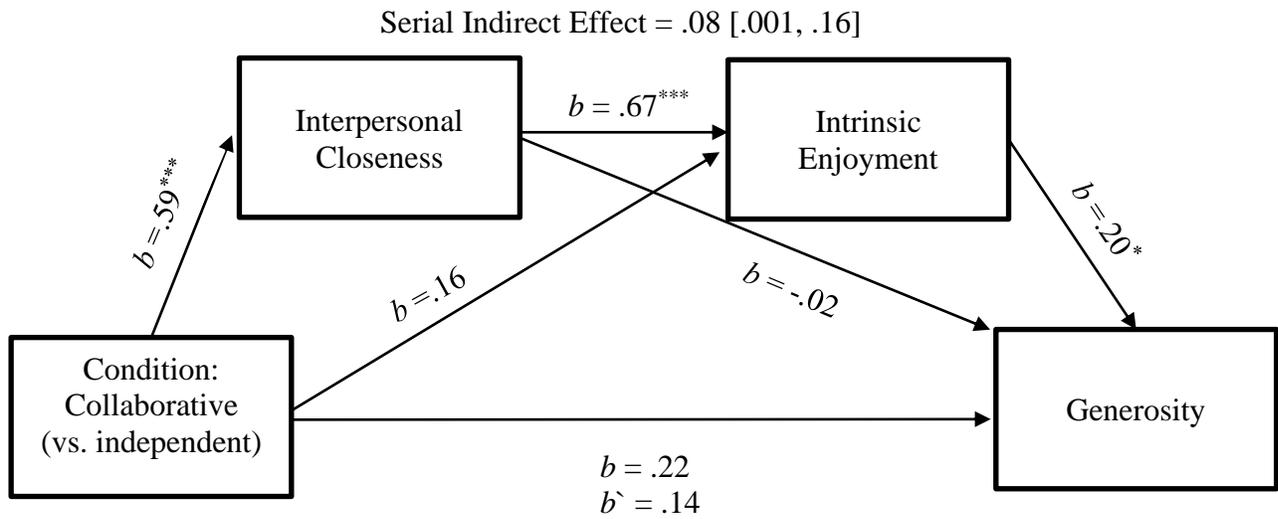


Figure 12. Serial indirect effect of collaborative giving (vs. independent giving) on generosity through generalized interpersonal closeness and intrinsic enjoyment in Study 1.

Note. All b 's represent unstandardized regression coefficients obtained using multilevel mediation in the *R* package *lavaan* (0.6-6). The range in brackets represents the 95% confidence interval of the serial indirect effect. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

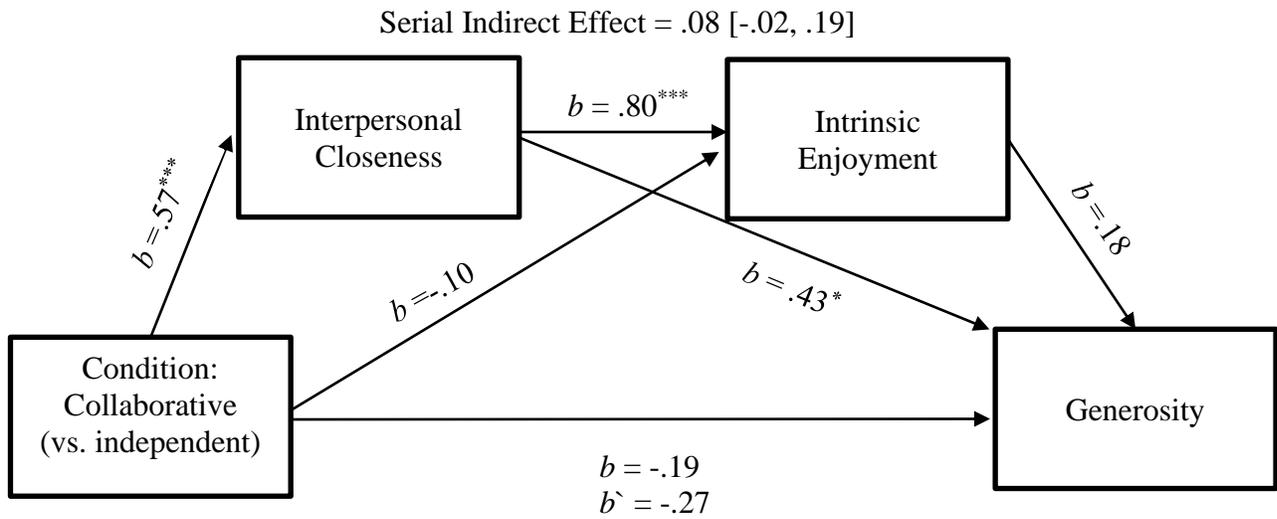


Figure 13. Serial indirect effect of collaborative giving (vs. independent giving) on generosity through generalized interpersonal closeness and intrinsic enjoyment in Study 2.

Note. All b 's represent unstandardized regression coefficients obtained using multilevel mediation in the *R* package *lavaan* (0.6-6). The range in brackets represents the 95% confidence interval of the serial indirect effect. * $p < .05$; ** $p < .01$; *** $p < .001$; otherwise, $p > .05$.

Tables

Table 1. Summary of participant and dyad demographics (Study 1).

	Participants (N = 202)	
Race/Ethnicity	<i>N</i>	%
First Nation/Native American	0	0.0%
African American/Black	6	3.0%
Hispanic	3	1.5%
Caucasian/White	64	31.7%
Asian	99	49.0%
Middle Eastern	9	4.5%
Multi-racial	11	5.4%
Other	8	4.0%
Prefer not to answer	2	1.0%
Gender	<i>N</i>	%
Male	57	28.2%
Female	144	71.3%
Non-Binary	0	0.0%
Other	0	0.0%
Prefer not to answer	1	0.5%
	<i>M (SD)</i>	<i>Mdn (Range)</i>
Age	19.18 (1.88)	19.00 (17–29)
Familial Social Class	<i>N</i>	%
Working class	7	3.5%
Lower-middle class	20	9.9%
Middle class	106	52.5%
Upper-middle class	52	25.7%
Upper class	5	2.5%
Prefer not to answer	12	5.9%

Participants (N = 202)		
Familial Annual Pre-tax Household Income	<i>N</i>	%
Less than \$10,000	0	0.0%
\$10,000 - \$19,999	5	2.5%
\$20,000 - \$29,999	5	2.5%
\$30,000 - \$39,999	4	2.0%
\$40,000 - \$49,999	6	3.0%
\$50,000 - \$59,999	6	3.0%
\$60,000 - \$69,999	10	5.0%
\$70,000 - \$79,999	17	8.4%
\$80,000 - \$89,999	14	6.9%
\$90,000 - \$99,999	20	9.9%
\$100,000 - \$149,999	16	7.9%
More than \$150,000	20	9.9%
Prefer not to answer	77	38.1%
Missing Data	2	1.0%
Parents' highest education level obtained	<i>N</i>	%
Some highschool	9	4.5%
Highschool diploma	29	14.4%
Some college	24	11.9%
College degree	73	36.1%
Master's degree (M.S., M.A.)	38	18.8%
Professional degree (e.g., J.D., M.B.A)	7	3.5%
Ph.D/M.D.	8	4.0%
Prefer not to answer	13	6.4%
Missing Data	1	0.5%

Dyads (N=101)		
Race/Ethnicity	<i>N</i>	%
Mixed-Race/Ethnicity	62	61.4%
Same-Race/Ethnicity	39	38.6%
Gender	<i>N</i>	%
Mixed-Gender	32	31.7%
Same Gender	69	68.3%
<i>(Female–Female)</i>	<i>(56)</i>	<i>(81.2%)</i>
<i>(Male–Male)</i>	<i>(13)</i>	<i>(18.8%)</i>
Participant Relation	<i>N</i>	%
Strangers	97	96.0%
Friends	3	3.0%
Romantic Partners	1	1.0%

Table 2. Pre-registered and exploratory measures (Study 1).

Pre-registered Outcome					
Measure	Source	Cronbach's α	N of items	Item	Response Options
Generosity	Face Valid	-	1	I have decided to donate _____ to charity	\$0 \$1 \$2 \$3 \$4 \$5
Manipulation Check					
Measure	Source	Cronbach's α	N of items	Item	Response Options
Time spent discussing donation decision with study partner	Face Valid	-	1	When evaluating the advertisement and making your financial decision, how much of the time did you spend taking to the other participant?	0-None of the time 1-A bit of the time 2-Some of the time 3-Most of the time 4-The whole time
Exploratory Mediators					
Measure	Source	Cronbach's α	N of items	Sample item(s)	Response Options
Intrinsic Enjoyment	Intrinsic Motivation Inventory (IMI); Ryan, 1982	.77	5	Our financial decision was fun to make.*	1-Not at all true 4-Somewhat true 7-Very true
Perceived Prosocial Impact	Perceived Prosocial Impact Scale; Grant et al., 2007	.96	5	Our actions will make a significant difference in people's lives.*	1-Not at all 7-Very much
Social Pressure	Intrinsic Motivation Inventory (IMI) Ryan, 1982	.84	4	I felt pressured while we were making our financial decision.*	1-Not at all true 4-Somewhat true 7-Very true

Interpersonal Outcomes [Exploratory]					
Measure	Source	Cronbach's α	N of items	Sample item(s)	Response Options
Feelings toward study partner	Face valid	-	1	Right now, how positive or negative do you feel towards your study partner? *	-5: Very negative +5: Very positive
Perceived interest of peer working with self	Face valid	-	1	How interested do you think your study partner was to complete the study with you today? *	-5: Very uninterested +5: Very interested
Relatedness	Intrinsic Motivation Inventory (IMI) Ryan, 1982	.72	4	I feel close to my study partner. *	1-Not at all true 4-Somewhat true 7-Very true
Perceived similarity	Turban & Jones, 1988	.88	2	My study partner and I see things in the same way. *	1-Strongly Disagree 7-Strongly Agree
Liking	Wayne & Ferris, 1990	.91	2	I like my study partner very much as a person. *	
Inclusion of other in self	Inclusion of Other in Self Scale; Aron, Aron, & Smollan, 1992	-	1	Circle the picture which best depicts your current relationship with your study partner.	1-No overlap in self/other circles 7-Complete overlap in self/other circles
Exploratory Emotional Outcomes					
Measure	Source	Cronbach's α : BL; PD	N of items	Sample item(s)	Response Options
Positive Affect	Positive Affect Negative Affect Scale (PANAS); Watson et. al, 1998; Additional item, "Happy"	.89; .93	11	Indicate how you are feeling right now with respect to each of these words... ...Interested ...Excited ...Proud	1-Very slightly or not at all 2-A little 3-Moderately 4-Quite a bit 5-Extremely

Note: *The framing for these items reflect the description that participants in the *collaborative giving* saw; those in the *independent giving* condition received a slightly adapted framing to match the individual nature (e.g., My vs Our; I vs. We; The other participant vs Study Partner). BL: Baseline. PD: Post-donation. For additional exploratory measures, see Table A1 in Appendix A.

Table 3. Summary of analyses (Study 1).

Measure	Independent Giving <i>M (SD)</i> ; N=100	Collaborative Giving <i>M (SD)</i> ; N=102	$F_{\text{Condition}}$	<i>p</i>	η_p^2 [90%CI]
Manipulation Check	.17 (.43)	2.02 (1.12)	$F(1,99) = 226.30$	< .001	.70 [.61, .75]
Generosity	4.42 (1.41)	4.66 (.95)	$F(1,99) = 1.50$	.223	.02 [.00, .08]
Intrinsic Enjoyment	4.59 (1.26)	5.14 (1.15)	$F(1,99) = 9.86$	.002	.09 [.02, .19]
Perceived Prosocial Impact	4.45 (1.58)	4.64 (1.59)	$F(1,99) = .71$	.401	.01 [.00, .06]
Social Pressure	2.39 (1.49)	2.10 (1.28)	$F(1,99) = 2.03$	.157	.02 [.00, .09]
Feelings toward study partner	2.51 (2.26)	3.59 (1.83)	$F(1,99) = 10.66$	.002	.10 [.02, .19]
Perceived interest of peer working with self	1.98 (2.14)	2.58 (2.07)	$F(1,99) = 3.56$	.062	.04 [.00, .11]
Relatedness	4.06 (1.04)	4.71 (1.13)	$F(1,99) = 12.93$	.001	.12 [.03, .22]
Perceived similarity	4.56 (1.14)	5.23 (1.35)	$F(1,99) = 10.93$	.001	.10 [.02, .20]
Liking	4.64 (1.05)	5.49 (1.06)	$F(1,99) = 25.34$	<.001	.20 [.10, .31]
Inclusion of other in self	1.74 (.95)	2.79 (1.65)	$F(1,99) = 24.11$	<.001	.20 [.09, .30]
Post-donation Positive Affect [†]	2.87 (1.00)	2.86 (.89)	$F(1,99) = .02$	.887	.00 [.00, .02]

Note: [†] Controls for relevant baseline affect and generosity.

Table 4. Summary of participant and dyad demographics (Study 2).

Participants (<i>N</i> = 310)		
Race/Ethnicity	<i>N</i>	%
First Nation/Native American	2	0.6%
African American/Black	5	1.6%
Hispanic	3	1.0%
Caucasian/White	101	32.6%
Asian	124	40.0%
Middle Eastern	18	5.8%
Multi-racial	20	6.5%
Other [†]	36	11.6%
Prefer not to answer	1	0.3%
Gender	<i>N</i>	%
Male	81	26.1%
Female	228	73.5%
Non-Binary	0	0.0%
Other	1	0.3%
Prefer not to answer	0	0.0%
	<i>M (SD)</i>	<i>Mdn (Range)</i>
Age	19.31 (2.56)	19.00 (17 – 41)
Dyads (<i>N</i> = 155)		
Race/Ethnicity	<i>N</i>	%
Mixed-Race/Ethnicity	103	66.5%
Same-Race/Ethnicity	52	33.5%

Dyads (<i>N</i> = 155)		
Gender	<i>N</i>	%
Mixed-Gender	63	40.6%
Same Gender	92	59.4%
<i>(Female–Female)</i>	<i>(83)</i>	<i>(90.2%)</i>
<i>(Male–Male)</i>	<i>(9)</i>	<i>(9.8%)</i>
Participant Relation	<i>N</i>	%
Strangers/Acquaintances	148	95.5%
Friends	7	4.5%
Romantic Partners	0	0.0%

Note. † A substantial number of participants who responded “Other” for their race/ethnicity indicated “South Asian,” “Indian,” or “Punjabi” (*n* = 27). For the dyad demographics, these participants were re-categorized into the broader category “Asian” to assess mixed- or same-race/ethnicity dyads.

Table 5. Pre-registered and exploratory Measures (Study 2).

Pre-registered Outcome and Mediator					
Measure	Source	Cronbach's α	N of items	Sample Item	Response Options
Generosity [Outcome]	Behavioural	-	-	-	\$0 – \$5 [†] \$5 payment = [1 × \$2 coin, 2 × \$1 coins, 4 × \$0.25 coins]
Intrinsic Enjoyment [Mediator]	Intrinsic Motivation Inventory (IMI) Ryan, 1982 [Adapted]	.79	4	Our donation decision was fun to make.*	1-Not at all true 4-Somewhat true 7-Very true
Manipulation Check					
Measure	Source	Cronbach's α	N of items	Item	Response Options
Time spent discussing donation decision with study partner	Face Valid	-	1	When evaluating the advertisement and making your donation decision, how much of the time did you spend taking to the other participant?	0-None of the time 1-A bit of the time 2-Some of the time 3-Most of the time 4-The whole time
Exploratory Mediators					
Measure	Source	Cronbach's α	N of items	Sample item(s)	Response Options
Perceived Prosocial Impact	Perceived Prosocial Impact Scale; Grant et al., 2007 [Adapted]	.97	5	Our actions will make a difference in people's lives.*	1-Not at all 7-Very much
Social Pressure	Intrinsic Motivation Inventory (IMI) Ryan, 1982 [Adapted]	-	1	I felt pressured while we were making our donation decision.*	1-Not at all true 4-Somewhat true 7-Very true

Interpersonal Outcomes [Exploratory]					
Measure	Source	Cronbach's α	N of items	Sample item(s)	Response Options
Feelings for peer	Face valid	-	1	Right now, how positive or negative do you feel towards the other participant?	-5: Very negative +5: Very positive
Perceived feelings of peer	Face valid	-	1	Right now, how positive or negative do you think the other participant feels towards you?	
Interest working with peer in the future	Face valid	-	1	How interested are you in working with the other participant again in the future?	-5: Very uninterested +5: Very interested
Perceived interest of peer working with self in the future	Face valid	-	1	How interested do you think the other participant is in working with you again in the future?	
Enjoyment working with peer	Face valid	-	1	How much did you enjoy working with the other participant today?	-5: Not at all +5: Very much
Perceived enjoyment of peer working with self	Face valid	-	1	How much did you think the other participant enjoyed working with you today?	
Relatedness	Intrinsic Motivation Inventory (IMI) Ryan, 1982	.71	3 ^{††}	I feel close to the other participant.	1-Not at all true 4-Somewhat true 7-Very true
Perceived similarity	Turban & Jones, 1988	.91	2	The other participant and I see things in the same way.	1-Strongly Disagree 7-Strongly Agree
Liking	Wayne & Ferris, 1990	.90	2	I like the other participant very much as a person.	
Inclusion of other in self	Inclusion of Other in Self Scale; Aron, Aron, & Smollan, 1992	-	1	Circle the picture which best depicts your current relationship with the other participant.	1-No overlap in self/other circles 7-Complete overlap in self/other circles

Emotional Outcomes [Exploratory]					
Measure	Source	Cronbach's α	N of items	Sample item(s)	Response Options
Positive Affect/Emotion	Positive Affect Negative Affect Scale (PANAS); Watson et. al, 1998; Additional item, "Happy"	.91	11	Indicate how you were feeling when making your donation decision with the other participant* with respect to each of these words...	1-Very slightly or not at all 2-A little 3-Moderately 4-Quite a bit 5-Extremely
	Scale of Positive and Negative Experience (SPANE); Diener et al., 2009	.93	6	...Interested {PANAS} ...Good {SPANE}	

Note: *The framing for these items reflect the description that participants in the *collaborative giving* saw; those in the *independent giving* condition received a slightly adapted framing to match the individual nature (e.g., My vs Our; I vs. We). † Some participants elected to donate using their own personal money, increase the range to \$10; some participants donated smaller denominations (e.g., \$0.10, \$0.05). †† A fourth item was included in the relatedness scale, "I'd really prefer not to interact with the other participant in the future." However, including this item decreased scale reliability to an unacceptable level ($\alpha = .66$). Therefore, to improve scale reliability, this item was deleted from the composite used in all analyses. For all other exploratory outcomes included in the study, please see Appendix A.

Table 6. Summary of analyses (Study 2).

Measure	Collaborative Giving [N=102] <i>M (SD)</i>	Independent Giving [N=104] <i>M (SD)</i>	Private Giving [N=104] <i>M (SD)</i>	Omnibus $F_{\text{Condition}^\dagger}$	p	η_p^2 [90%CI]
Manipulation Check	2.65 (1.25)	.64 (.88)	.05 (.26)	$F(2, 151) = 193.17$	< .001	.72 [.66, .76]
Generosity	3.93^{a,b} (1.59)	3.89^{a,c} (1.93)	3.90 ^{b,c} (1.92)	$F(2, 152) = .01$	.988	.00 [.00, .00]
Intrinsic Enjoyment	4.77^b (1.30)	4.42^c (1.38)	4.40 ^{b,c} (1.42)	$F(2, 151) = 2.51$	.085	.03 [.00, .08]
Perceived Prosocial Impact	4.87 ^{a,b} (1.67)	4.47 ^{a,c} (1.67)	4.63 ^{b,c} (1.70)	$F(2, 151) = 1.47$	.233	.02 [.00, .06]
Social Pressure	2.35 ^b (1.66)	2.92 (2.12)	2.38 ^b (1.86)	$F(2, 151) = 3.06$	.050	.04 [.00, .09]
Feelings for peer	3.59 (1.79)	2.92 (1.82)	2.00 (1.75)	$F(2, 157.14) = 16.17$	<.001	.17 [.08, .25]
Perceived feelings of peer	3.04 (1.78)	1.88^c (2.15)	1.60 ^c (1.75)	$F(2, 156.88) = 14.08$	<.001	.15 [.07, .23]
Interest working with peer in the future	2.95 (1.86)	2.05 (2.23)	1.42 (1.98)	$F(2, 154.82) = 10.51$	<.001	.12 [.05, .20]
Perceived interest of peer working with self in the future	2.24 (1.89)	1.29^c (2.13)	1.01 ^c (1.97)	$F(2, 157.95) = 8.45$	<.001	.10 [.03, .17]
Enjoyment working with peer	3.25 (1.63)	2.51 (1.72)	1.65 (1.63)	$F(2, 155.50) = 16.67$	<.001	.18 [.09, .26]

Measure	Collaborative Giving [N=102] <i>M (SD)</i>	Independent Giving [N=104] <i>M (SD)</i>	Private Giving [N=104] <i>M (SD)</i>	Omnibus $F_{\text{Condition}}^{\dagger}$	p	η_p^2 [90%CI]
Perceived enjoyment of peer working with self	2.81 (1.60)	1.81 (1.89)	1.26 (1.61)	$F(2, 155.81) = 16.06$	<.001	.17 [.08, .25]
Relatedness	4.84 (1.04)	4.12 (1.06)	3.78 (1.07)	$F(2, 151.83) = 20.17$	<.001	.21 [.12, .29]
Perceived similarity	5.48 (1.02)	4.37 (1.02)	4.11 (.74)	$F(2, 151.54) = 40.99$	<.001	.35 [.25, .43]
Liking	5.33 (1.10)	4.88 (1.01)	4.47 (.87)	$F(2, 151.45) = 14.01$	<.001	.16 [.07, .24]
Inclusion of other in self	2.81 (1.55)	1.96 (1.12)	1.61 (1.22)	$F(2, 151) = 17.94$	<.001	.19 [.10, .28]
Positive Affect ^{††} (PANAS)	2.92^{a,b} (.97)	2.80^{a,c} (.93)	2.92 ^{b,c} (.93)	$F(2, 150.17) = .21$	.814	.00 [.00, .02]
Positive Emotion ^{††} (SPANE)	19.86^{a,b} (5.95)	19.68^{a,c} (5.89)	20.07 ^{b,c} (6.67)	$F(2, 149.98) = .04$	.962	.00 [.00, .00]

Notes. ^{a-c} Means which share a common superscript do not differ ($p > .05$). Pairwise comparisons between bolded means were pre-registered to be directional (one-tailed); all other comparisons are non-directional (two-tailed). [†] Degrees of freedom were approximated using the Satterthwaite approach. ^{††}Analyses control for baseline happiness.

Table 7. Exploratory mediation models with intrinsic enjoyment as a mediator while controlling for interpersonal closeness outcomes (Study 1).

Mediator	Path a	Path b	Indirect effect (ab) [95%CI]	Direct Effect (c')	Total Effect (c) [†]
Generalized Interpersonal Closeness [Composite]	.16 (<i>p</i> = .353)	.22 (<i>p</i> = .002)	.03 [-.04, .12]	.20 (<i>p</i> = .324)	.23
Feelings toward study partner	.32 (<i>p</i> = .050)	.19 (<i>p</i> = .007)	.06 [-.00, .15]	.13 (<i>p</i> = .674)	.19
Relatedness	.31 (<i>p</i> = .065)	.22 (<i>p</i> = .001)	.07 [-.00, .17]	.19 (<i>p</i> = .329)	.26
Perceived similarity	.34 (<i>p</i> = .042)	.18 (<i>p</i> = .011)	.06 [.00, .15]	.11 (<i>p</i> = .574)	.17
Liking	.25 (<i>p</i> = .157)	.24 (<i>p</i> = .001)	.06 [-.02, .16]	.27 (<i>p</i> = .180)	.33
Inclusion of other in self	.39 (<i>p</i> = .037)	.19 (<i>p</i> = .006)	.08 [.00, .17]	.11 (<i>p</i> = .582)	.19

Note. Condition: *independent giving* = 0; *collaborative giving* = 1. Path a: Condition to mediator. Path b: Mediator to Generosity. [†] Due to the multilevel nature of the data, the total effect is approximately $ab + c'$ (Kenny, 2018). All tests are two-tailed. *P*-values smaller than .05 are bolded. Participants' perceptions of their peer's interpersonal feelings and attitudes were not included in the composite and thus are not reported individually here.

Table 8. Exploratory mediation models with intrinsic enjoyment as a mediator while controlling for interpersonal closeness outcomes (Study 2).

Mediator	Path a	Path b	Indirect effect (ab) [95%CI]	Direct Effect (c [`])	Total Effect (c) [†]
Generalized Interpersonal Closeness [Composite]	-.10 (<i>p</i> = .579)	.13 (<i>p</i> = .103)	-.01 [-.08, .04]	-.24 (<i>p</i> = .784)	-.25
Feelings toward study partner	.15 (<i>p</i> = .420)	.16 (<i>p</i> = .051)	.02 [-.04, .10]	-.11 (<i>p</i> = .705)	-.09
Relatedness	.07 (<i>p</i> = .717)	.17 (<i>p</i> = .034)	.01 [-.06, .09]	-.14 (<i>p</i> = .644)	-.13
Perceived similarity	-.18 (<i>p</i> = .345)	.09 (<i>p</i> = .250)	-.02 [-.09, .03]	-.35 (<i>p</i> = .274)	-.37
Liking	.20 (<i>p</i> = .283)	.17 (<i>p</i> = .033)	.03 [-.03, .12]	-.10 (<i>p</i> = .738)	-.07
Inclusion of other in self	.14 (<i>p</i> = .458)	.18 (<i>p</i> = .024)	.03 [-.05, .11]	-.07 (<i>p</i> = .827)	-.04

Note. Condition: *independent giving* = 0; *collaborative giving* = 1. Path a: Condition to mediator. Path b: Mediator to Generosity. [†] Due to the multilevel nature of the data, the total effect is approximately $ab + c^`$ (Kenny, 2018). All tests are two-tailed. *P*-values smaller than .05 are bolded. Participants' perceptions of their peer's interpersonal feelings and attitudes were not included in the composite and thus are not reported individually here.

Table 9. Exploratory mediation models with interpersonal closeness outcomes as mediators (Study 1).

Control Variable	Path a	Path b	Indirect effect (ab) [95%CI]	Direct Effect (c [`])	Total Effect (c) [†]
Generalized Interpersonal Closeness [Composite]	.59 (<i>p</i> < .001)	.01 (<i>p</i> = .911)	.01 [-.14, .16]	.23 (<i>p</i> = .266)	.24
Feelings toward study partner	1.08 (<i>p</i> = .001)	.04 (<i>p</i> = .292)	.04 [-.04, .15]	.19 (<i>p</i> = .327)	.23
Relatedness	.65 (<i>p</i> < .001)	-.04 (<i>p</i> = .642)	-.02 [-.14, .08]	.26 (<i>p</i> = .194)	.24
Perceived similarity	.67 (<i>p</i> = .001)	.10 (<i>p</i> = .126)	.07 [-.02, .18]	.17 (<i>p</i> = .385)	.24
Liking	.85 (<i>p</i> < .001)	-.01 (<i>p</i> = .175)	-.09 [-.24, .04]	.33 (<i>p</i> = .111)	.24
Inclusion of other in self	1.05 (<i>p</i> < .001)	.05 (<i>p</i> = .395)	.05 [-.07, .20]	.18 (<i>p</i> = .368)	.23

Note. Condition: *independent giving* = 0; *collaborative giving* = 1. Path a: Condition to mediator. Path b: Mediator to Generosity. [†] Due to the multilevel nature of the data, the total effect is approximately $ab + c^`$ (Kenny, 2018). All tests are two-tailed. *P*-values smaller than .05 are bolded. Participants' perceptions of their peer's interpersonal feelings and attitudes were not included in the composite and thus are not reported individually here.

Table 10. Exploratory mediation models with interpersonal closeness outcomes as mediators (Study 2).

Control Variable	Path a	Path b	Indirect effect (ab) [95%CI]	Direct Effect (c [`])	Total Effect (c) [†]
Generalized Interpersonal Closeness [Composite]	.57 (<i>p</i> < .001)	.51 (<i>p</i> = .003)	.29 [.09, .53]	-.25 (<i>p</i> = .430)	.04
Feelings toward study partner	.70 (<i>p</i> = .021)	.10 (<i>p</i> = .112)	.07 [-.02, .20]	-.09 (<i>p</i> = .773)	-.02
Relatedness	.90 (<i>p</i> < .001)	.18 (<i>p</i> = .052)	.16 [-.00, .36]	-.12 (<i>p</i> = .705)	.04
Perceived similarity	1.11 (<i>p</i> < .001)	.37 (<i>p</i> < .001)	.41 [.19, .67]	-.37 (<i>p</i> = .256)	.04
Liking	.44 (<i>p</i> = .009)	.23 (<i>p</i> = .032)	.10 [.003, .25]	-.06 (<i>p</i> = .847)	.04
Inclusion of other in self	.85 (<i>p</i> < .001)	.09 (<i>p</i> = .243)	.08 [-.05, .23]	-.04 (<i>p</i> = .906)	.04

Note. Condition: *independent giving* = 0; *collaborative giving* = 1. Path a: Condition to mediator. Path b: Mediator to Generosity. [†] Due to the multilevel nature of the data, the total effect is approximately $ab + c^`$ (Kenny, 2018). All tests are two-tailed. *P*-values smaller than .05 are bolded. Participants' perceptions of their peer's interpersonal feelings and attitudes were not included in the composite and thus are not reported individually here.

References

- Agerström, J., Carlsson, R., Nicklasson, L., Guntell, L., Linnéuniversitetet, Institutionen för psykologi (PSY), & Fakulteten för Hälso- och livsvetenskap (FHL). (2016). Using descriptive social norms to increase charitable giving: The power of local norms. *Journal of Economic Psychology*, 52, 147-153.
doi:10.1016/j.joep.2015.12.007
- Aknin, L. B., Barrington-Leigh, C. P., Dunn, E. W., Helliwell, J. F., Burns, J., Biswas-Diener, R., . . . Norton, M. (2013). Prosocial spending and well-being: Cross-cultural evidence for a psychological universal. *Journal of Personality and Social Psychology*, 104(4), 635-652.
- Aknin, L. B., Dunn, E. W., Proulx, J., Lok, I., & Norton, M. I. (2020). Does spending money on others promote happiness?: A registered replication report. *Journal of Personality and Social Psychology*. *Advanced online publication*.
doi:10.1037/pspa0000191
- Aknin, L. B., Dunn, E. W., Sandstrom, G. M., & Norton, M. I. (2013). Does social connection turn good deeds into good feelings? On the value of putting the ‘social’ in prosocial spending. *International Journal of Happiness and Development*, 1(2), 155–171. <http://dx.doi.org/10.1504/ijhd.2013.055643>.
- Aknin, L. B., Dunn, E. W., Whillans, A. V., Grant, A. M., & Norton, M. I. (2013). Making a difference matters: Impact unlocks the emotional benefits of prosocial spending. *Journal of Economic Behavior and Organization*, 88, 90-95.
doi:10.1016/j.jebo.2013.01.008.
- Aknin, L. B., Mayraz, G., & Helliwell, J. F. (2017). The emotional consequences of donation opportunities. *The Journal of Positive Psychology*, 12(2), 169-177.
doi:10.1080/17439760.2016.1163409
- Aknin, L. B., Van de Vondervoort, Julia W, & Hamlin, J. K. (2018). Positive feelings reward and promote prosocial behavior. *Current Opinion in Psychology*, 20, 55-59. doi:10.1016/j.copsyc.2017.08.017
- Aknin, L., Whillans, A. V., Norton, M. I. & Dunn, E. W. (2019). Happiness and prosocial behavior: An evaluation of the evidence. In J. Helliwell, R. Layard & J. Sachs Eds. *World Happiness Report 2019*, New York: Sustainable Development Solutions Network.
- Allen, S. (2018). *The science of generosity* [White Paper]. Retrieved from the Greater Good Science Center at UC Berkeley:
https://ggsc.berkeley.edu/images/uploads/GGSC-JTF_White_Paper-Generosity-FINAL.pdf

- Altman, I., & Taylor, D. A. (1973). *Social penetration: The development of interpersonal relationships*. New York: Holt, Rinehart and Winston.
- Andreoni, J., Brown, E., & Rischall, I. (2003). Charitable giving by married couples: Who decides and why does it matter? *The Journal of Human Resources*, 38(1), 111-133. doi:10.2307/1558758
- Andreoni, J., & McGuire, M. C. (1993). Identifying the free riders: A simple algorithm for determining who will contribute to a public good. *Journal of Public Economics*, 51(3), 447-454. doi:10.1016/0047-2727(93)90076-6
- Andreoni, J., & Payne, A. A. (2013). *Crowding out: The effect of government grants on donors, fundraisers, and foundations in Canada* McMaster University Department of Economics Working Papers.
- Andreoni, J., & Petrie, R. (2004). Public goods experiments without confidentiality: A glimpse into fund-raising. *Journal of Public Economics*, 88(7), 1605-1623. doi:10.1016/S0047-2727(03)00040-9
- Argo, J., Dahl, D., & Manchanda, R. (2005). The influence of a mere social presence in a retail context. *Journal of Consumer Research*, 32(2), 207-212. doi:10.1086/432230
- Arkes, H. R., Joyner, C. A., Pezzo, M. V., Nash, J. G., Siegel-Jacobs, K., & Stone, E. (1994). The psychology of windfall gains. *Organizational Behavior and Human Decision Processes*, 59(3), 331-347. doi:10.1006/obhd.1994.1063
- Aron, A., & Aron, E. N. (1986). *Love and the expansion of self: Understanding attraction and satisfaction*. Hemisphere Publishing Corp/Harper & Row Publishers
- Aron, A., Aron, E. N., & Smollan, D. (1992). Inclusion of other in the self scale and the structure of interpersonal closeness. *Journal of Personality and Social Psychology*, 63(4), 596-612. doi:10.1037/0022-3514.63.4.596
- Aron, A., Lewandowski, G.W. Jr., Mashek, D., & Aron, E.N. (2013). The self-expansion model of motivation and cognition in close relationships. In J. A. Simpson & L. Campbell (Eds.) *The Oxford handbook of close relationships* (pp. 90-115). New York: Oxford University Press
- Aron, A., Melinat, E., Aron, E. N., Vallone, R. D., & Bator, R. J. (1997). The experimental generation of interpersonal closeness: A procedure and some preliminary findings. *Personality and Social Psychology Bulletin*, 23(4), 363–377. <https://doi.org/10.1177/0146167297234003>

- Aronson, E., & Osherow, N. (1980). Cooperation, prosocial behavior, and academic performance: experiments in the desegregated classroom. In L. Bickerman (Ed.), *Applied Social Psychology Annual*. Beverley Hills: Sage.
- Asch, S. E. (1951). Effects of group pressure upon the modification and distortion of judgments. In Guetzkow, H. (Ed.) *Groups, Leadership and Men*, Carnegie Press, Pittsburgh, pp. 177-190
- Asch, S. E. (1952) Group forces in the modification and distortion of judgments. In S. E. Asch (Ed.) *Social Psychology*, Prentice-Hall, Englewood Cliffs, pp. 450–501. <https://doi.org/10.1037/10025-016>
- Barclay, P. (2004). Trustworthiness and competitive altruism can also solve the “tragedy of the commons”. *Evolution and Human Behavior*, 25(4), 209-220. doi:10.1016/j.evolhumbehav.2004.04.002
- Barclay, P., & Willer, R. (2007). Partner choice creates competitive altruism in humans. *Proceedings of the Royal Society B: Biological Sciences*, 274(1610), 749-753. doi:10.1098/rspb.2006.0209
- Baron, R. S., Roper, G., & Baron, P. H. (1974). Group discussion and the stingy shift. *Journal of Personality and Social Psychology*, 30(4), 538-545. doi:10.1037/h0037029
- Batchelder, T. H., & Root, S. (1994). Effects of an undergraduate program to integrate academic learning and service: Cognitive, prosocial cognitive, and identity outcomes. *Journal of Adolescence*, 17(4), 341-355. doi:10.1006/jado.1994.1031.
- Batson, D. C. (2012). The empathy altruism hypothesis: Issues and implications. In J. Decety (Ed.), *Empathy from Bench to Bedside*, Cambridge: MIT Press.
- Batson, C. D., Early, S., & Salvarani, G. (1997). Perspective taking: Imagining how another feels versus imagining how you would feel. *Personality and Social Psychology Bulletin*, 23(7), 751-758. doi:10.1177/0146167297237008
- Batson, C. D., Lishner, D. A., Carpenter, A., Dulin, L., Harjusola-Webb, S., Stocks, E. L., . . . Sampat, B. (2003). “. as you would have them do unto you”: Does imagining yourself in the other's place stimulate moral action? *Personality and Social Psychology Bulletin*, 29(9), 1190-1201. doi:10.1177/0146167203254600
- Baumeister, R. F. (1982). A self-presentational view of social phenomena. *Psychological Bulletin*, 91(1), 3-26. doi:10.1037/0033-2909.91.1.3
- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, 117(3), 497-529. doi:10.1037/0033-2909.117.3.497

- Bekkers, R. H. F. P., & 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. doi:10.1177/0899764010380927
- Bennett, R. (2015). Individual characteristics and the arousal of mixed emotions: Consequences for the effectiveness of charity fundraising advertisements. *International Journal of Nonprofit and Voluntary Sector Marketing*, 20(2), 155-176. doi:10.1002/nvsm.1500
- Berman, J. Z., Barasch, A., Levine, E. E., & Small, D. A. (2018). Impediments to effective altruism: The role of subjective preferences in charitable giving. *Psychological Science*, 29(5), 834-844. doi:10.1177/0956797617747648
- Bidee, J., Vantilborgh, T., Pepermans, R., Huybrechts, G., Willems, J., Jegers, M., & Hofmans, J. (2013). Autonomous motivation stimulates volunteers' work effort: A self-determination theory approach to volunteerism. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, 24(1), 32-47. doi:10.1007/s11266-012-9269-x
- Binder-Hathaway, R. (2018). *The effects of behavioral interventions on generosity: A literature review on the behavioral levers of charitable giving*. Retrieved from Global Giving at <https://www.globalgiving.org/learn/fundraising-literature-review/>.
- Bischoff, I., & Krauskopf, T. (2015). Warm glow of giving collectively – an experimental study. *Journal of Economic Psychology*, 51, 210-218. doi:10.1016/j.joep.2015.09.001
- Blumberg, H. H. (1972). Communication of interpersonal evaluations. *Journal of Personality and Social Psychology*, 23(2), 157-162. doi:10.1037/h0033027
- Bond, R. M., Fariss, C. J., Jones, J. J., Kramer, A. D. I., Marlow, C., Settle, J. E., & Fowler, J. H. (2012). A 61-million-person experiment in social influence and political mobilization. *Nature*, 489(7415), 295-298. doi:10.1038/nature11421
- Boothby, E. J., Clark, M. S., & Bargh, J. A. (2014). Shared experiences are amplified. *Psychological Science*, 25(12), 2209-2216. doi:10.1177/0956797614551162
- Boothby, E. J., Smith, L. K., Clark, M. S., & Bargh, J. A. (2016). Psychological distance moderates the amplification of shared experience. *Personality and Social Psychology Bulletin*, 42(10), 1431-1444. doi:10.1177/0146167216662869
- Bradley, A., Lawrence, C., & Ferguson, E. (2018). Does observability affect prosociality? *Proceedings of the Royal Society: Biological Sciences*, 285(1875), 20180116. doi:10.1098/rspb.2018.0116

- Brown, E. (2005). Married Couples' Charitable Giving: Who and Why. In M.A. Taylor, & S. Shaw-Hardy (Eds.), *The Transformative Power of Women's Philanthropy*. New Directions for Philanthropic Fundraising (50). (pp.69-80). San Francisco, CA: Wiley Periodicals, Inc.
- Brown, E., Mesch, D., Moore, Z., Kou, X., & Kim, S. (2010). *Who decides revisited: Household decision making and charitable giving*. Presentation at the Association for Research on Nonprofit Organizations and Voluntary Action (ARNOVA), Alexandria, VA.
- Brown, P., & Levinson, S. C. (1987). *Politeness: Some universals in language usage* (Vol 4). Cambridge, England: Cambridge University Press.
doi:10.1017/CBO9780511813085
- Buss, D. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences*, 12(1), 1-14.
doi:10.1017/S0140525X00023992
- Butts, M. M., Lunt, D. C., Freling, T. L., & Gabriel, A. S. (2019). Helping one or helping many? A theoretical integration and meta-analytic review of the compassion fade literature. *Organizational Behavior and Human Decision Processes*, 151, 16-33.
doi:10.1016/j.obhdp.2018.12.006
- CanadaHelps (2018). *The giving report 2018*. Retrieved from <https://www.canadahelps.org/en/the-giving-report/>.
- Cacioppo, J. T., von Hippel, W., & Ernst, J. M. (1997). Mapping cognitive structures and processes through verbal content: The thought-listing technique. *Journal of Consulting and Clinical Psychology*, 65(6), 928-940. doi:10.1037/0022-006X.65.6.928
- Carboni, J. L., & Eikenberry, A. (2018). Giving circle membership: How collective giving impacts donors. Retrieved from <https://scholarworks.iupui.edu/bitstream/handle/1805/17743/giving-circle-membership18.pdf>
- Carr, P. B., & Walton, G. M. (2014). Cues of working together fuel intrinsic motivation. *Journal of Experimental Social Psychology*, 53, 169-184.
doi:10.1016/j.jesp.2014.03.015
- Chang, C., & Lee, Y. (2009). Framing charity advertising: Influences of message framing, image valence, and temporal framing on a charitable appeal. *Journal of Applied Social Psychology*, 39(12), 2910-2935. doi:10.1111/j.1559-1816.2009.00555.x

- Chapman, C. M., Masser, B. M., & Louis, W. R. (2019). The champion effect in peer-to-peer giving: Successful campaigns highlight fundraisers more than causes. *Nonprofit and Voluntary Sector Quarterly*, 48(3), 572-592. doi:10.1177/0899764018805196
- Cherry, T., Frykblom, P., & Shogren, J. (2002). Hardnose the Dictator. *American Economic Review*, 92(4), 1218-1221. doi:10.1257/00028280260344740
- Cialdini, R. B., & Goldstein, N. J. (2004). Social influence: Compliance and conformity. *Annual Review of Psychology*, 55(1), 591-621. doi:10.1146/annurev.psych.55.090902.142015
- Cialdini, R. B., & Trost, M. R. (1998). Social influence: Social norms, conformity, and compliance. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds.), *The handbook of social psychology* (pp. 151–192). Boston, MA: McGraw-Hill.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, N.J: L. Erlbaum Associates.
- Coke, J. S., Batson, C. D., & McDavis, K. (1978). Empathic mediation of helping: A two-stage model. *Journal of Personality and Social Psychology*, 36(7), 752-766. doi:10.1037/0022-3514.36.7.752
- Collins, N. L., & Miller, L. C. (1994). Self-disclosure and liking: A meta-analytic review. *Psychological Bulletin*, 116(3), 457-475. doi:10.1037//0033-2909.116.3.457
- Collective Giving Research Group (2017). *The landscape of Giving Circles/Collective Giving Groups in the US, 2016*. Retrieved from <http://johnsoncenter.org/wp-content/uploads/2017/11/Giving-Circles-Research-Full-Report-1-WEB.pdf>
- Crutchfield, R. S. (1955). Conformity and character. *American Psychologist*, 10(5), 191-198. doi:10.1037/h0040237
- Cryder, C. E., Loewenstein, G., & Scheines, R. (2013). The donor is in the details. *Organizational Behavior and Human Decision Processes*, 120(1), 15-23. doi:10.1016/j.obhdp.2012.08.002
- Croson, R., & Shang, J. (2011) Social influences in giving: Field experiments in public radio. In D. M. Oppenheimer & C. Y. Olivola (Eds.), *The science of giving: Experimental approaches to the study of charity* (pp. 246 – 249). New York, NY: Taylor and Francis.
- Cumming, G. (2008). Replication and *p* intervals: *P* values predict the future only vaguely, but confidence intervals do much better. *Perspectives on Psychological Science*, 3(4), 286-300. doi:10.1111/j.1745-6924.2008.00079.x

- Curry, O. S., Rowland, L. A., Van Lissa, C. J., Zlotowitz, S., McAlaney, J., & Whitehouse, H. (2018). Happy to help? A systematic review and meta-analysis of the effects of performing acts of kindness on the well-being of the actor. *Journal of Experimental Social Psychology*, 76, 320-329. doi:10.1016/j.jesp.2018.02.014
- Dale, E.J. (2016). *Giving among same-sex couples: The role of identity, motivations, and charitable decision-making in philanthropic engagement* (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. doi: 10.7912/C2GK5J
- Dana, J., Cain, D. M., & Dawes, R. M. (2006). What you don't know won't hurt me: Costly (but quiet) exit in dictator games. *Organizational Behavior and Human Decision Processes*, 100(2), 193-201. doi:10.1016/j.obhdp.2005.10.001
- Darley, J. M., & Latané, B. (1968). Bystander intervention in emergencies: Diffusion of responsibility. *Journal of Personality and Social Psychology*, 8(4p1), 377-383. doi:10.1037/h0025589
- Deci, E. L., & Ryan, R. M. (2010). Intrinsic motivation. *The corsini encyclopedia of psychology*, 1-2.
- Deci, E. L., & Ryan, R. M. (2014). Autonomy and need satisfaction in close relationships: Relationships motivation theory. In *Human motivation and interpersonal relationships* (pp. 53-73). Springer, Dordrecht.
- Diamantopoulos, A., Sarstedt, M., Fuchs, C., Wilczynski, P., & Kaiser, S. (2012). Guidelines for choosing between multi-item and single-item scales for construct measurement: A predictive validity perspective. *Journal of the Academy of Marketing Science*, 40(3), 434-449. doi:10.1007/s11747-011-0300-3
- Diener, E., Oishi, S., & Tay, L. (2018). Advances in subjective well-being research. *Nature Human Behaviour*, 2(4), 253-260. <https://doi.org/10.1038/s41562-018-0307-6>
- Diener, E., Wirtz, D., Tov, W., Kim-Prieto, C., Choi, D., Oishi, S., & Biswas-Diener, R. (2009). New well-being measures: Short scales to assess flourishing and positive and negative feelings. *Social Indicators Research*, 97(2), 143-156. doi:10.1007/s11205-009-9493-y
- Dovidio, J. F., & Penner, L. A. (2001). Helping and altruism. In M. Brewer & M. Hewstone (Eds.), *Blackwell international handbook of social psychology: Interpersonal processes* (pp. 162–195). Cambridge, MA:Blackwell.
- Duncan, B. (2004). A theory of impact philanthropy. *Journal of Public Economics*, 88(9), 2159-2180. doi:10.1016/S0047-2727(03)00037-9

- Dunn, E. W., Aknin, L. B., & Norton, M. I. (2008). Spending money on others promotes happiness. *Science*, *319*(5870), 1687-1688. doi:10.1126/science.1150952
- Dunn, E. W., Aknin, L. B., & Norton, M. I. (2014). Prosocial spending and happiness: Using money to benefit others pays off. *Current Directions in Psychological Science*, *23*(1), 41-47. doi:10.1177/0963721413512503
- Dunn, E. W., & Ashton-James, C. (2008). On emotional innumeracy: Predicted and actual affective responses to grand-scale tragedies. *Journal of Experimental Social Psychology*, *44*(3), 692-698. doi:10.1016/j.jesp.2007.04.011
- Edwards, W., Lindman, H., & Savage, L. J. (1963). Bayesian statistical inference for psychological research. *Psychological Review*, *70*(3), 193-242. doi:10.1037/h0044139
- Eikenberry, A., & Bearman, J. (2009). *The Impact of Giving Together: Giving Circles' Influence on Members' Philanthropic and Civic Behaviors, Knowledge and Attitudes*. Baltimore, MD: Forum of Regional Associations of Grantmakers. Retrieved from https://www.academia.edu/12175637/The_Impact_of_Giving_Together_Full_Report
- Einolf, C. J., Curran, H. D., & Brown, K. C. (2018). How married couples make charitable giving decisions. *Nonprofit and Voluntary Sector Quarterly*, *47*(3), 657-669. doi:10.1177/0899764018757027
- Erlandsson, A., Björklund, F., & Bäckström, M. (2014). Perceived utility (not sympathy) mediates the proportion dominance effect in helping decisions: Perceived utility mediates the PDE. *Journal of Behavioral Decision Making*, *27*(1), 37-47. doi:10.1002/bdm.1789
- Fehr, E., & Fischbacher, U. (2003). The nature of human altruism. *Nature*, *425*(6960), 785-791. <https://doi.org/10.1038/nature02043>
- Fehr, E., & Fischbacher, U. (2004). Social norms and human cooperation. *Trends in Cognitive Sciences*, *8*(4), 185-190. <https://doi.org/10.1016/j.tics.2004.02.007>
- Fehr, E., & Gächter, S. (2002). Altruistic punishment in humans. *Nature*, *415*(6868), 137-140. <https://doi.org/10.1038/415137a>
- Festinger, L. (1954). A theory of social comparison processes. *Human Relations*, *7*(2), 117-140. doi:10.1177/001872675400700202
- Feldmann D, Nixon, J., Brady, J., Brainer-Banker, L., Wheeler, L. (2013). *The 2013 Millennial Impact Report*. Retrieved from <https://www.michiganfoundations.org/sites/default/files/resources/Millennial-Impact-Report-2013.pdf>

- Felmlee, D., & Sprecher, S. (2000). Close relationships and social psychology: Intersections and future paths. *Social Psychology Quarterly*, 63(4), 365-376. doi:10.2307/2695846
- Finkelstein, M. A., Penner, L. A., & Brannick, M. T. (2005). motive, role identity, and prosocial personality as predictors of volunteer activity. *Social Behavior and Personality: An International Journal*, 33(4), 403-418. doi:10.2224/sbp.2005.33.4.403.
- Fischer, P., Krueger, J. I., Greitemeyer, T., Vogrincic, C., Kastenmüller, A., Frey, D., . . . Kainbacher, M. (2011). The bystander-effect: A meta-analytic review on bystander intervention in dangerous and non-dangerous emergencies. *Psychological Bulletin*, 137(4), 517-537. doi:10.1037/a0023304
- Fisher, R. J., & Grégoire, Y. (2006). Gender differences in decision satisfaction within established dyads: Effects of competitive and cooperative behaviors. *Psychology and Marketing*, 23(4), 313-333. doi:10.1002/mar.20113
- Flynn, F. J., & Lake, V. K. B. (2008). If you need help, just ask: Underestimating compliance with direct requests for help. *Journal of Personality and Social Psychology*, 95(1), 128-143. doi:10.1037/0022-3514.95.1.128
- Fredrickson, B. L. (1998). What good are positive emotions? *Review of General Psychology*, 2(3), 300-319. doi:10.1037/1089-2680.2.3.300
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology. the broaden-and-build theory of positive emotions. *The American Psychologist*, 56(3), 218-226. doi:10.1037//0003-066X.56.3.218
- Fredrickson, B. L. (2013). Positive emotions broaden and build. In P. Devine & A. Plant (Eds.), *Advances in experimental social psychology* (Vol. 47, pp. 1–53) Burlington, MA: Academic Press.
- Frey, D. (1978). Reactions to success and failure in public and in private conditions. *Journal of Experimental Social Psychology*, 14(2), 172-179. doi:10.1016/0022-1031(78)90023-9
- Frey, B. S., & Meier, S. (2004). Social comparisons and pro-social behavior: Testing “Conditional cooperation” in a field experiment. *American Economic Review*, 94(5), 1717-1722. doi:10.1257/0002828043052187
- Gallistel, C. R. (2009). The importance of proving the null. *Psychological Review*, 116(2), 439-453. doi:10.1037/a0015251
- Gerber, J. P., Wheeler, L., & Suls, J. (2018). A social comparison theory meta-analysis 60+ years on. *Psychological Bulletin*, 144(2), 177-197. doi:10.1037/bul0000127

- Giving USA (2018). *Giving USA: The Annual Report on Philanthropy for the Year 2017*. Report retrieved from Giving USA Foundation at <https://lclsonline.org/wp-content/uploads/2018/12/Giving-USA-2018-Annual-Report.pdf>
- Giving USA. (2019). *Giving USA: The annual report on philanthropy for the year 2018*. Retrieved from <https://givingusa.org/giving-usa-2019-americans-gave-427-71-billion-to-charity-in-2018-amid-complex-year-for-charitable-giving/>
- Gorczyca, M., & Hartman, R. L. (2017). The new face of philanthropy: The role of intrinsic motivation in millennials' attitudes and intent to donate to charitable organizations. *Journal of Nonprofit & Public Sector Marketing*, 29(4), 415-433. doi:10.1080/10495142.2017.1326349
- Grant, A. M. (2008). The significance of task significance: Job performance effects, relational mechanisms, and boundary conditions. *Journal of Applied Psychology*, 93(1), 108-124. doi:10.1037/0021-9010.93.1.108
- Grant, A. M., Campbell, E. M., Chen, G., Cottone, K., Lapedis, D., & Lee, K. (2007). Impact and the art of motivation maintenance: The effects of contact with beneficiaries on persistence behavior. *Organizational Behavior and Human Decision Processes*, 103(1), 53-67. doi:10.1016/j.obhdp.2006.05.004
- Graziano, W. G., & Eisenberg, N. (1997). Agreeableness: A dimension of personality. In R. Hogan, J. A. Johnson, & S. R. Briggs (Eds.), *Handbook of personality psychology* (pp. 795-824). San Diego, CA, US: Academic Press. <http://dx.doi.org/10.1016/B978-012134645-4/50031-7>
- Graziano, W. G., & Habashi, M. M. (2010). Motivational processes underlying both prejudice and helping. *Personality and Social Psychology Review*, 14(3), 313-331. doi:10.1177/1088868310361239
- Graziano, W. G., & Habashi, M. M. (2015). Searching for the prosocial personality. In D. A. Schroeder & W. G. Graziano (Eds.), *The Oxford handbook of prosocial behavior* (pp. 231-255). Oxford, UK: Oxford University Press.
- Greenberg, M. D., & Gerber, E. M. (2012). *Crowdfunding: A survey and taxonomy*. 12(4), Segal Design Institute Technical Report.
- Gur, S., & Olien, J. L. (2015). Arguing for a generous identity. *Sociology Compass*, 9(6), 499-508. doi:10.1111/soc4.12271
- Habashi, M. M., Graziano, W. G., & Hoover, A. E. (2016). Searching for the prosocial personality: A big five approach to linking personality and prosocial behavior. *Personality and Social Psychology Bulletin*, 42(9), 1177-1192. doi:10.1177/0146167216652859

- Hackinger, J. (2018). *Source-dependent preferences* [Working Paper]. Retrieved from https://editorialexpress.com/cgi-bin/conference/download.cgi?db_name=EAESEM2018 &paper_id=2228
- Haley, K. J., & Fessler, D. M. T. (2005). Nobody's watching? *Evolution and Human Behavior*, 26(3), 245-256. doi:10.1016/j.evolhumbehav.2005.01.002
- Harbaugh, W. T., Mayr, U., & Burghart, D. R. (2007). Neural responses to taxation and voluntary giving reveal motives for charitable donations. *Science*, 316(5831), 1622-1625. doi:10.1126/science.1140738
- Hardy, S. A., & Carlo, G. (2011). Moral identity: What is it, how does it develop, and is it linked to moral action?: Moral identity development. *Child Development Perspectives*, 5(3), 212-218. doi:10.1111/j.1750-8606.2011.00189.x
- Hardy, C. L., & Van Vugt, M. (2006). Nice guys finish first: The competitive altruism hypothesis. *Personality and Social Psychology Bulletin*, 32(10), 1402-1413. doi:10.1177/0146167206291006
- Hayes, A. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach*. New York, NY: Guilford Press.
- Helliwell, J. F., Huang, H., & Wang, S. (2019). Changing world happiness. In J. F. Helliwell, R. Layard, & J. Sachs (Eds.), *World happiness report 2019* (pp. 10–45). New York: Sustainable Development Solutions Network.
- House, B. R., Henrich, J., Brosnan, S. F., & Silk, J. B. (2012). The ontogeny of human prosociality: Behavioral experiments with children aged 3 to 8. *Evolution and Human Behavior*, 33(4), 291–308. <https://doi.org/10.1016/j.evolhumbehav.2011.10.007>
- Hui, B. P. H., & Kogan, A. (2018). Daily ups and downs: An event-sampling study of the mediated moderation of prosocial engagement on well-being. *Social Psychological and Personality Science*, 9(6), 675-688. doi:10.1177/1948550617722197
- Hung, H. M. J., O'Neill, R. T., Bauer, P., & Kohne, K. (1997). The behavior of the p-value when the alternative hypothesis is true. *Biometrics*, 53(1), 11–22. doi:10.2307/2533093
- Institute for Social Research (2018). *Panel Study of Income Dynamics data*. Retrieved from <https://simba.isr.umich.edu/default.aspx>
- Isaac, J. D., Sansone, C., & Smith, J. L. (1999). Other people as a source of interest in an activity. *Journal of Experimental Social Psychology*, 35(3), 239-265. doi:10.1006/jesp.1999.1385

- Isen, A. M., & Reeve, J. (2005). The influence of positive affect on intrinsic and extrinsic motivation: Facilitating enjoyment of play, responsible work behavior, and self-control. *Motivation and Emotion*, 29(4), 295-323. doi:10.1007/s11031-006-9019-8
- Jenni, K., & Loewenstein, G. (1997). Explaining the identifiable victim effect. *Journal of Risk and Uncertainty*, 14(3), 235-257. doi:10.1023/A:1007740225484
- Jones, E. E., & Pittman, T. S. (1982). Toward a general theory of strategic self-presentation. *Psychological perspectives on the self*, 1(1), 231-262.
- Jordan, J. J., Hoffman, M., Nowak, M. A., & Rand, D. G. (2016). Uncalculating cooperation is used to signal trustworthiness. *Proceedings of the National Academy of Sciences of the United States of America*, 113(31), 8658-8663. doi:10.1073/pnas.1601280113
- Kahn, E. H. (2007, September 10). *Demonstrating Social Venture Partners' Impact*. Seattle: Social Venture Partners International.
- Karlan, D., & List, J. A. (2007). Does price matter in charitable giving? evidence from a large-scale natural field experiment. *The American Economic Review*, 97(5), 1774-1793. doi:10.1257/000282807783219599
- Keasey, K., & Moon, P. (1996). Gambling with the house money in capital expenditure decisions: An experimental analysis. *Economics Letters*, 50(1), 105-110. doi:10.1016/0165-1765(95)00726-1
- Keeler, J., James, W., & Abdel-Ghany, M. (1985). The Relative Size of Windfall Income and the Permanent Income Hypothesis. *Journal of Business & Economic Statistics*, 3(3), 209-215. doi:10.2307/1391591
- Kelley, H. H. (1983). *Close relationships*. New York: W.H. Freeman.
- Kelman, H. C. (1958). Compliance, identification, and internalization: Three processes of attitude change. *The Journal of Conflict Resolution*, 2(1), 51-60. doi:10.1177/002200275800200106
- Ki, E., & Oh, J. (2018). Determinants of donation amount in nonprofit membership associations. *International Journal of Nonprofit and Voluntary Sector Marketing*, 23(3), e1609-n/a. doi:10.1002/nvsm.1609
- Klein, N. (2017). Prosocial behavior increases perceptions of meaning in life. *The Journal of Positive Psychology*, 12(4), 354-361. doi:10.1080/17439760.2016.1209541

- Klein, N., Grossmann, I., Uskul, A. K., Kraus, A. A., & Epley, N. (2015). It pays to be nice, but not really nice: Asymmetric reputations from prosociality across 7 countries. *Judgment and Decision Making*, *10*(4), 355-364.
- Kogut, T., & Ritov, I. (2005). The singularity effect of identified victims in separate and joint evaluations. *Organizational Behavior and Human Decision Processes*, *97*(2), 106-116. doi:10.1016/j.obhdp.2005.02.003
- Kogut, T., & Ritov, I. (2013) The identifiable victim effect: Causes and boundary conditions. In D. M. Oppenheimer & C. Y. Olivola (Eds.), *The science of giving: Experimental approaches to the study of charity* (pp. 151-164). New York, NY: Taylor and Francis.
- Koo, M., & Fishbach, A. (2016). Giving the self: Increasing commitment and generosity through giving something that represents One's essence. *Social Psychological and Personality Science*, *7*(4), 339-348. doi:10.1177/1948550616628607
- Kraft-Todd, G. T., Norton, M. I., & Rand, D. G. (2015). *The selfishness of selfless people: Harnessing the theory of self-concept maintenance to increase charitable giving*. Retrieved from SSRN Electronic Journal at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2568869
- Krupka, E. L., & Weber, R. A. (2013). Identifying social norms using coordination games: why does dictator game sharing vary? Identifying social norms using coordination games. *Journal of the European Economic Association*, *11*(3), 495-524. doi:10.1111/jeea.12006
- Kuppuswamy, V., & Bayus, B. L. (2017). Does my contribution to your crowdfunding project matter? *Journal of Business Venturing*, *32*(1), 72-89. doi:10.1016/j.jbusvent.2016.10.004
- Lacetera, N., & Macis, M. (2010). Social image concerns and prosocial behavior: Field evidence from a nonlinear incentive scheme. *Journal of Economic Behavior and Organization*, *76*(2), 225-237. doi:10.1016/j.jebo.2010.08.007
- Lakens, D. (2017, May 11). How a power analysis implicitly reveals the smallest effect size you care about [Blog post]. Retrieved from <http://daniellakens.blogspot.com/2017/05/how-power-analysis-implicitly-reveals.html>
- Laroche, M., Bergeron, J., & Goutaland, C. (2003). How intangibility affects perceived risk: The moderating role of knowledge and involvement. *Journal of Services Marketing*, *17*(2), 122-140. doi:10.1108/08876040310467907

- Lasby, D. & Barr, C. (2018). *30 years of giving in Canada: The giving behaviours of Canadians: Who gives, how, and why?* Rideau Hall Foundation and Imagine Canada. Retrieved from <http://www.imaginecanada.ca/30years>.
- Latané, B. (1981). The psychology of social impact. *American Psychologist*, *36*(4), 343-356. <http://dx.doi.org/10.1037/0003-066X.36.4.343>
- Latané, B., & Darley, J. M. (1970). *The unresponsive bystander: Why doesn't he help?* New York, NY: Appleton Century Crofts.
- Laurenceau, J. P., Barrett, L. F., & Pietromonaco, P. R. (1998). Intimacy as an interpersonal process: The importance of self-disclosure, partner disclosure, and perceived partner responsiveness in interpersonal exchanges. *Journal of Personality and Social Psychology*, *74*(5), 1238-1251. doi:10.1037//0022-3514.74.5.1238
- Layous, K., Nelson, S. K., Oberle, E., Schonert-Reichl, K., & Lyubomirsky, S. (2012). Kindness counts: Prompting prosocial behavior in preadolescents boosts peer acceptance and well-being. *PLoS One*, *7*(12), 1-3. doi:10.1371.0051380
- Lee, R. M., Draper, M., & Lee, S. (2001). Social connectedness, dysfunctional interpersonal behaviors, and psychological distress: Testing a mediator model. *Journal of Counseling Psychology*, *48*(3), 310-318. doi:10.1037/0022-0167.48.3.310
- Lemmer, G., & Gollwitzer, M. (2017). The “true” indirect effect won't (always) stand up: When and why reverse mediation testing fails. *Journal of Experimental Social Psychology*, *69*, 144-149. doi:10.1016/j.jesp.2016.05.002
- Levine, E. E., Barasch, A., Rand, D., Berman, J. Z., & Small, D. A. (2018). Signaling emotion and reason in cooperation. *Journal of Experimental Psychology: General*, *147*(5), 702-719. doi:10.1037/xge0000399
- Loewenstein, G., & Small, D. A. (2007). The scarecrow and the tin man: The vicissitudes of human sympathy and caring. *Review of General Psychology*, *11*(2), 112-126. doi:10.1037/1089-2680.11.2.112
- Lok, I., & Dunn, E. W. (2020). Under what conditions does prosocial spending promote happiness? *Collabra: Psychology*, *6*(1), 5. doi:10.1525/collabra.254
- Løvoll, H. S., Røysamb, E., & Vittersø, J. (2017). Experiences matter: Positive emotions facilitate intrinsic motivation. *Cogent Psychology*, *4*(1) doi:10.1080/23311908.2017.1340083
- Lundberg, S., & Pollak, R. A. (1993). Separate spheres bargaining and the marriage market. *Journal of Political Economy*, *101*(6), 988-1010. doi:10.1086/261912

- Lyubomirsky, S., & Lepper, H. S. (1999). A measure of subjective happiness: Preliminary reliability and construct validation. *Social Indicators Research*, 46(2), 137-155. <http://dx.doi.org/10.1023/A:1006824100041>
- Martin, B. S., Gnoth, J., & Strong, C. (2009). Temporal construal in advertising: The moderating role of temporal orientation and attribute importance in consumer evaluations. *Journal of Advertising*, 38(3), 5-19. doi:10.2753/JOA0091-3367380301
- Martin, R., & Randal, J. (2011) How social norms, price, and scrutiny influence donation behaviour. In D. M. Oppenheimer & C. Y. Olivola (Eds.), *The science of giving: Experimental approaches to the study of charity* (pp. 300 – 397). New York, NY: Taylor and Francis.
- Matosin, N., Frank, E., Engel, M., Lum, J. S., & Newell, K. A. (2014). Negativity towards negative results: A discussion of the disconnect between scientific worth and scientific culture. *Disease Models & Mechanisms*, 7(2), 171-173. doi:10.1242/dmm.015123
- Mayhew, B. H. (1968). Behavioral observability and compliance with religious proscriptions on birth control. *Social Forces*, 47(1), 60-70. doi:10.2307/2574713
- McGlone, T., Spain, J. W., & McGlone, V. (2011). Corporate social responsibility and the millennials. *Journal of Education for Business*, 86(4), 195-200. doi:10.1080/08832323.2010.502912
- Meyvis, T., Bennett, A., & Oppenheimer, D. (2011) Precommitment to charity. In D. M. Oppenheimer & C. Y. Olivola (Eds.), *The science of giving: Experimental approaches to the study of charity* (pp. 151 – 200). New York, NY: Taylor and Francis.
- Michaeli, M., & Spiro, D. (2018). Prescriptive norms and social comparisons. *Games*, 9(4), 97. doi:10.3390/g9040097
- Miller, J., Rupert G. (1997). *Beyond ANOVA: Basics of applied statistics*. Boca Raton: Chapman and Hall/CRC.
- Moody, M. (2008, November). Becoming a venture philanthropist-Part I: Findings from a survey of Social Venture Partners in the United States and Canada. Paper presented at the annual conference of the Association for Research on Nonprofit Organizations and Voluntary Action, Philadelphia, PA.
- Myers, J. L., Well, A., Lorch, R. F. (2010). *Research design and statistical analysis* (3rd ed.). New York: Routledge.

- Nowak, M. A. (2006). Five rules for the evolution of cooperation. *Science*, 314(5805), 1560-1563. doi:10.1126/science.1133755
- Nunnally, J. (1978). *Psychometric methods*. New York, NY:McGraw-Hill
- O'Brien, E., & Kassirer, S. (2019). People are slow to adapt to the warm glow of giving. *Psychological Science*, 30(2), 193-204. doi:10.1177/0956797618814145
- Oliver, P., Marwell, G., & Teixeira, R. (1985). A theory of the critical mass: I. Interdependence, group heterogeneity, and the production of collective action. *American Journal of Sociology*, 91(3), 522-556.
<http://dx.doi.org/10.1086/228313>
- Olson, M. (1965). *The logic of collective action: Public goods and the theory of groups*. Cambridge, Mass: Harvard University Press.
- Oppenheimer, D. M., & Olivola, C. Y. (2011). *The science of giving: Experimental approaches to the study of charity* Taylor and Francis.
doi:10.4324/9780203865972
- Otero, M. C., Wells, J. L., Chen, K., Brown, C. L., Connelly, D. E., Levenson, R. W., & Fredrickson, B. L. (2019). Behavioral indices of positivity resonance associated with long-term marital satisfaction. *Emotion (Washington, D.C.)*, doi:10.1037/emo0000634
- Palacios, M. & Fuss, J. (2018). *Generosity in Canada and the United States: The 2018 Generosity Index*. Fraser Institute Research Bulletin. Retrieved from <https://www.fraserinstitute.org/sites/default/files/generosity-in-canada-and-the-united-states-2018.pdf>.
- Peck, J., & Shu, S. (2009). The effect of mere touch on perceived ownership. *Journal of Consumer Research*, 36(3), 434-447. doi:10.1086/598614
- Penner, L. A., Dovidio, J. F., Piliavin, J. A., & Schroeder, D. A. (2005). Prosocial behavior: Multilevel perspectives. *Annual Review of Psychology*, 56(1), 365-392. doi:10.1146/annurev.psych.56.091103.070141.
- Piazza, J., & Bering, J. M. (2008). Concerns about reputation via gossip promote generous allocations in an economic game. *Evolution and Human Behavior*, 29, 172–178. [http:// dx.doi.org/10.1016/j.evolhumbehav.2007.12.002](http://dx.doi.org/10.1016/j.evolhumbehav.2007.12.002).
- Pierce, J. L., Kostova, T., & Dirks, K. T. (2003). The state of psychological ownership: Integrating and extending a century of research. *Review of General Psychology*, 7(1), 84-107. doi:10.1037//1089-2680.7.1.84

- Powell, K. L., Roberts, G., Nettle, D., & Fusani, L. (2012). Eye images increase charitable donations: Evidence from an opportunistic field experiment in a supermarket. *Ethology*, *118*(11), 1096-1101. doi:10.1111/eth.12011
- Prelec, D., & Loewenstein, G. (1998). The red and the black: Mental accounting of savings and debt: Abstract. *Marketing Science (1986-1998)*, *17*(1), 4.
- Rand, D. G., & Nowak, M. A. (2013). Human cooperation. *Trends in Cognitive Sciences*, *17*(8), 413–425. <https://doi.org/10.1016/j.tics.2013.06.003>
- Rand, D. G., Yoeli, E., & Hoffman, M. (2014). Harnessing reciprocity to promote cooperation and the provisioning of public goods. *Policy Insights from the Behavioral and Brain Sciences*, *1*(1), 263-269. doi:10.1177/2372732214548426
- Reinstein, D., & Riener, G. (2012). Decomposing desert and tangibility effects in a charitable giving experiment. *Experimental Economics*, *15*(1), 229-240. doi:10.1007/s10683-011-9298-0
- Reis, H. T., & Shaver, P. (1988). *Intimacy as an interpersonal process*. In S. Duck, D. F. Hay, S. E. Hobfoll, W. Ickes, & B. M. Montgomery (Eds.), *Handbook of personal relationships: Theory, research and interventions* (p. 367–389). John Wiley & Sons.
- Rege, M., & Telle, K. (2004). The impact of social approval and framing on cooperation in public good situations. *Journal of Public Economics*, *88*(7), 1625-1644. doi:10.1016/S0047-2727(03)00021-5
- Reykowski, J. (1982). Social motivation. *Annual Review of Psychology*, *33*(1), 123-154. doi:10.1146/annurev.ps.33.020182.001011
- Reyniers, D., & Bhalla, R. (2013). Reluctant altruism and peer pressure in charitable giving. *Judgment and Decision Making*, *8*(1), 7-15.
- Riordan, C. A., James, M. K., & Dunaway, F. A. (1985). Interpersonal determinants of helping and the transgression-compliance relationship. *The Journal of Social Psychology*, *125*(3), 365-372. doi:10.1080/00224545.1985.9922899
- Roberts, G. (1998). Competitive altruism: From reciprocity to the handicap principle. *Proceedings of the Royal Society of London. Series B: Biological Sciences*, *265*(1394), 427-431. doi:10.1098/rspb.1998.0312
- Rogers, T., Ternovski, J., & Yoeli, E. (2016). Potential follow-up increases private contributions to public goods. *Proceedings of the National Academy of Sciences of the United States of America*, *113*(19), 5218-5220. doi:10.1073/pnas.1524899113

- Rosenthal, R. (1966). *Experimenter effects in behavioral research*. New York: Appleton-Century-Crofts.
- Rosseel, Y. (2012). lavaan: an R package for structural equation modeling. *Journal of Statistical Software*, 48(2), 1-36. Retrieved from <http://www.jstatsoft.org/v48/i02/>.
- Rouder, J. N., Speckman, P. L., Sun, D., Morey, R. D., & Iverson, G. (2009). Bayesian t tests for accepting and rejecting the null hypothesis. *Psychonomic Bulletin & Review*, 16(2), 225-237. doi:10.3758/PBR.16.2.225
- Ryan, R. M. (1982). Control and information in the intrapersonal sphere: An extension of cognitive evaluation theory. *Journal of Personality and Social Psychology*, 43(3), 450-461. doi:10.1037/0022-3514.43.3.450
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55(1), 68-78. doi:10.1037/0003-066X.55.1.68
- Sandstrom, G. M., & Dunn, E. W. (2014). Social interactions and well-being: The surprising power of weak ties. *Personality and Social Psychology Bulletin*, 40(7), 910-922. doi:10.1177/0146167214529799
- Satow, K. L. (1975). Social approval and helping. *Journal of Experimental Social Psychology*, 11(6), 501-509. doi:10.1016/0022-1031(75)90001-3
- Saxton, G. D., & Wang, L. (2014). The social network effect: The determinants of giving through social media. *Nonprofit and Voluntary Sector Quarterly*, 43(5), 850-868. doi:10.1177/0899764013485159
- Scharf, K., & Smith, S. (2016). Relational altruism and giving in social groups. *Journal of Public Economics*, 141, 1-10. doi:10.1016/j.jpubeco.2016.06.001
- Schegloff, E. A., Jefferson, G., & Sacks, H. (1977). The preference for self-correction in the organization of repair in conversation. *Language*, 53(2), 361. doi:10.2307/413107
- Schnitker, S. A., King, P. E., & Houlberg, B. J. (in press). Religion, spirituality, and thriving: Transcendent narrative, virtue, and lived- purpose. *Journal of Research on Adolescence*. 10.1111/jora.12443.
- Schroeder, D. A., Penner, L. A., Dovidio, J. F., Piliavin, J. A. (1995). *The Psychology of Helping and Altruism*. New York, NY: McGraw-Hill

- Schroeder, D. A., & Graziano, W. G. (2015). *The Oxford handbook of prosocial behavior*. New York, NY: Oxford University Press.
- Shteynberg, G., Hirsh, J. B., Apfelbaum, E. P., Larsen, J. T., Galinsky, A. D., & Roese, N. J. (2014). Feeling more together: Group attention intensifies emotion. *Emotion (Washington, D.C.)*, *14*(6), 1102-1114. doi:10.1037/a0037697
- Seta, J. J. (1982). The impact of comparison processes on coactors' task performance. *Journal of Personality and Social Psychology*, *42*(2), 281-291. doi:10.1037//0022-3514.42.2.28
- Stets, J. E., & Carter, M. J. (2011). The moral self: Applying identity theory. *Social Psychology Quarterly*, *74*(2), 192-215. doi:10.1177/0190272511407621
- Stets, J., & Carter, M. (2012). A Theory of the Self for the Sociology of Morality. *American Sociological Review*, *77*(1), 120-140. <https://doi.org/10.1177/0003122411433762>
- Shang, J., & Croson, R. (2006). The impact of social comparisons on non-profit fundraising. *Research in Experimental Economics*, *11*, 143–156. doi:10.1016/S0193-2306(06)11006-6
- Shang, J., & Croson, R. (2008). The impact of downward social information on contribution decisions. *Experimental Economics*, *11*(3), 221–223. <https://doi.org/10.1007/s10683-007-9191-z>
- Shang, J., & Croson, R. (2009). A field experiment in charitable contribution: The impact of social information on the voluntary provision of public goods. *The Economic Journal*, *119*(540), 1422-1439. doi:10.1111/j.1468-0297.2009.02267.x
- Simonsohn, U., Nelson, L. D., & Simmons, J. P. (2014a). P-curve: A key to the file-drawer. *Journal of Experimental Psychology. General*, *143*(2), 534-547. doi:10.1037/a0033242
- Simonsohn, U., Nelson, L. D., & Simmons, J. P. (2014b). P-curve and effect size: Correcting for publication bias using only significant results. *Perspectives on Psychological Science*, *9*(6), 666-681. doi:10.1177/1745691614553988
- Simonsohn, U., Simmons, J. P., & Nelson, L. D. (2015). Better P-curves: Making P-curve analysis more robust to errors, fraud, and ambitious P-hacking, a reply to ulrich and miller (2015). *Journal of Experimental Psychology. General*, *144*(6), 1146-1152. doi:10.1037/xge0000104

- Shteynberg, G., & Apfelbaum, E. P. (2013). The power of shared experience: simultaneous observation with similar others facilitates social learning. *Social Psychological and Personality Science*, 4(6), 738–744. <https://doi.org/10.1177/1948550613479807>
- Small, D. A. (2011) Sympathy biases and sympathy appeals: Reducing social distance to boost charitable contributions. In D. M. Oppenheimer & C. Y. Olivola (Eds.), *The science of giving: Experimental approaches to the study of charity* (pp. 423 – 456. New York, NY: Taylor and Francis.
- Small, D. A., & Loewenstein, G. (2003). Helping a victim or helping the victim: Altruism and identifiability. *Journal of Risk and Uncertainty*, 26(1), 5-16. doi:10.1023/A:1022299422219
- Small, D. A., Loewenstein, G., & Slovic, P. (2007). Sympathy and callousness: The impact of deliberative thought on donations to identifiable and statistical victims. *Organizational Behavior and Human Decision Processes*, 102(2), 143-153. doi:10.1016/j.obhdp.2006.01.005
- Small, D., & Simonsohn, U. (2008). Friends of victims: Personal experience and prosocial behavior. *Journal of Consumer Research*, 35(3), 532-542. doi:10.1086/527268
- Small, D. A., & Verrochi, N. M. (2009). The face of need: Facial emotion expression on charity advertisements. *Journal of Marketing Research*, 46(6), 777-787. doi:10.1509/jmkr.46.6.777
- Smith, R. H., & Kim, S. H. (2007). Comprehending envy. *Psychological Bulletin*, 133, 46–64. doi:10.1037/0033-2909.133.1.46
- Smith, K. D., Keating, J. P., & Stotland, E. (1989). Altruism reconsidered: The effect of denying feedback on a victim's status to empathic witnesses. *Journal of Personality and Social Psychology*, 57(4), 641-650. doi:10.1037/0022-3514.57.4.641
- Soto, C. J., & John, O. P. (2017). Short and extra-short forms of the big five Inventory–2: The BFI-2-S and BFI-2-XS. *Journal of Research in Personality*, 68, 69-81. doi:10.1016/j.jrp.2017.02.004
- Spencer, S. J., Zanna, M. P., & Fong, G. T. (2005). Establishing a causal chain: Why experiments are often more effective than mediational analyses in examining psychological processes. *Journal of Personality and Social Psychology*, 89(6), 845-851. doi:10.1037/0022-3514.89.6.845

- Sperber, D., & Baumard, N. (2012). Moral reputation: An evolutionary and cognitive perspective. *Mind & Language*, 27, 495–518. <http://dx.doi.org/10.1111/mila.12000>.
- Statistics Canada. (2019). Charitable Donors, 2017. Retrieved from <https://www150.statcan.gc.ca/n1/en/daily-quotidien/190208/dq190208c-eng.pdf?st=NdO30xxB>
- Stebbins, E., & Hartman, R. L. (2013). Charity brand personality: Can smaller charitable organizations leverage their brand's personality to influence giving. *International Journal of Nonprofit and Voluntary Sector Marketing*, 18(3), 203-215. doi:10.1002/nvsm.1468
- Stieler, M., & Germelmann, C. C. (2016). The ties that bind us: Feelings of social connectedness in socio-emotional experiences. *Journal of Consumer Marketing*, 33(6), 397-407. doi:10.1108/JCM-03-2016-1749
- Strahilevitz, M. A., & Loewenstein, G. (1998). The effect of ownership history on the valuation of objects. *Journal of Consumer Research*, 25(3), 276-289. doi:10.1086/209539
- Stroup, R. L. (2000). Free riders and collective action revisited. *The Independent Review*, 4(4), 485-500. doi:10.4324/9780203878460-30
- Swann, J., W B, Stein-Seroussi, A., & McNulty, S. E. (1992). Outcasts in a white-lie society: The enigmatic worlds of people with negative self-conceptions. *Journal of Personality and Social Psychology*, 62(4), 618-624. doi:10.1037//0022-3514.62.4.618
- Taylor, S. E., Wayment, H. A., & Carrillo, M. (1996). Social comparison, self-regulation, and motivation. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition. Handbook of motivation and cognition, Vol. 3. The interpersonal context* (pp. 3-27). New York, NY, US: The Guilford Press.
- Tesser, A., & Rosen, S. (1975). The reluctance to transmit bad news. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 8, pp. 193–232). San Diego, CA: Academic Press
- Thaler, R. H., & 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), 643-660. doi:10.1287/mnsc.36.6.643
- Thaler, R. H., & Shefrin, H. M. (1981). An economic theory of self-control. *Journal of Political Economy*, 89(2), 392-406. <http://dx.doi.org/10.1086/260971>

- Thoemmes, F. (2015). Reversing arrows in mediation models does not distinguish plausible models. *Basic and Applied Social Psychology: Disadvantages of Mediation Analyses in Basic or Applied Social Psychology*, 37(4), 226-234. doi:10.1080/01973533.2015.1049351
- Thoman, D. B., Sansone, C., Fraughton, T., & Pasupathi, M. (2012). How students socially evaluate interest: Peer responsiveness influences evaluation and maintenance of interest. *Contemporary Educational Psychology*, 37(4), 254-265. doi:10.1016/j.cedpsych.2012.04.001
- Tofighi, D. & MacKinnon, D. P. (2011). RMediation: An R package for mediation analysis confidence intervals. *Behavior Research Methods*, 43(3), 692-700. doi:10.3758/s13428-011-0076-x
- Toppe, C., Kirsch, A., and Michel, J. *Giving and Volunteering in the United States: Findings from a National Survey, 2001*. Washington, D.C.: Independent Sector, 2002.
- Touré-Tillery, M., & Fishbach, A. (2017). Too far to help: The effect of perceived distance on the expected impact and likelihood of charitable action. *Journal of Personality and Social Psychology*, 112(6), 860-876. doi:10.1037/pspi0000089
- Tsvetkova, M., & Macy, M. W. (2014). The social contagion of generosity. *PLoS One*, 9(2), e87275-e87275. doi:10.1371/journal.pone.0087275
- Turban, D. B., & Jones, A. P. (1988). Supervisor-subordinate similarity: Types, effects, and mechanisms. *Journal of Applied Psychology*, 73(2), 228-234. doi:10.1037/0021-9010.73.2.228
- Turner, J. C. (1991). *Mapping social psychology series. Social influence*. Belmont, CA, US: Thomson Brooks/Cole Publishing Co.
- van Rompay, Thomas Johannes Lucas, Vonk, D., & Fransen, M. L. (2009). The eye of the camera: Effects of security cameras on prosocial behavior. *Environment and Behavior*, 41(1), 60-74. doi:10.1177/0013916507309996
- Wagenmakers, E. J. (2007). A practical solution to the pervasive problems of *p* values. *Psychonomic Bulletin & Review*, 14(5), 779-804.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063-1070. doi:10.1037/0022-3514.54.6.1063

- Wayne, S. J., & Ferris, G. R. (1990). Influence tactics, affect, and exchange quality in supervisor-subordinate interactions: A laboratory experiment and field study. *Journal of Applied Psychology*, *75*(5), 487-499. doi:10.1037/0021-9010.75.5.487
- Weinstein, N., & Ryan, R. M. (2010). When helping helps: Autonomous motivation for prosocial behavior and its influence on well-being for the helper and recipient. *Journal of Personality and Social Psychology*, *98*(2), 222-244. doi:10.1037/a0016984
- Whillans, A. V. (2016). A Brief Introduction to the Science of Fundraising. *Council for Advancement and Support of Education*. New York, NY.
- Whillans, A. V., Dunn, E. W., Sandstrom, G. M., Dickerson, S. S., & Madden, K. M. (2016). Is spending money on others good for your heart? *Health Psychology : Official Journal of the Division of Health Psychology, American Psychological Association*, *35*(6), 574-583. doi:10.1037/hea0000332
- Whillans, A. V., Aknin, L. B., Ross, C. J., Chen, L., & Chen, F. S. (2019). Common variants of the oxytocin receptor gene do not predict the positive mood benefits of prosocial spending. *Emotion*, doi:10.1037/emo0000589
- White, K., & Lehman, D. R. (2005). Culture and social comparison seeking: The role of self-motives. *Personality and Social Psychology Bulletin*, *31*(2), 232-242. doi:10.1177/0146167204271326
- Wiepking, P., & Bekkers, R. (2010). Does who decides really matter? causes and consequences of personal financial management in the case of larger and structural charitable donations. *Voluntas: International Journal of Voluntary and Nonprofit Organizations*, *21*(2), 240-263.
- Wiesenthal, D. L., Austrom, D., & Silverman, I. (1983). Diffusion of responsibility in charitable donations. *Basic and Applied Social Psychology*, *4*(1), 17-27. doi:10.1207/s15324834basp0401_2
- Willer, R. (2009). Groups reward individual sacrifice: The status solution to the collective action problem. *American Sociological Review*, *74*, 23-43. doi:10.1177/000312240907400102
- Wu, J., Balliet, D., & Van Lange, P. A. M. (2016). Reputation management: Why and how gossip enhances generosity. *Evolution and Human Behavior*, *37*(3), 193-201. doi:10.1016/j.evolhumbehav.2015.11.001
- Xu, X., Lewandowski, G. W., & Aron, A. (2016). The self-expansion model and optimal relationship development. (pp. 79-100) Cambridge University Press. doi:10.1017/CBO9781316212653.005

- Yörük, B. K. (2010). Charitable giving by married couples revisited. *The Journal of Human Resources*, 45(2), 497-516. doi:10.1353/jhr.2010.0008
- Yörük, B. K. (2014). Does giving to charity lead to better health? Evidence from tax subsidies for charitable giving. *Journal of Economic Psychology*, 45, 71-83. doi:10.1016/j.joep.2014.08.002
- Zagefka, H., Noor, M., & Brown, R. (2013). Familiarity breeds compassion: Knowledge of disaster areas and willingness to donate money to disaster victims. *Applied Psychology*, 62(4), 640-654. doi:10.1111/j.1464-0597.2012.00501.x
- Zahavi, A. (1995). Altruism as a handicap: The limitations of kin selection and reciprocity. *Journal of Avian Biology*, 26(1), 1-3. doi:10.2307/3677205
- Zaki, J., & Mitchell, J. P. (2011). Equitable decision making is associated with neural markers of intrinsic value. *Proceedings of the National Academy of Sciences of the United States of America*, 108(49), 19761-19766. doi:10.1073/pnas.1112324108
- Zellermayer, O. (1996). *The pain of paying*. (Unpublished dissertation). Department of Social and Decision Sciences, Carnegie Mellon University, Pittsburgh, PA.
- Zhao, H., Jin, B., Liu, Q., Ge, Y., Chen, E., Zhang, X., & Xu, T. (2019). Voice of charity: Prospecting the donation recurrence & donor retention in crowdfunding. *IEEE Transactions on Knowledge and Data Engineering*, 1-1. doi:10.1109/TKDE.2019.2906199
- Zhao, X., Lynch, J., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research*, 37(2), 197-206. doi:10.1086/651257

Appendix A

Supplementary Methods (Study 1)

Additional exploratory measures

I included a number of exploratory measures to examine the impact of collaborative giving (see Table A1 for scales, sample items, and reliability). Measures of personality were included at baseline, including extraversion, agreeableness, and neuroticism. Several measures were assessed both at baseline and at post-donation, including negative affect, generalized social connectedness, and moral identity. A battery of measures were included on the post-donation questionnaire, including questions assessing participants': (1) thoughts and engagement with the ad; (2) satisfaction with and perceived autonomy¹³ over their donation decision; and (3) the degree to which they used reason- vs emotion-based reasoning in making their donation decision¹⁴. Additionally, I created several face valid items to assess how generous participants were in the past year and what they thought about the BCCHF; specifically, how deserving of the participant's donation the charity was, how personally connected they felt to the charity, and how much they valued the charity's services. Finally, participants in the *collaborative giving* condition completed an additional scale assessing how cooperative they were with their study partner when making the donation decision.

Supplementary Results (Study 1)

I conducted a series of NANOVA analyses to test whether there was any impact of condition upon my additional exploratory outcomes. As seen in Table A2, I observed

¹³ The three-item measure of perceived choice or autonomy demonstrated poor reliability ($\alpha = .47$). Removing one reverse-coded item (i.e., "I felt like we/I had to make our/my financial decision") improved reliability ($\alpha = .65$). However, as this 2-item measure still demonstrated questionable reliability, I did not conduct the analyses on the perceived choice outcome.

¹⁴ Participants in the *collaborative giving* condition additionally responded to questions assessing their beliefs in the degree to which their study partner used reason vs. emotion-based reasoning in making their donation decision.

no condition differences across the range of additional exploratory outcomes ($ps > .106$, $\eta_p^2 < .03$).

These null results provide several intriguing insights about collaborative giving. Specifically, compared to giving individually in the presence of an unacquainted peer, giving collaboratively with a peer may not reduce negative affect or enhance satisfaction with one's donation. Second, collaborative giving may not change how people engage in with charitable appeals or think about charitable organizations. Third, collaborative giving may not change how much people rely upon their reason (vs. emotion) when making donation decisions. Fourth, while collaborative giving may foster social bonds between peers, it may not produce a generalized sense of social connection with others. Finally, a single collaborative giving experience with an unacquainted peer may not be enough to shift people's self-concept in how generous or caring they view themselves.

Supplementary Methods (Study 2)

Additional exploratory outcomes

I included a number of additional exploratory measures in Study 2. First, as a potential proxy for social pressure, I included measures assessing norms at various levels. Specifically, I created several face-valid measures to assess perceptions around the descriptive, injunctive, and local (i.e., dyadic) norms around charitable giving among study participants. First, participants specified what they believed to be the descriptive and injunctive norms around giving in the study. Specifically, participants indicated what percentage of study participants they believed *would* (i.e., descriptive) and *should* (i.e., injunctive) be willing to donate. Similarly, participants indicated how much of the \$5 study payment, on average, they believed that other participants likely would or should give. Second, across three separate items, participants indicated to what extent they believed that their donation behaviour was influenced by what they thought others *would*, *did*, or *should* give, respectively (1 – *Not at all*; 7 – *Very much*). Third, participants rated to what extent they believed their donation was influenced by how their study partner made their donation. Participants additionally indicated the extent to which their study

partner influenced the participant to make 1) a larger donation and 2) as a smaller donation (1 – *Not at all*; 7 – *Very much*).

One reason that people act generously is because acting charitable can confer reputational benefits (Buss, 1989; Hardy & van Vugt, 2006; Jordan, Hoffman, Nowak, & Rand, 2016; Klein, Grossman, Uskul, Kraus, & Epley, 2015; Roberts, 1998). Often, the people who are most concerned with maintaining a positive reputation with others are susceptible to social pressure to act generously when donating in public contexts (e.g. Piazza & Bering, 2008; Sperber & Baumard, 2012; Wu, Balliet, Van Lange, 2016). Thus, as another alternative proxy to social pressure, I developed three face-valid items to assess impression management motivations. Specifically, using a 7-point scale, participants rated the extent to which they thought that their donation decision was motivated by a desire to look good to others, specifically, 1) their study partner, 2) the researchers, and 3) people in general.

Finally, I considered whether two closely related constructs – diffusion of responsibility and free-riding – may have led people to give less generally. To do so, I developed one face-valid item to assess the extent to which participants engaged in either free riding or diffusion of responsibility by asking, “*How did your expectations of others’ behaviour influence your donation decision?*” Participants could choose among four response options to indicate whether they gave *less* or *more* money because they thought that others were giving *more* or *less* (e.g., “We gave less because we thought others were giving more.”). Participants could also indicate that they engaged in none of these by selecting “None of the above.” However, approximately 70% of the sample selected “none of the above” option, precluding a meaningful test of the question.

Supplementary Results (Study 2)

Norms

Main effect analyses

Prior to conducting any mediation analyses, I conducted a series of exploratory non-directional NANOVA tests with LSD pairwise comparisons to explore whether there

were any condition differences in the descriptive, injunctive, and local (i.e., dyadic) norms around generosity. Overall, I observed little difference in the various norm measures across conditions (see Table A3 for means and a summary of all analyses). However, there were three notable exceptions.

First, analyses revealed significant differences across conditions in beliefs about the descriptive norm around giving—that is, the percent of study participants who *would* be willing to donate in the study. Pairwise comparisons revealed that participants in the *collaborative giving* condition reported that a similar number of study participants would be willing to donate compared to the *independent giving* condition, but a significantly higher number than participants in the *private giving* condition (see Table A3). Participants in the *independent* and *private giving* conditions did not differ in their beliefs. These results suggest that, compared to receiving no social information about how others give (i.e., *private giving* condition), discussing and making a donation together with a peer may help establish a norm that other people are more willing to give.

Second, analyses revealed significant differences across conditions in participants' beliefs about how their donation decision was influenced by what others *did* or *should* give (see Table A3). Similar to the above, pairwise comparisons revealed that *collaborative giving* participants reported similar beliefs as participants in the *independent giving* condition, but stronger beliefs than participants in the *private giving* condition that their donation was influenced by what others did or should give (see Table A3). Participants in the *independent giving* condition did not differ from *private giving* participants in their beliefs that their donation decision was influenced by what other *should* give. However, participants in the *independent giving* condition believed largely that their donation was influenced by what others *did* give than participants in the *private giving* condition. Taken together, these results suggest that compared to receiving no social information about how others give (i.e., *private giving* condition), discussing and making a donation together with a peer may establish a descriptive and injunctive norm which people believe shaped their donation decisions. Moreover, compared to giving in private, being in the presence of a peer and being able to observe how they give may

create a descriptive norm around giving which people believe shaped their donation decision.

Finally, analyses revealed significant differences across conditions in participants' beliefs about how their donation was influenced by the local (i.e., dyadic) norms to give. That is, the extent to which participants believed their study partner influenced them to give a larger donation, a smaller donation, or influenced their donation decision in general (see Table A3). Pairwise comparisons revealed that participants in the *collaborative giving* condition believed to a greater extent that their study partner influenced their donation decision—each in giving a larger donation, a smaller, and in general—than both participants in the *independent* and *private giving* conditions (see Table A3). Similarly, participants in the *independent giving* condition believed to a greater extent that their study partner influenced them to give a larger donation or influenced their donation decision in general than participants in the *private giving* condition. Overall, these results highlight that people believed that the norms set by their peers had a meaningful social influence over their own donation decisions when giving in a social context. Not only for those with the opportunity to discuss and come to a mutual giving decision, but also for those who were merely in the social presence of others.

Mediation analyses

Following the significant pairwise comparisons I observed in the above tests, I conducted multilevel mediation analyses to test whether collaborative giving may boost generosity through descriptive, injunctive, and/or local (i.e., dyadic) norm. I found no evidence of an indirect effect concerning the injunctive norms. Similarly, across the local (i.e., dyadic) norms, comparing participants in the *collaborative giving* and *independent giving* conditions yielded null effects. However, I did find an interesting pattern of results comparing *collaborative giving* participants with *private giving* participants for both the descriptive and local (i.e., dyadic) norms.

First, analyses revealed a significant indirect effect through beliefs in the descriptive norm around giving in the study (i.e., the percent of participants willing to donate in the study), *indirect effect* = .20, 95%CI [.06, .39]. Specifically, participants in

the *collaborative giving* (vs. *private giving*) condition reported that a greater percent of study participants would be willing to donate which, in turn, was associated with giving *more* generously. However, I also observed a significant indirect effect in the opposite direction through beliefs that one's donation was influenced by what they thought others did give, *indirect effect* = -.10, 95% CI [-.23, -.00]. That is, participants in the *collaborative giving* (vs. *private giving*) condition reported that their donation was influenced to a greater extent by what they thought others did give, which in turn, was associated with giving *less* generously. Taken together, these findings suggest that collaborative giving may boost generosity by providing descriptive information that normalizes people's willingness to donate but may also decrease generosity to the extent that people believe their donation was influenced by others' behaviour.

Second, I observed that collaborative giving may reduce generosity through local (i.e., dyadic) norms. Specifically, participants in the *collaborative giving* (vs. *private giving*) condition reported that way their study partner made their donation influenced their own donation to a greater extent in general, which in turn, was associated with giving less generously, *indirect effect* = -.31, 95% CI [-.59, -.06]. Similarly, participants in the *collaborative giving* (vs. *private giving*) condition reported that their study partner influenced them to a greater extent to give a smaller donation, which in turn, was associated with giving less generously, *indirect effect* = -.31, 95% CI [-.59, -.06]. Taken together, these results suggest that compared to giving in complete isolation, giving collaboratively with a peer may have an adverse effect on generosity to the extent that one's peer establishes a norm to give less generously or a norm that socially pressures participants in general.

Impression management

Main effect analyses

Giving collaboratively with others may boost generosity because collaborative giving could heighten people's motivations to look good through generous action. Prior to conducting mediation analyses, I conducted non-directional NANOVA tests with LSD pairwise comparisons to explore whether there were any condition differences in

motivations to look good to others—either their study partner, the researchers, or others in general. Analyses revealed that participants in the *collaborative giving* condition reported their donation decision was motivated by a greater desire to look good to their study partner than participants in the *independent* or *private giving* conditions (see Table A3). Similarly, participants in the *collaborative giving* condition reported that their donation was motivated by a greater desire to look good to others in general than participants in the *independent giving* condition, but not participants in the *private giving* condition. Participants in the *independent giving* condition did not differ significantly from participants in the *private giving* condition, either. Taken together, these results suggest that, compared to making an individual giving decision, making a collaborative giving decision may heighten impression management concerns, particularly towards peers in one’s immediate social context.

Mediation analyses

Following the significant pairwise comparisons I observed in the above tests, I conducted multilevel mediation analyses to test whether collaborative giving may boost generosity through impression management motivations towards a peer in one’s immediate social context or others in general. I observed no significant indirect effects across analyses, suggesting that giving collaboratively with a peer (vs. independent in or out of the presence of a peer) may not boost generosity through heightened concerns to look good to others, including peers in one’s immediate social context or others in general.

Tables (Appendix)

Table A1. Additional Exploratory Measures (Study 1).

Baseline Only Measures					
Measure	Source	Cronbach's α	N of items	Sample item(s)	Response Options
Extraversion		.75	6	I am someone who... ...is dominant, acts as a leader	
Agreeableness	Big Five Inventory–2 Short Form (Soto & John, 2017)	.69	6	I am someone who... ...is compassionate, has a soft heart	1-Disagree strongly 5-Agree strongly
Neuroticism		.79	6	I am someone who... ...tends to feel depressed, blue	
Baseline/Post Donation Measures					
Measure	Source	Cronbach's α BL; PD	N of items	Sample item(s)	Response Options
Negative Affect	PANAS; Watson et. al, 1998	.86; .80	10	Indicate how you are feeling right now with respect to each of these words... ...Distressed ...Upset ...Guilty	1-Very slightly or not at all 2-A little 3-Moderately 4-Quite a bit 5-Extremely
Social connectedness	Social Connectedness Scale; Lee, Draper, & Lee, 2001	.90; .91	8	Right now...I feel close to people	1-Strongly Disagree 7-Strongly Agree
Moral Identity	Stets & Carter, 2012	.75; .84	10	For each pair of characteristics, circle the number on the scale you believe best describes you... ...Stingy/Generous	1-Stingy 5-Generous

Post Donation Only Measures					
Measure	Source	Cronbach's α	N of items	Sample item(s)	Response Options
Ad Evaluation	Chang & Lee, 2009; Bennett, 2015	.87	11	I thought the advertisement was... ...interesting	1-Not at all 7-Very much
Ad engagement	Martin, Gnoth, & Strong, 2009	.81	3	As I was watching the advertisement, I was... ...very uninvolved/ involved	1-Very uninvolved 7-Very involved
Ad involvement	Laroche, Bergeron, & Goutaland, 2003	.90	4	I perceived the advertisement as... ...(In)Significant	1-Insignificant 7-Significant
Satisfaction with donation decision	Fisher & Grégoire, 2006	.94	4	I am very satisfied with the financial decision we made. *	1-Strongly Disagree 7-Strongly Agree
Perceived Choice	Intrinsic Motivation Inventory (IMI) Ryan, 1982 [Adapted]	.47	3	I believe I had some choice in how we made our financial decision. *	1-Not at all true 4-Somewhat true 7-Very true
Charity deserving of donation	Face valid	-	1	I believe the B.C. Children's Hospital Foundation is deserving of our financial support for their charitable work. *	
Personal connection to charity	Face valid	-	1	I have a personal connection to the work being done by the B.C. Children's Hospital Foundation	1-Not at all 7-Very much
Value in charity	Face valid	-	1	I value the charitable work being done by the B.C. Children's Hospital Foundation	

Post Donation Only Measures

Measure	Source	Cronbach's α	N of items	Sample item(s)	Response Options
Rational (vs emotional) decision making (personal)	Levine et al., 2018	.76	3	To what extent did you rely on your <u>reason</u> when making the joint financial decision?	1-Not at all 7-A great deal
Partner's rational (vs. emotional) decision making (<i>collaborative giving</i> only)		.58	3	To what extent did your partner rely on their <u>reason</u> when making the joint financial decision?	
Past generosity	Face valid	-	1	Approximately how much of your own money have you given to charity in the past year?	Open response
Cooperative Behaviour (collaborative giving only)	Fisher & Grégoire, 2006 plus two face valid items	.90	8	When we were making our decision, my study partner and I...cooperated when we made the decision.	1-Strongly Disagree 7-Strongly Agree

Note: BL: Baseline. PD: Post-donation. *The wording of these items differed for the independent giving condition, which was adapted slightly to match the individual nature of the donation task for these participants (e.g., My vs Our; I vs. We; The other participant vs Study Partner).

Table A2. Summary of analyses for the additional exploratory outcomes (Study 1).

Measure	Independent Giving <i>M</i> (<i>SD</i>); N=100	Collaborative Giving <i>M</i> (<i>SD</i>); N=102	<i>F</i> _{Condition,}	<i>p</i>	η_p^2 [90%CI]
Post-donation Negative Affect [†]	1.56 (.52)	1.42 (.38)	<i>F</i> (1,99) = 1.07	.302	.01 [.00, .07]
Post-donation Social Connectedness	4.83 (1.26)	5.11 (1.16)	<i>F</i> (1,99) = 2.45	.121	.02 [.00, .09]
Post-donation Moral Identity	4.09 (.51)	4.21 (.52)	<i>F</i> (1,99) = 2.67	.106	.03 [.00, .10]
Ad Evaluation	5.43 (0.92)	5.44 (0.87)	<i>F</i> (1,99) = .00	.952	.00 [.00, .00]
Ad engagement	5.29 (1.35)	5.43 (1.19)	<i>F</i> (1,99) = .50	.481	.01 [.00, .05]
Ad involvement	5.87 (0.97)	5.80 (1.10)	<i>F</i> (1,99) = .161	.689	.00 [.00, .04]
Satisfaction with donation decision	6.32 (1.02)	6.39 (1.07)	<i>F</i> (1,99) = .25	.619	.00 [.00, .04]
Charity deserving of donation	6.29 (1.10)	6.43 (.92)	<i>F</i> (1,99) = .85	.358	.01 [.00, .06]
Personal Connection to Charity	3.57 (2.39)	3.51 (2.36)	<i>F</i> (1,99) = .03	.862	.00 [.00, .02]
Value in Charity	6.27 (1.10)	6.32 (1.03)	<i>F</i> (1,99) = .11	.737	.00 [.00, .03]
Rational (vs emotional) decision making (personal)	4.20 (1.37)	4.15 (1.05)	<i>F</i> (1,99) = .06	.800	.00 [.00, .03]

Note: [†] Controls for relevant baseline affect and generosity.

Table A3. Summary of analyses for additional exploratory outcomes (Study 2).

Measure	Collaborative Giving [N=102] <i>M (SD)</i>	Independent Giving [N=104] <i>M (SD)</i>	Private Giving [N=104] <i>M (SD)</i>	Omnibus $F_{\text{Condition}^\dagger}$	<i>p</i>	η_p^2 [90%CI]
Negative Affect ^{††} (PANAS)	1.33 ^{a,b} (.42)	1.37 ^{a,c} (.45)	1.33 ^{b,c} (.43)	$F(2, 151.84) = .20$	.819	.00 [.00, .02]
Negative Emotion ^{††} (SPANE)	7.52 ^{a,b} (2.98)	7.72 ^{a,c} (3.03)	7.60 ^{b,c} (2.41)	$F(2, 152.16) = .08$	.924	.00 [.00, .01]
Percent of other study participants who <i>would</i> be willing to donate [DN]	84.34 ^a (13.44)	80.41 ^{a,c} (16.99)	78.13 ^c (15.27)	$F(2, 151) = 3.96$	.021	.05 [.00, .11]
Percent of other study participants who <i>should</i> be willing to donate [IN]	84.36 ^{a,b} (27.81)	87.52 ^{a,c} (23.24)	81.38 ^{b,c} (26.11)	$F(2, 151) = 1.43$	.242	.02 [.00, .06]
Expected average donation of other participants [DN]	3.27 ^a (1.10)	3.31 ^a (1.31)	2.97 (1.13)	$F(2, 151) = 1.98$	.142	.03 [.00, .07]
Expected average donation other participants <i>should</i> donate [IN]	3.58 ^{a,b} (1.60)	3.69 ^{a,c} (1.54)	3.55 ^{b,c} (1.60)	$F(2, 151) = .20$	.819	.00 [.00, .02]
Beliefs that donation was influenced by what others <i>would</i> give [DN]	2.25 ^a (1.88)	2.08 ^{a,c} (1.68)	1.74 ^c (1.25)	$F(2, 151) = 2.37$	.097	.03 [.00, .08]
Beliefs that donation was influenced by what others <i>did</i> give [DN]	2.07 ^a (1.67)	2.05 ^a (1.70)	1.55 (1.07)	$F(2, 151) = 3.64$	.029	.05 [.00, .10]
Beliefs that donation was influenced by what others <i>should</i> give [IN]	4.30 ^a (2.29)	3.77 ^{a,c} (2.49)	3.25 ^c (2.38)	$F(2, 151) = 5.29$	.006	.07 [.01, .13]

Measure	Collaborative Giving [N=102] <i>M (SD)</i>	Independent Giving [N=104] <i>M (SD)</i>	Private Giving [N=104] <i>M (SD)</i>	Omnibus $F_{\text{Condition}}$	p	η_p^2 [90%CI]
Beliefs that one's peer influenced the participant's donation <i>in general</i> [LN]	3.08 (2.19)	2.13 (1.77)	1.37 (.98)	$F(2, 151.59) = 20.16$	< .001	.21 [.12, .29]
Beliefs that one's peer influenced the participant to give <i>larger</i> donation [LN]	2.40 (2.02)	1.81 (1.60)	1.28 (.80)	$F(2, 151) = 11.68$	< .001	.13 [.05, .21]
Beliefs that one's peer influenced the participant to give <i>smaller</i> donation [LN]	1.75 (1.49)	1.37 ^c (1.00)	1.16 ^c (.58)	$F(2, 151) = 6.48$	.002	.08 [.02, .15]
Donation motivated by desire to look good to <i>peer</i>	2.75 (2.03)	2.01 ^c (1.45)	1.67 ^c (1.17)	$F(2, 151) = 12.04$	< .001	.14 [.06, .22]
Donation motivated by desire to look good to <i>the researchers</i>	2.38 ^{a,b} (1.81)	2.13 ^{a,c} (1.56)	2.43 ^{b,c} (1.71)	$F(2, 151) = .96$	.387	.01 [.00, .05]
Donation motivated by desire to look good to <i>others in general</i>	2.79 ^b (1.92)	2.20 ^c (1.45)	2.43 ^{b,c} (1.60)	$F(2, 151) = 3.61$	.029	.05 [.00, .10]

Notes. ^{a-c} Means which share a common superscript do not differ ($p > .05$). DN: Descriptive Norm. IN: Injunctive Norm. LN: Local (i.e. Dyadic) Norm. All comparisons are non-directional (two-tailed). [†] Degrees of freedom were approximated using the Satterthwaite approach. ^{††}Analyses control for baseline happiness.

Appendix B

Print Advertisement (Study 2)



BC Children's Hospital Foundation partners with kids, families, health professionals, and hundreds of thousands of British Columbians to raise funds to improve and advance care at BC Children's Hospital, its research institute, and Sunny Hill Health Centre for Children.