Chapter 4

Doing Good and Feeling Good: Relationships Between Altruism and Well-being for Altruists, Beneficiaries, and Observers

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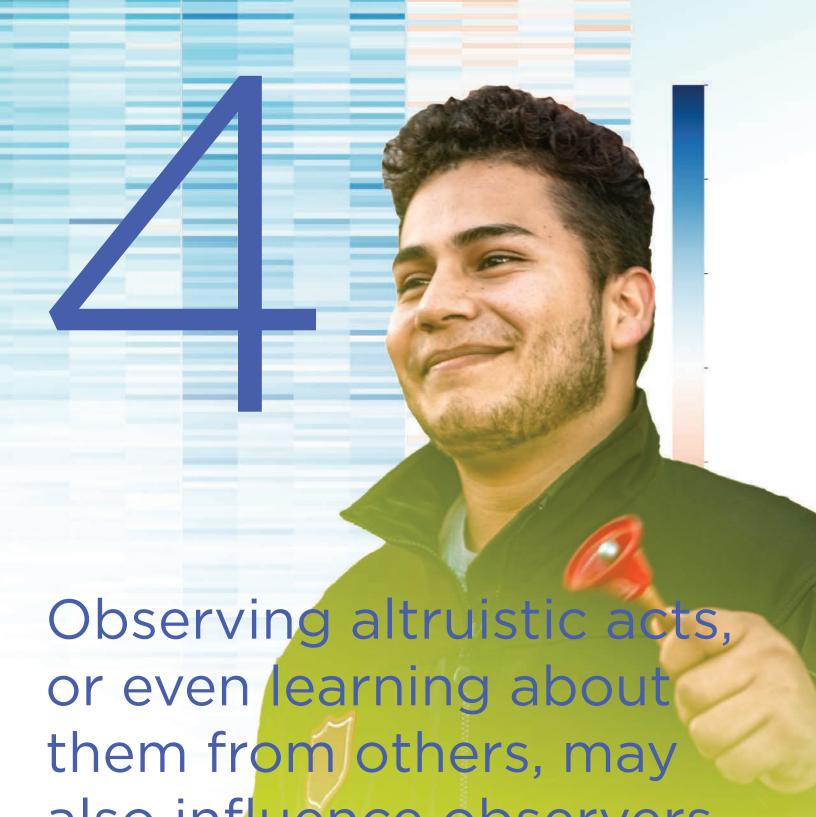
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also influence observers to be more altruistic in their future interactions.

Introduction

The years 2020 and 2021 brought seismic changes to the emotional and social lives of people around the globe as an unprecedented global pandemic catalyzed various forms of social, political, and economic upheaval and unrest. But unanticipated positive changes were documented as well during this period¹. One that has garnered relatively little attention was a surge in various forms of prosocial behavior around the globe. Relative to the years leading up to the pandemic, in 2020-21 more people around the globe reported that they had donated to charity, volunteered, or helped a stranger during the prior month.² Countless people in need of assistance undoubtedly benefited from this increase in prosocial behaviors—with likely impacts on global well-being.

What spurred this surge in prosociality and what were its possible outcomes? Answering these questions requires the consideration of altruism, what motivates it, and what its downstream consequences are. Altruism includes any act that is aimed at improving another's well-being.³ The motives that drive specific behaviors in the social world can be difficult to determine conclusively, but acts of altruism can usually be identified as such when they are costly to the actor and do not bring them any foreseeable extrinsic benefit.4 For example, when a person anonymously gives money to someone in need, they knowingly forfeit resources and do not stand to gain in any concrete way, suggesting altruistic motives. Given widespread beliefs that people's behavior is usually driven by selfish motives,⁵ the fact that unselfish altruistic acts like these are nonetheless ubiquitous around the world is noteworthy.

One reason for the ubiquity of altruism may be that it *does* bring benefits of various kinds, not only to the intended beneficiary, but to altruists themselves and perhaps to third parties as well. Research has documented that altruism improves the subjective well-being of actors⁶ and even observers.⁷ This positive association between altruism and well-being appears to be bidirectional,⁸ as happier people have also been observed to engage in more altruism.⁹

This chapter will explore the nature of the bidirectional relationship between altruism and well-being. We begin by first defining altruism. Second, we review the data demonstrating a bidirectional association between prosociality and well-being for actors, recipients, and observers (noting that many studies on this topic are correlational, which limits causal inferences in some cases). We will also review the conditions under which this relationship is observed. Finally, we consider some of the many unanswered questions between altruism and well-being.

What is Altruism?

Before considering the relationship between well-being and altruism, it is important to situate altruism within the broader category of prosocial behaviors. Prosocial behaviors include a wide range of behaviors that bring social benefits but result from a variety of circumstances and motivations. The results of two recent research studies indicate that the many varieties of prosocial behavior can be roughly grouped into three types: altruism, cooperation, and fairness (or equity).¹⁰ Altruism refers to behaviors that benefit another person or alleviate their distress without any foreseeable extrinsic benefit—and often a cost—to the actor and without an expectation of anything in return. 11 In many instances, altruism reflects the fact that the altruist genuinely values the welfare of the beneficiary, such that they intrinsically want to improve their well-being.¹² Common forms of altruism include volunteering, donating money, and donating blood. So-called extraordinary forms of altruism include extremely non-normative acts that are risky or costly, such as heroic rescues or donating bone marrow or an organ to a stranger.¹³

In contrast to altruism, cooperation is prosocial behavior performed in the context of an exchange, such as when two or more actors are working toward a common goal. Thus, cooperation is performed with the expectation that everyone will benefit. Cooperation may reflect sacrificing resources in the short-term, but typically only to pay back the beneficiary or in the expectation that the beneficiary will reciprocate in the future. Common forms of cooperation include friends



taking turns paying for meals or sports teammates helping each other practice their skills.

Finally, fairness (or equity) reflects prosocial behavior motivated by the goal of adhering to desirable norms, such as equitable outcomes. Fairness may reflect sacrificing resources, typically not to alleviate distress or suffering or in anticipation of future benefits, but to achieve outcomes that are considered equitable or just for everyone. Common forms of fairness involve dividing a shared resource equally—for example, friends dividing a shared meal into equal portions or roommates sharing their limited space equally.

It is important to distinguish among these forms of prosociality because they occur in different contexts and are promoted by different neural and cognitive processes.¹⁴ Thus, each form of prosocial behavior is likely to have variable effects on social and emotional outcomes. Although cooperation and fairness may promote (or be

promoted by) subjective well-being, a particularly robust literature links well-being to acts of altru-ism—including a wide range of non-obligatory, non-reciprocal behaviors such as volunteering, making charitable donations, helping strangers, donating blood, donating bone marrow, or donating an organ. In this chapter, we focus exclusively on the link between altruism and well-being.

Positive Associations Between Altruism and Subjective Well-Being

A wealth of research now demonstrates that altruism is often positively correlated with subjective well-being, which comprises both high life satisfaction and experiencing more positive emotions and fewer negative emotions in daily life. Two recent global investigations have found this at both the geographic and individual level using data collected from countries around the world.

One approach examines correlations across countries, which determines the impact of different cultures. In one such study,16 the researchers conducted a global investigation that compiled country-level data regarding seven forms of altruism collected in 152 countries. The forms of altruism included data collected by Gallup (donating money, volunteering, or helping strangers) as well as four altruistic behaviors drawn from other international databases. These included blood donations per capita. bone marrow donations per capita, living kidney donations per capita, and the humane treatment of non-human animals as evaluated by a global non-profit organization. The researchers also collected data on subjective well-being, including both life satisfaction and daily positive or negative affect. The results demonstrated that when subjective well-being at the national level (i.e., average life satisfaction and daily positive affect of respondents in a country) is higher, the prevalence of all seven forms of altruism is higher as well (Figure 4.1). This relationship was independently observed for life satisfaction and daily affect, except when life satisfaction and daily affect were included in the same statistical model. in which case only life satisfaction predicted altruism. Results indicated that improved objective well-being, including high levels of wealth and health, are associated with altruism because they lead to increased life satisfaction. Furthermore, these effects were most robust among countries high in the cultural value of individualism, which reflects highly valuing individuals' autonomy to pursue personal goals. This suggests that when individuals have more material and cultural resources to pursue altruistic goals, they are more likely to do so.

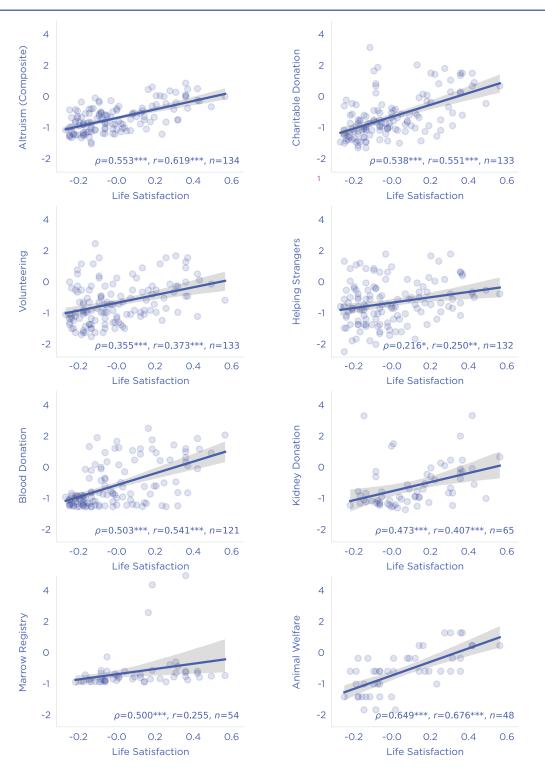
Another approach looks at correlations across individuals. In another study, the researchers compiled the data collected by Gallup between 2006 and 2017 from approximately 1.4 million people across 161 countries. Participants reported both their life satisfaction and daily positive or negative affect. They also reported whether they had engaged in three forms of altruism in the last month: donating money, volunteering, or helping strangers. Again, results showed that life satisfaction and positive (but not negative) daily affect were

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positively correlated with engaging in these altruistic behaviors.¹⁷ Although the magnitude of this positive association varied across countries, it was observed in the overwhelming majority of them, as can be seen from the fact that the correlations between life satisfaction and altruistic behaviors are almost without exception positive, as can be observed in **Figure 4.2**, (positive correlations are shown in blue) whereas the correlations between negative affect and altruism are mixed (negative relationships are shown in red, and no relationship is shown in white.



Figure 4.1: Relationship Between Life Satisfaction and Altruism Around the World



Note: Relationships between subjective well-being (mean-centered) and seven altruism variables (including the total for all altruism variables; z-scored)¹⁸, excluding countries without both altruism and well-being data. Each dot represents a country, lines indicate the best-fitting regression model, and ribbons represent 95% confidence intervals. Annotations report Spearman ρ , Pearson's r, and number of included countries (n). Asterisks indicate significant correlations (*p < .05, **p < .01, ***p < .001). Results indicate that around the world increased life satisfaction (subjective well-being) reliably relates to a greater frequency of seven different types of prosocial behavior.

Figure 4.2: Relationship Between Subjective Well-being and Generosity by Country

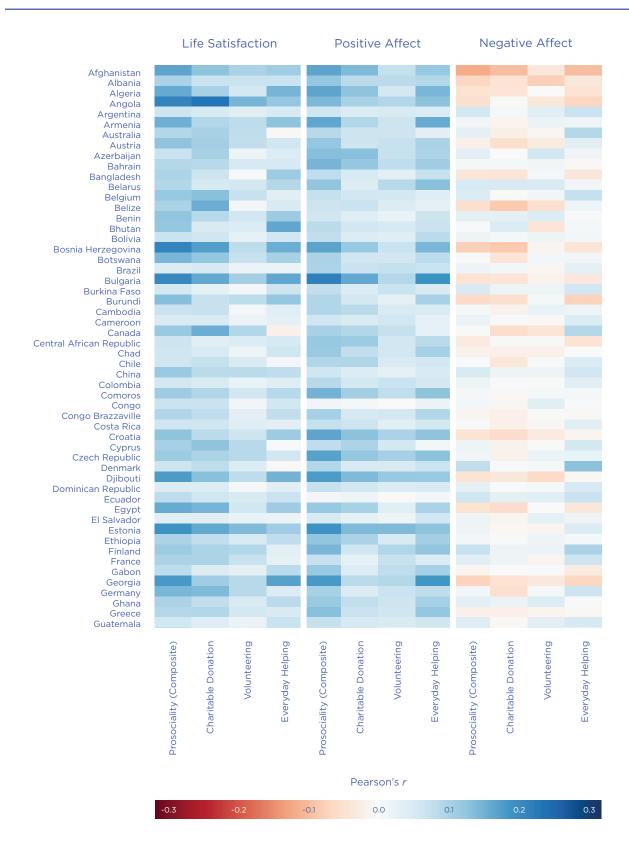


Figure 4.2: Relationship Between Subjective Well-being and Generosity by Country (continued)

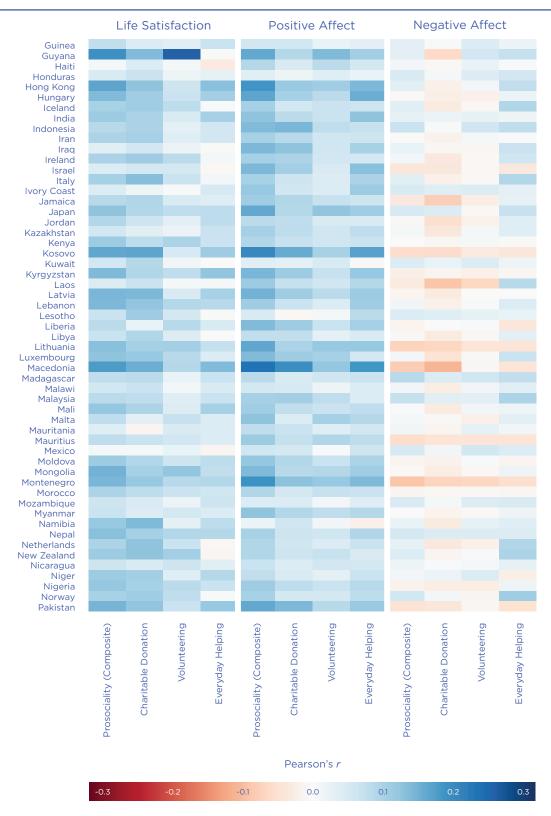
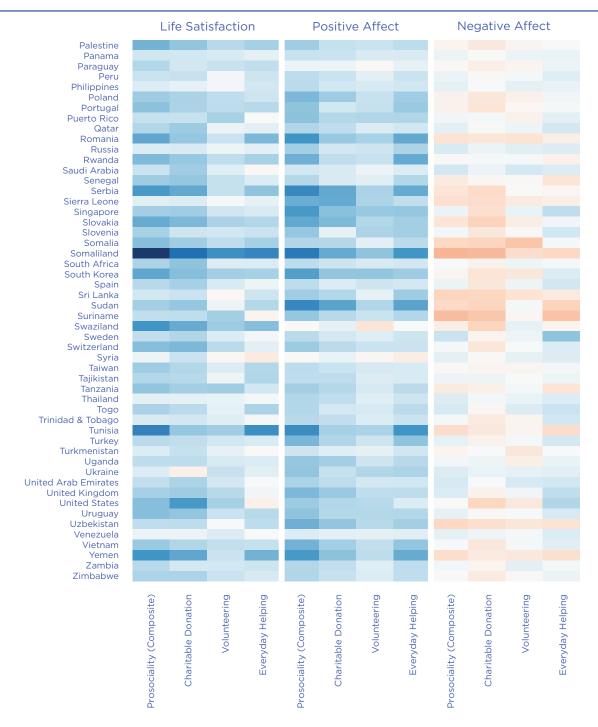


Figure 4.2: Relationship Between Subjective Well-being and Generosity by Country (continued)



Note: Heatmap indicates the strength and direction of the relationships between subjective well-being and prosociality across 161 countries. Fach row represents a country. Colormap indicates the Pearson's *r* correlation. Blue indicates stronger positive relationship. Red indicates a stronger negative relationship. Results indicate that around the world greater life satisfaction and positive affect reliably relate to increased prosocial behavior (bluer), while greater negative affect reliably relates to decreased prosocial behavior (redder).



Although these studies demonstrate a consistent positive relationship between well-being and altruism around the world on average, they cannot determine the causal nature of that relationship: Does altruism promote well-being, or does well-being promote altruism—or are the effects bidirectional? Also, does altruism increase well-being for the beneficiary, the altruist, or even third parties? We next explore studies aimed at distinguishing among these possibilities using more targeted examinations of the correlations between altruism and well-being, some of which also use experimental manipulations or longitudinal investigations in an effort to establish the causal directions of the observed effects.

Well-Being as an Outcome of Altruism

Effects of Altruism on Beneficiaries' Well-Being

Altruism is defined as an action intended to benefit the welfare of the recipient and so most acts of altruism should increase beneficiaries' well-being. Many forms of altruism are explicitly aimed at improving recipients' objective well-being, such as donating money to increase recipients' wealth or donating blood to improve their health. In addition to improving recipients' objective well-being, such acts can also improve their subjective well-being. A recent pre-registered study sponsored by the TED organization demonstrated this robust effect by redistributing \$2 million in total from philanthropists to recipients around the world. Adults in this study were recruited from Australia, Brazil, Canada, Indonesia,

Recipients of help also report that receiving help improved their trust in social relationships, empathy for others, and optimism about human nature.

Kenya, the United Kingdom, and the United States to take part in a "Mystery Experiment." Participants were randomly assigned to one of two conditions: a cash condition, in which they received a \$10,000 cash transfer that they were instructed to spend within three months, or a control condition, in which participants did not receive a cash transfer. Results demonstrated that the recipients of the cash transfer from anonymous donors reported greater subjective well-being (including greater life satisfaction and positive affect and lower negative affect) after receiving and spending these funds, with greater effects observed for recipients living in lower-income countries.

Other forms of altruism, such as offering to help someone who is lost or providing support for someone in distress, are aimed at improving subjective well-being. In general, people who receive such forms of help report subjective well-being benefits afterward, including greater well-being and self-esteem.²² Recipients of help also report that receiving help improved their trust in social relationships, empathy for others, and optimism about human nature.²³ This may be because altruistic acts like these promote social affiliation, which could stem from feelings of gratitude experienced by beneficiaries²⁴ but could also result from feelings of guilt or indebtedness.²⁵ Interestingly, altruistic actors seem to underestimate the positive effects of helping on beneficiaries' well-being.²⁶ In one recent study, people who were instructed to perform a "random act of kindness" consistently underestimated how much the act would be valued by recipients and how much it would improve their well-being.²⁷

A number of factors affect the degree to which (or whether) helping improves the well-being of the beneficiary, however. One is the relationship between the altruistic actor and the beneficiary. Most acts of altruism are performed by close others, including family members and close friends of the beneficiary.²⁸ This is unsurprising in light of established biological models of altruism, such as kin selection, which promotes preferentially helping genetic relatives, thereby improving the altruist's own evolutionary fitness. Kin-selected altruism is an evolutionarily selected bias across many species, including humans,²⁹ and can help account for the fact that the vast majority of altruism, including donations of money, time, blood, and organs, is performed to benefit family members.³⁰ Help provided to distant versus close others tends to take different forms, with help for strangers tending to be relatively spontaneous.³¹ Such help occurs more often in response to immediate distress or need and is thus more unambiguously altruistic than helping close friends or family, which is more often planned and may more often reflect reciprocity or equity-related motives. People may thus view help from family as relatively more obligatory,³² which may affect well-being to the extent people report lower life satisfaction and more negative affect when they do not receive the support they had expected to receive.33

Although helping relationships are inherently unequal, greater asymmetry between the altruist and beneficiary may also reduce the degree to which help improves well-being. When an altruist has a higher status than the beneficiary (for example, higher socioeconomic status), the beneficiary may experience more negative emotions related to feeling pitied or dependent.³⁴ This suggests a potential benefit of anonymous

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giving: by concealing asymmetries in the relative status of the altruist and beneficiary, it may yield higher well-being for the beneficiary. Alternately, when beneficiaries anticipate being able to pay forward the help they received, their subjective well-being is also improved.³⁵

The motivation perceived to drive acts of altruism also shapes its effects on beneficiaries. Altruism's effects on beneficiaries' well-being (e.g., positive affect, vitality, and self-esteem) seem to be especially robust when the beneficiary believes that the altruist personally chose to help and was intrinsically motivated to do so.³⁶ By contrast, if recipients perceive the altruistic acts as having been performed for selfish (as opposed to benevolent) reasons, their sense of self-esteem may decrease, which can lead to feelings of sadness and anxiety.³⁷ In some cases, receiving help may also elicit feelings of indebtedness and mixed emotional reactions in recipients.³⁸ For example, recipients of help sometimes experience

guilt, indebtedness, or negative mood after someone has sacrificed for them.³⁹

As these findings demonstrate, altruism's effects on the recipient's well-being can be moderated by its effects on specific emotions. The emotion that may most reliably link altruism to improved well-being is gratitude.⁴⁰ When helping elicits feelings of gratitude in recipients, they reliably experience increases in well-being. Gratitude is typically experienced by recipients when the altruistic actor helped (or was perceived to have helped) voluntarily and autonomously rather than under duress.⁴¹ Gratitude is consistently related to various positive well-being outcomes, including positive affect, optimism, and perceived closeness to others.⁴² Gratitude's effects on well-being may even potentially yield improvements in objective health indices as well, such as improved sleep and inflammatory markers.⁴³ In addition, gratitude may make beneficiaries more likely to engage in future altruism themselves.44 This may yield



further increases in well-being, in light of the positive effects of altruism on altruists' well-being, as will be discussed next.

Interestingly, feelings of guilt in beneficiaries of altruism can also increase future prosocial behavior.⁴⁵ Although this may seem counterintuitive, guilt is generally considered a prosocial emotion.46 The fact that it can both result from and lead to prosocial behavior may, therefore, not be surprising. Guilt can be distinguished from gratitude by its subjectively unpleasant nature, of course, as well as the fact that it may increase prosociality due to feelings of indebtedness rather than internally generated desires to help-perhaps as a result of the benefactor's expectation of reciprocity.⁴⁷ Thus, altruism, given freely and without expectations of reciprocity may be most likely to yield gratitude rather than indebtedness or guilt and thus enhance beneficiaries' well-being.

Effects of Altruism on Altruistic Actors' Well-Being

Whereas it is self-evident that altruism improves the well-being of recipients, it may be less obvious it would improve the subjective well-being of altruists themselves. And yet it often does. This may seem unintuitive, since altruistic acts often entail a cost to the actor (i.e., sacrificing resources), thus resulting in some decrease in their objective well-being. But that helping others—including giving them money, blood, or other kinds of assistance—nonetheless reliably causes increased subjective well-being is well-documented, with consistently small-to-medium effect sizes.⁴⁸

A seminal investigation of this effect was conducted by Dunn and colleagues.⁴⁹ They found not only that happier people report spending more money on others (as other studies have also found) but that when participants were given a small amount of money (either \$5 or \$20) and randomly assigned to spend it on themselves or someone else, those assigned to spend money on others consistently reported being happier than those who spent the money on themselves. This effect has been replicated in a subsequent registered report⁵⁰ and has been observed in multiple cultures around the globe.⁵¹ Other forms of altruism have also been consistently associated with improved well-being

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in altruists, including volunteering⁵² and donating blood.⁵³ It should be noted, though, that the magnitude of the relationship between altruism and well-being is larger when altruism is measured via self-report questionnaires rather than via single-item measures of volunteering or helping frequency.⁵⁴

The positive feelings induced by altruism are sometimes described as a "warm glow" that corresponds to feelings of satisfaction and general positive affect.55 This effect may yield a range of positive downstream consequences. For example, behavioral and neural evidence demonstrates that donating money can reduce the experience of pain in altruists.⁵⁶ These benefits may be durable over the long term. Altruistic actors report higher life satisfaction, fewer symptoms of depression, and higher job satisfaction that lasts up to two months after helping others.⁵⁷ The fact that altruism feels subjectively good may make altruism self-reinforcing,⁵⁸ such that those who feel better after helping are more likely to continue helping at higher rates.⁵⁹ If this is the case, the benefits of altruism may continue to accrue over time. Supporting this possibility, people around the world who regularly engage in altruistic behaviors like volunteering, donations, and helping report higher life satisfaction across the life span than those who are less altruistic.60

Paradoxically, however, some assert that if altruism yields positive emotional effects for the altruist, it undercuts the selfless or virtuous nature of the act.⁶¹ But others counter that altruism's warm glow in part reflects vicarious positive emotion from having improved others' well-being,⁶² which is the inevitable outcome of genuinely altruistically motivated help—and which, therefore, should be considered a marker, not a contra-indication, of altruistic motivation.⁶³



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As is the case for altruism's effects on beneficiaries, the effects of altruism may also vary as a function of the relationship between the altruistic actor and the beneficiary. When the type of altruism is held constant, helping close others may be more beneficial for well-being, as well-being is more reliably elevated when people help others with whom they have stronger versus weaker ties. 64 However, the fact that altruism for close others is more likely to be planned and formal may make its real-world effects on well-being weaker, as informal helping (versus formal helping) is generally linked to greater well-being. 65

Altruism's effects on the well-being of altruists also tend to be greater when helping is autonomous and voluntary rather than obligatory.⁶⁶ In one study of daily helping, participants only reported greater well-being when they helped by choice rather than because they were required to. This is because helping by choice had the greatest positive effect on feelings of autonomy, social connectedness, and competence, in accordance with theories of self-determination.⁶⁷ These findings might appear to conflict with studies in which participants who are randomly assigned to help others by researchers nonetheless report increased well-being.⁶⁸ However, in such studies, the choice of how and whom participants help is left up to them, which may preserve the beneficial effects of altruism as an autonomous choice.69 The fact that altruism that is freely chosen is more strongly linked to well-being may help to explain why the positive relationship between altruism and well-being tends to be strongest in individualistic cultures,⁷⁰ in which helping may be more often construed as an autonomous voluntary choice, rather than an obligation.

Finally, whether altruism benefits altruists' well-being may depend on various demographic features. One meta-analysis found that younger altruists experience higher levels of well-being relative to older altruists, perhaps because altruism in younger adults is more likely to result in durable changes in self-concept and feelings of personal growth. Women may also benefit more than men from acting altruistically, as research suggests that helping is more positively associated with eudaimonic well-being, social relations, and physical health in women than in men. 72

Effects of Altruism on Third Parties' Well-Being

The positive effects of altruism on well-being may not be limited to the altruist and the beneficiary, but might also extend to third parties, such as those who observe an act of altruism or who are part of the social network of either altruists or beneficiaries. Relatively little research has explored this question. However, some evidence suggests that simply witnessing acts of altruism promotes well-being. For example, observing altruism has been found to result in what is termed "moral" elevation," which reflects extreme elevation in mood, increased energy, desire for affiliation, the motivation to do good things for other people, and the desire to become a better person.⁷³ Observing altruistic acts, or even learning about them from others, may also influence observers to be more altruistic in their future interactions.74 People may update their beliefs about normative behaviors when observing others' altruism and, as a result, may adopt more altruistic norms in the future.75 Frequently observing altruistic acts may thus yield more positive beliefs about human nature and build interpersonal trust. By contrast, people may adopt more cynical beliefs after observing antagonistic interactions.76

Under some circumstances, observing others' altruistic behavior may lead to negative outcomes, particularly when the altruistic act is perceived as strongly non-normative. Witnessing others deviating, even generously, from norms such as equity can result in negative affect,⁷⁷ perhaps by making observers feel worse about themselves. This may lead to "do-gooder derogation", in which altruistic actors are perceived more

negatively,78 and may be criticized, seen as irrational or psychologically disturbed, or even punished.⁷⁹ In one study, for example, the least prosocial participants in a laboratory economic game penalized players who had contributed the most to a common pool, perhaps to deter them from continuing to behave in a way that makes others look worse by comparison.80 Because it serves to deter prosocial behavior and thus harms the group, punishment of prosocial behavior is sometimes termed "antisocial punishment" (in contrast to "altruistic punishment" which serves to deter antisocial behavior). Antisocial punishment is observed to some degree across many societies, but it is particularly prevalent in societies with weak norms of civic cooperation and the weak rule of law, whereas failure to act prosocially is punished more frequently in societies with stronger civic cooperation norms.81

Together, then, preliminary evidence suggests that observing acts of altruism may improve observers' well-being through its effects on mood and emotion, interpersonal trust, and beliefs about human nature, but these effects may be stronger among individuals and societies for which altruism and other forms of prosociality are normative.

Well-Being as Predictor of Altruism

Effects of Beneficiaries' Well-Being on Altruism

One reason it can be difficult to disentangle relationships between well-being and altruism is that these relationships are bidirectional. That is, not only does altruism improve the well-being of beneficiaries, altruists, and even observers, but the causal arrows may also run the other way: well-being may sometimes increase altruism. This is the case for well-being experienced by both potential altruists and potential beneficiaries. For example, expressing higher well-being (particularly positive emotions) may increase the likelihood that a person will receive help from others. This may seem counter-intuitive, given that altruism is often the result of empathic concern elicited by a recipient's suffering or distress—indeed, suffering and distress are among the strongest elicitors of

altruism because they stimulate neural and hormonal mechanisms that promote interpersonal care and altruistic motivation. But it may be that either negative or positive emotions can elicit help, albeit through different routes. For example, a series of field studies found that various forms of helping (e.g., holding open a door, providing hypothetical help to hospitalized patients) are more likely to be directed toward beneficiaries displaying positive emotion relative to neutral or negative emotion.

These findings are generally consistent with various other studies indicating that whereas empathy-based altruism can result from observing others' negative emotions linked to distress or need, observable positive emotion can also promote prosocial intentions. For example, increased prosociality is directed towards people who speak with a positive and friendly tone of voice⁸⁴ and people are more willing to share money with a beneficiary presented as happy.85 Although negative emotions like sadness increase the perceived need of the beneficiary, people may nonetheless prefer helping happier people because they are seen as more desirable social partners and thus elicit stronger affiliation goals.86 Preferential helping for happy people may also be mediated by vicarious responding to others' positive affect⁸⁷—that is, it may induce positive affect in the altruist that subsequently elicits prosocial behavior.

Effects of Altruistic Actors' Well-Being on Altruism

Well-being increases not only the likelihood of being the recipient of altruism but of engaging in altruism. In general, altruistic behaviors are enacted more frequently in those experiencing higher well-being. People who are happier invest more hours in volunteer service, 88 spend more money on others, 89 and exert greater effort to benefit others. 90 On a larger scale, when well-being increases in a geographic region, extraordinary forms of altruism like altruistic kidney donation also increase. 91 Because altruistic kidney donation is so rare, it is implausible that the relationship between well-being and altruism results from the effect of these donations on population levels of



well-being; it seems more likely that population levels of well-being increase altruism. This study also demonstrated that increasing objective well-being in a geographic area over time is associated with increased altruism through its effects on subjective well-being.

That increasing objective well-being promotes altruism may seem surprising in light of the results of a small but influential series of studies that seemingly found greater objective well-being (for example, greater wealth or social status) to be associated with increased selfishness and reduced altruism. However, larger, more representative studies from researchers across various disciplines have tended to find the reverse to be true: that increased objective well-being, including having more resources, better health, and higher status, is generally associated with increases in various forms of prosociality, including volunteering, charitable donations, helping strangers in economic games, and returning lost items. This may, in

part, reflect the fact that those with more wealth, health, and status have more available resources for helping others. It may also reflect the positive link between objective and subjective well-being, however, as those experiencing poverty, poor health, or low status typically report lower well-being.⁹⁴

Even holding macro-level factors constant, however, transitory positive changes in mood also are linked to altruism, and experimental evidence suggests that inducing positive moods may cause increased prosociality. This may in part reflect the fact that people experiencing positive moods are intrinsically motivated to maintain that state. For this effect may be more robust when the help is not too costly. For example, when people in a positive state believe complying with a request for help would ruin their good mood, they may be less willing to help than those not experiencing a positive emotional state. In some cases, however, acute stress is also linked to altruism. Indeed,

during the pandemic people experiencing the most acute stress were the most likely to exhibit increases in various forms of prosocial behavior. His may be because acute stress or fear motivates people to act, which can manifest as helping behavior when the stress emerges in a social context. His effect may help to explain the surge in altruism observed during the COVID-19 pandemic. It may also help to explain why in general daily affect is less reliably associated with altruism than life satisfaction: because acute changes in both positive mood and some forms of negative mood—including acute stress or fear—can motivate helping.

A positive mood may be particularly likely to increase even costly altruism when it is the result of having received help from others. Those who receive help are more likely to help others, often as a result of increased gratitude,100 a positive emotion consistently linked to both well-being and altruistic behavior. This pay-it-forward effect, in which generous allocations of resources spread from person to person, has been observed across many studies.¹⁰¹ In one longitudinal study, recipients paid acts of kindness forward with 278% more prosocial behaviors than controls who did not experience acts of kindness.¹⁰² And in an economic exchange game, people who had been helped by another person gave more money to a stranger than those who had not been helped.¹⁰³ In another economic game in which participants were continuously changing partners, participants who received more money from one partner were more likely to make voluntary donations to other partners in subsequent rounds.¹⁰⁴ While it should be noted that the effect appears to gradually decline with repeated prosocial decisions over time,¹⁰⁵ in theory, this phenomenon of "upstream" reciprocity" could yield durable and widespread increases in well-being among altruists, beneficiaries of altruism, and others they encounter.

Open Questions

In previous sections, we have described the robust relationships between altruism and subjective well-being. Existing work suggests a reciprocal causal relationship between the two, with each influencing the other in a bidirectional manner. However, many unanswered questions about the nature of this causal relationship remain, in part due to the challenges and complexities involved in studying the relationship between altruism and well-being.

The Complexity of Directionality

The research presented here points towards a multi-causal relationship between altruism and subjective well-being in actors, beneficiaries, and observers. Although some of this work can draw strong causal conclusions using careful design or randomized assignment to interventions, 106 the conclusions that can be drawn from some research studies are more limited due to their correlational nature. For example, some studies that find positive effects of volunteering on well-being¹⁰⁷ have not accounted for factors that may drive self-selection into volunteering by those who are happier. However, one study sought to account for this possibility. Using a longitudinal panel in the United Kingdom, the authors controlled for higher prior levels of well-being of those who volunteer and found that volunteering nevertheless led to subsequent increases in well-being.¹⁰⁸ This study focused on one potential causal arrow: the effect of altruism on the altruist's well-being. But larger, more comprehensive studies should ultimately consider a wider range of causal arrows, including the effects of altruism on the happiness of beneficiaries and observers, and the effects of well-being on acting altruistically or being the beneficiary of altruism. Addressing such questions would require the collection of comprehensive longitudinal, momentary assessment data, similar to data that have been collected to measure a wide variety of everyday altruistic behaviors (enacted, received, or observed). 109 These data could be collected at both the individual level and aggregated at the regional or country level, with the goal of disentangling the level of analysis at which this

Table 4.1. Summary of the relationships between altruism and subjective well-being.

Beneficiaries	Altruistic Actors	Third-Party Observers
Altruism improves beneficiaries' well-being	Altruism improves altruistic actors' well-being	Observing altruistic acts improves observers' well-being
Examples:	Examples:	Examples:
Altruistic acts, such as donating money to increase recipients' wealth or donating blood to improve their health, aim to increase others' well-being ⁱ	Spending money on others," volunteering," and donating blood "i promote altruists" well-being	Observing altruism elevates mood, increases energy, desire for affiliation, the motivation to do good things for other people, and the desire to become a better person ^x
People who received cash payments report greater life satisfaction and positive affect and lower negative affect, with greatest effects observed among lower income countries ⁱⁱ	Additional details:	
	These acts may also be associated with negative outcomes—for example, when	Additional details:
	helping is viewed as obligatoryviii	Observing altruism may also lead to negative affect—for example, when witnessing others deviating from norms or when perceiving altruistic acts in a
Additional details:	This effect appears to be greater for younger people ^{ix}	
These acts may also lead to unintended negative effects on beneficiaries' well-being—for example, when beneficiaries feel indebted to the altruist ⁱⁱⁱ or if they perceive the altruist as acting for selfish reasons ^{iv}		way that makes observers feel worse by comparison ^{xii}
Increased well-being of beneficiaries leads to altruism	Increased well-being of altruistic actors leads to altruism	Increased well-being from observing altruistic acts leads to altruism
Examples:	Examples:	Examples:
Expressing more positive emotions may increase the likelihood that a person will receive help from others ^{xiii}	People who are happier are more likely to volunteer, give to charity, and help strangers ^{xviii}	"Moral elevation" after observing altruism influences observers to be more altruistic in the future ^{xxiii}
Additional details:	People who are happier are more likely to donate blood, bone marrow, and organs ^{xix}	Additional details:
Decreased well-being (e.g., increased		When altruistic acts are perceived as strongly non-normative, it may lead to "do-gooder derogation" xxiv
emotional distress or physical pain) also increases the likelihood that a person will receive help from others** Beneficiaries of altruism are more likely to pay it forward in the future,** which may result from feelings of gratitude***	Additional details:	
	At the national level, this effect is weaker	
	among less individualistic countries**	
	The strength of this relationship decreases among those with very high	

Note: The top row describes how altruism leads to subjective well-being; the Bottom row describes how subjective well-being leads to altruism.

Acute stress or fear can also promote

Table 4.1 References:

Batson & Powell (2003); de Waal (2008)

Feelings of guilt in beneficiaries of

altruism increases future altruismxvii

- Dwyer & Dunn (2022)
- Righetti et al., (2022); Zhang et al. (2018) Maisel & Gable (2009)
- Dunn et al. (2008); Aknin et al. (2013, 2015;
- 2020)
 Dolan et al. (2021); Lawton et al. (2021); Meier & Stutzer (2008)
 vii Hinrichs et al. (2008); Sojka & Sojka (2003)
 viii Lok & Dunn (2022); Weinstein et al. (2010)

well-being*xi

- Hui et al. (2020) Algoe & Haidt (2009); Haidt (2000)
- Blain et al. (2022)

helping behaviorxxii

- Pleasant & Barclay (2018)
- xiii Hauser et al. (2014)
- Batson & Powell (2003); de Waal (2008) Chancellor et al. (2018); DeSteno et al. (2010); Fowler & Christakis (2010)
- xvi Grant & Gino (2010)
- xvii Baumeister et al. (1994) xviii Kushlev et al. (2021)

- xix Brethel-Haurwitz et al. (2019); Rhoads et al.
- (2021)

- (2021)

 xx Rhoads, et al. (2021)

 xxi Rhoads et al. (2021)

 xxii Vieira et al. (2022); Vieira & Olsson (2022)

 xxiii Spivey & Prentice-Dunn (1990); Carlson & Zaki

 (2022)
- xxiv Barclay (2013); Minson & Monin (2012); Tasimi et al. (2015)



relationship is strongest and for which types of well-being and altruism. This kind of data could also address the timescale at which these effects occur.

Longitudinal effects are particularly important to consider given the apparent self-reinforcing nature of altruism, such that engaging in altruism tends to beget more altruism in the future.¹¹⁰ One open question remains: Why does this occur, and how are altruistic behaviors reinforced? Existing research points to a few possibilities. One is that improving someone else's well-being may be rewarding because it enhances positive mood vicariously.¹¹¹ In other words, people become happier upon seeing others become happier as a result of empathic processes. Another possibility is that altruism may be self-reinforcing when it yields more social rewards, such as the social approval and intrinsic satisfaction that result from conforming to desirable social norms. In general,

adhering to altruistic norms may increase social rewards like affiliation, social approval, or prestige. 112 By contrast, digressing from such norms may result in social punishments that signal violators to update their behavior. 113 Finally, altruism may be self-reinforcing because altruists discover it is a reliable route to fulfilling desirable outcomes like autonomy (feelings of personal choice), competence (feelings of self-efficacy), and relatedness (feelings of social connection).¹¹⁴ Meeting these needs through altruism may increase altruists' subjective well-being and thus promote future altruistic behavior. However, more research is required to determine the circumstances in which each of these potential mechanisms contributes to reinforced altruistic behavior.

Different Features of Altruism and Well-being

It will also be important to assess how different types of altruism are related to different wellbeing outcomes. Specific features of an altruistic act, such as the identity of the recipient, the costliness of the act, or the certainty of beneficial outcomes may play important roles in promoting altruists' well-being. As described previously, for example, one meta-analysis found that the relationship between altruism and well-being is diminished when the sacrifice made to benefit another person is large—even when the beneficiary is a romantic partner.¹¹⁵ This effect held despite altruists' reported willingness to sacrifice being positively correlated with well-being.

In light of this, larger studies may be needed to explore the ways that distinct forms of altruism promote and are promoted by well-being. Though behaviors like rescuing a stranger from a fire, giving someone directions, returning a lost wallet, and volunteering for a local charity all qualify as altruism, they vary in terms of their cost to the altruist, the benefits to the recipient, the identity of the beneficiary (e.g., friends, strangers), and context (e.g., in response to signs of distress or need, in uncertain or novel situations). Future work should disentangle how specific features of altruistic acts like these may promote (or prevent) well-being.

More research is also needed to explore when the association between altruism and well-being is enhanced (vs. reduced) and positive (vs. negative). One example includes how the cultural context in which altruism occurs shapes its outcomes. Most experimental altruism research has been conducted in North America and Europe, which are relatively individualistic cultural contexts that promote individuals' autonomy to pursue prosocial goals outside of parochial connections. This context may increase the strength of the relationship between well-being and various types of altruism performed for strangers or other relatively weak ties, such as donating blood or volunteering. 116 Future work should investigate how altruism for close others, such as family or friends, is associated with wellbeing in societies with different cultural values.

Different facets of well-being may also be associated with altruism in distinct ways. At the individual level, life satisfaction and positive affect predict altruistic behaviors that include volunteering, helping, and donating.¹¹⁷ However,

in country-aggregated measures, only life satisfaction (not daily positive and negative affect) predicts these three behaviors, as well as four additional forms of altruism. Understanding whether these observed relationships reflect real differences in the relationships between altruism and the distinct facets of well-being will require further study. Finally, as most work has focused on altruism, it remains an open question how other types of prosocial behavior, like cooperation or fairness, may relate to subjective well-being.

Conclusion

This chapter has explored the bidirectional relationship between altruism and well-being, highlighting well-being as both cause and outcome of altruism for altruistic actors, recipients, and observers (and reviewing the conditions under which this relationship may be promoted). Overall, the evidence is convincing that higher well-being promotes altruism, and that altruism promotes higher well-being in altruists. Altruism also creates higher well-being in beneficiaries, although the degree to which this is true depends on the nature of the altruistic act, such as whether it was performed out of obligation or an intrinsic desire to help. Preliminary evidence suggests altruism may also increase well-being in observers, although this effect may depend on prevailing social norms.

Taken together, the available evidence suggests that the global increase in altruism observed in 2020 and 2021 is likely good news on multiple counts: Not only is an increase in altruistic behavior good in its own right, but this increase almost certainly corresponded to widespread increases in well-being during the same time period whether because it caused the rise in altruism, was caused by the rise in altruism, or both. But more research is needed to address this and other open questions that remain regarding the causal relationship between well-being and specific forms of altruism. Answering these questions will be crucial for identifying the most effective ways to further promote both altruism and well-being around the world.

Endnotes

- 1 Fridman et al. (2022)
- 2 Helliwell et al. (2022)
- 3 Batson & Powell (2003); de Waal (2008)
- 4 Rhoads, Cutler, et al. (2021)
- 5 Miller (1999); Pew Research Center (2019)
- 6 Aknin et al. (2015); Curry et al. (2018); Dunn et al. (2008); Hui et al. (2020)
- 7 Algoe & Haidt (2009); Haidt (2000); Spivey & Prentice-Dunn (1990)
- 8 Aknin et al. (2012); Weinstein & Ryan (2010)
- 9 Aknin et al. (2018); Brethel-Haurwitz & Marsh (2014); Kushlev et al., (2021); Rhoads, Gunter, et al., (2021)
- 10 Böckler et al. (2016); Rhoads, Cutler, et al., (2021)
- 11 Batson & Powell (2003); de Waal (2008)
- 12 Rhoads, O'Connell, et al. (2022)
- 13 Brethel-Haurwitz et al., (2018); Marsh et al. (2014); O'Connell et al. (2019); Rhoads, Vekaria, et al. (2022); Vekaria et al. (2017, 2019)
- 14 Rhoads, Cutler, et al. (2021); Rilling & Sanfey (2011)
- 15 Diener (1984, 1994)
- 16 Rhoads, Gunter, et al. (2021)
- 17 Kushlev et al. (2021)
- 18 Rhoads et al. (2021)
- 19 Kushlev et al. (2021)
- 20 Batson & Powell (2003); de Waal (2008)
- 21 Dwyer & Dunn (2022)
- 22 Weinstein & Ryan (2010)
- 23 Hoffman et al. (2020)
- 24 Bartlett et al. (2012)
- 25 Alvarez & van Leeuwen (2015)
- 26 Epley et al. (2022)
- 27 Kumar & Epley (2022)
- 28 Amato (1990)
- 29 Lieberman et al. (2007)
- 30 e.g., Amato (1990); Batson (2010); Government of Canada (2014); Hart et al. (2020); Kurleto et al. (2022)
- 31 Amato (1990)
- 32 Earp et al. (2021)
- 33 Siedlecki et al. (2014)
- 34 Alvarez & van Leeuwen (2015); Sandstrom et al. (2019)
- 35 Alvarez & van Leeuwen (2015)
- 36 Weinstein & Ryan (2010)
- 37 Maisel & Gable (2009)
- 38 Righetti et al. (2022); Zhang et al. (2018)

- 39 Righetti, Schneider, et al. (2020)
- 40 McCullough et al. (2001)
- 41 Weinstein et al. (2010)
- 42 Wood et al. (2010)
- 43 Jans-Beken et al. (2020); O'Connell & Killeen-Byrt (2018)
- 44 Grant & Gino (2010)
- 45 Baumeister et al. (1994)
- 46 Vaish (2018)
- 47 Watkins et al. (2006)
- 48 Curry et al. (2018); Hui et al. (2020)
- 49 Dunn et al. (2008)
- 50 Aknin et al. (2020)
- 51 Aknin et al. (2013, 2015)
- 52 Dolan et al. (2021); Lawton et al. (2021); Meier & Stutzer (2008)
- 53 Hinrichs et al. (2008); Sojka & Sojka (2003)
- 54 Hui et al. (2020)
- 55 Andreoni (1990)
- 56 Wang et al. (2019)
- 57 Chancellor et al. (2018)
- 58 Mobbs et al. (2009)
- 59 Aknin et al. (2012); Chancellor et al. (2018)
- 60 Jebb et al. (2020)
- 61 Andreoni (1989)
- 62 Gesiarz & Crockett (2015)
- 63 Barasch et al. (2014); Morelli et al. (2015, 2018); Zaki (2014)
- 64 Aknin et al. (2011)
- 65 Hui et al. (2020)
- 66 Lok & Dunn (2022); Weinstein et al. (2010)
- 67 Weinstein & Ryan (2010)
- 68 Aknin et al. (2013, 2015); Dunn et al. (2008)
- 69 Aknin & Whillans (2021)
- 70 Rhoads et al. (2021)
- 71 Hui et al. (2020)
- 72 Hui et al. (2020)
- 73 Algoe & Haidt (2009); Haidt (2000)
- 74 Spivey & Prentice-Dunn (1990)
- 75 Carlson & Zaki (2022)
- 76 Neumann & Zaki (2022)
- 77 Blain et al. (2022)
- 78 Minson & Monin (2012); Tasimi et al. (2015)
- 79 Barclay (2013)

- 80 Pleasant & Barclay (2018)
- 81 Herrmann et al. (2008)
- 82 de Waal (2008); Decety et al. (2016); Lamm et al. (2016); Marsh (2018, 2022)
- 83 Hauser et al. (2014)
- 84 Goldman & Fordyce (1983)
- 85 Telle & Pfister (2012); Tong et al. (2021)
- 86 Hauser et al. (2014)
- 87 Telle & Pfister (2012)
- 88 Thoits & Hewitt (2001)
- 89 Aknin et al. (2012)
- 90 Layous et al. (2017)
- 91 Brethel-Haurwitz & Marsh (2014)
- 92 e.g., Piff et al. (2010)
- 93 Gittell & Tebaldi (2006); Hughes & Luksetich (2008); Korndörfer et al. (2015); Kumar et al. (2012); Post (2005); Stamos et al. (2020); Zwirner & Raihani (2020)
- 94 Howell & Howell (2008); Kahneman & Deaton (2010)
- 95 Carlson et al. (1988); Isen & Levin (1972)
- 96 Telle & Pfister (2016)
- 97 Isen & Simmonds (1978)
- 98 Vieira et al. (2022)
- 99 Taylor (2006); Vieira & Olsson (2022)
- 100 Bartlett & DeSteno (2006); Chang et al. (2012)
- 101 DeSteno et al. (2010); Fowler & Christakis (2010); Gray et al. (2014)
- 102 Chancellor et al. (2018)
- 103 DeSteno et al. (2010)
- 104 Fowler & Christakis (2010)
- 105 Horita et al. (2016)
- 106 Aknin et al. (2020)
- 107 Dolan et al. (2021); Greenfield & Marks (2004); Meier & Stutzer (2008)
- 108 Lawton et al. (2021)
- 109 Gallup (2010); Helliwell et al. (2022); Vekaria et al. (2020)
- 110 Aknin et al. (2012); Chancellor et al. (2018)
- 111 Mobbs et al. (2009); Morelli et al. (2015)
- 112 Hardy & Van Vugt (2006)
- 113 Fehr & Fischbacher (2003)
- 114 Aknin & Whillans (2021); Weinstein & Ryan (2010)
- 115 Righetti, Sakaluk, et al. (2020)
- 116 Rhoads, Gunter, et al. (2021)
- 117 Kushlev et al. (2021)
- 118 Rhoads, Gunter, et al. (2021)

References

Aknin, L. B., Barrington-Leigh, C. P., Dunn, E. W., Helliwell, J. F., Burns, J., Biswas-Diener, R., Kemeza, I., Nyende, P., Ashton-James, C. E., & Norton, M. I. (2013). *Prosocial Spending and Well-Being: Cross-Cultural Evidence for a Psychological Universal*. 104(4), 635–652.

Aknin, L. B., Broesch, T., Kiley Hamlin, J., & Van De Vondervoort, J. W. (2015). Prosocial behavior leads to happiness in a small-scale rural society. *Journal of Experimental Psychology: General*, 144(4), 788–795. https://doi.org/10.1037/xge0000082

Aknin, L. B., Dunn, E. W., & Norton, M. I. (2012). Happiness Runs in a Circular Motion: Evidence for a Positive Feedback Loop between Prosocial Spending and Happiness. *Journal of Happiness Studies*, *13*(2), 347–355. https://doi.org/10.1007/s10902-011-9267-5

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*, *119*(2), e15–e26. https://doi.org/10.1037/pspa0000191

Aknin, L. B., Sandstrom, G. M., Dunn, E. W., & Norton, M. I. (2011). It's the Recipient That Counts: Spending Money on Strong Social Ties Leads to Greater Happiness than Spending on Weak Social Ties. *PLOS ONE*, *6*(2), e17018. https://doi.org/10.1371/journal.pone.0017018

Aknin, L. B., Van de Vondervoort, J. W., & Hamlin, J. K. (2018). Positive feelings reward and promote prosocial behavior. *Current Opinion in Psychology*, *20*, 55–59. https://doi.org/10.1016/j.copsyc.2017.08.017

Aknin, L. B., & Whillans, A. V. (2021). Helping and Happiness: A Review and Guide for Public Policy. *Social Issues and Policy Review*, *15*(1), 3–34. https://doi.org/10.1111/sipr.12069

Algoe, S. B., & Haidt, J. (2009). Witnessing excellence in action: The 'other-praising' emotions of elevation, gratitude, and admiration. *The Journal of Positive Psychology*, *4*(2), 105–127. https://doi.org/10.1080/17439760802650519

Alvarez, K., & van Leeuwen, E. (2015). Paying it forward: How helping others can reduce the psychological threat of receiving help. *Journal of Applied Social Psychology*, *45*(1), 1–9. https://doi.org/10.1111/jasp.12270

Amato, P. R. (1990). Personality and Social Network Involvement as Predictors of Helping Behavior in Everyday Life. *Social Psychology Quarterly*, *53*(1), 31-43. https://doi.org/10.2307/2786867

Andreoni, J. (1989). Giving with Impure Altruism: Applications to Charity and Ricardian Equivalence. *Journal of Political Economy*. https://doi.org/10.1086/261662

Andreoni, J. (1990). Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving. *The Economic Journal*. https://doi.org/10.2307/2234133

Barasch, A., Levine, E. E., Berman, J. Z., & Small, D. A. (2014). Selfish or selfless? On the signal value of emotion in altruistic behavior. Journal of Personality and Social Psychology, 107(3), 393–413. https://doi.org/10.1037/a0037207

Barclay, P. (2013). Strategies for cooperation in biological markets, especially for humans. *Evolution and Human Behavior*, *34*(3), 164–175. https://doi.org/10.1016/i.evolhumbehav.2013.02.002

Bartlett, M. Y., Condon, P., Cruz, J., Baumann, J., & Desteno, D. (2012). Gratitude: Prompting behaviours that build relationships. *Cognition and Emotion*, *26*(1), 2–13. https://doi.org/10.108 0/02699931.2011.561297

Bartlett, M. Y., & DeSteno, D. (2006). Gratitude and Prosocial Behavior: Helping When It Costs You. *Psychological Science*, *17*(4), 319–325. https://doi.org/10.1111/j.1467-9280.2006.01705.x

Batson, C. D. (2010). The naked emperor: Seeking a more plausible genetic basis for psychological altruism. *Economics and Philosophy*. https://doi.org/10.1017/S0266267110000179

Batson, C. D., & Powell, A. A. (2003). Altruism and Prosocial Behavior. In I. B. Weiner (Ed.), *Handbook of Psychology*. Wiley. https://doi.org/10.1002/0471264385.wei0519

Baumeister, R. F., Stillwell, A. M., & Heatherton, T. F. (1994). Guilt: An interpersonal approach. *Psychological Bulletin*, *115*, 243–267. https://doi.org/10.1037/0033-2909.115.2.243

Blain, B., Marks, J., Czech, P., & Sharot, T. (2022). Observing others give & take: A computational account of bystanders' feelings and actions. *PLOS Computational Biology*, *18*(5), e1010010. https://doi.org/10.1371/journal.pcbi.1010010

Böckler, A., Tusche, A., & Singer, T. (2016). The Structure of Human Prosociality: Differentiating Altruistically Motivated, Norm Motivated, Strategically Motivated, and Self-Reported Prosocial Behavior. *Social Psychological and Personality Science*, 7(6), 530–541. https://doi.org/10.1177/1948550616639650

Brethel-Haurwitz, K. M., Cardinale, E. M., Vekaria, K. M., Robertson, E. L., Walitt, B., VanMeter, J. W., & Marsh, A. A. (2018). Extraordinary Altruists Exhibit Enhanced Self-Other Overlap in Neural Responses to Distress. *Psychological Science*, 29(10), 1-11. https://doi.org/10.1177/0956797618779590

Brethel-Haurwitz, K. M., & Marsh, A. A. (2014). Geographical Differences in Subjective Well-Being Predict Extraordinary Altruism. *Psychological Science*, *25*(3), 762–771. https://doi.org/10.1177/0956797613516148

Carlson, M., Charlin, V., & Miller, N. (1988). Positive mood and helping behavior: A test of six hypotheses. *Journal of Personality and Social Psychology*, *55*, 211–229. https://doi.org/10.1037/0022-3514.55.2.211

Carlson, R. W., & Zaki, J. (2022). Belief in Altruistic Motives Predicts Prosocial Actions and Inferences. *Psychological Reports*, *125*(4), 2191–2212. https://doi.org/10.1177/00332941211013529

Chancellor, J., Margolis, S., Bao, K. J., Lyubomirsky, S., & Emerson, R. W. (2018). Everyday prosociality in the workplace: The reinforcing benefits of giving, getting, and glimpsing. *Emotion*, *18*(4), 507–517. https://doi.org/10.1037/emo0000321. supp

Chang, Y.-P., Lin, Y.-C., & Chen, L. H. (2012). Pay It Forward: Gratitude in Social Networks. *Journal of Happiness Studies*, *13*(5), 761-781. https://doi.org/10.1007/s10902-011-9289-z

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. https://doi.org/10.1016/j.jesp.2018.02.014

de Waal, F. B. M. (2008). Putting the altruism back into altruism: The evolution of empathy. *Annual Review of Psychology*, *59*, 279–300. https://doi.org/10.1146/annurev.psych.59.103006.093625

Decety, J., Bartal, I. B. A., Uzefovsky, F., & Knafo-Noam, A. (2016). Empathy as a driver of prosocial behaviour: Highly conserved neurobehavioural mechanisms across species. *Philosophical Transactions of the Royal Society B: Biological Sciences*, *371*(1686), 20150077. https://doi.org/10.1098/rstb.2015.0077

DeSteno, D., Bartlett, M. Y., Baumann, J., Williams, L. A., & Dickens, L. (2010). Gratitude as moral sentiment: Emotion-guided cooperation in economic exchange. *Emotion*, *10*, 289–293. https://doi.org/10.1037/a0017883

Diener, E. (1984). Subjective well-being. *Psychological Bulletin*, 95(3), 542-575. https://doi.org/10.1037/0033-2909.95.3.542

Diener, E. (1994). Assessing subjective well-being: Progress and opportunities. *Social Indicators Research*, *31*(2), 103–157. https://doi.org/10.1007/BF01207052

Dolan, P., Krekel, C., Shreedhar, G., Lee, H., Marshall, C., & Smith, A. (2021). Happy to Help: The Welfare Effects of a Nationwide Micro-Volunteering Programme. *SSRN Electronic Journal*. https://doi.org/10.2139/ssrn.3865456

Dunn, E. W., Aknin, L. B., & Norton, M. I. (2008). Spending money on others promotes happiness. *Science*, *319*(5870), 1687–1688. https://doi.org/10.1126/science.1150952

Dwyer, R. J., & Dunn, E. W. (2022). Wealth redistribution promotes happiness. *Proceedings of the National Academy of Sciences*, *119*(46), e2211123119. https://doi.org/10.1073/pnas.2211123119

Earp, B. D., McLoughlin, K. L., Monrad, J. T., Clark, M. S., & Crockett, M. J. (2021). How social relationships shape moral wrongness judgments. *Nature Communications*, *12*(1), Article 1. https://doi.org/10.1038/s41467-021-26067-4

Epley, N., Kumar, A., Dungan, J., & Echelbarger, M. (2022). A Prosociality Paradox: How Miscalibrated Social Cognition Creates a Misplaced Barrier to Prosocial Action. PsyArXiv. https://doi.org/10.31234/osf.io/9t3wf

Fehr, E., & Fischbacher, U. (2003). The nature of human altruism. *Nature*, *425*(6960), 785–791. https://doi.org/10.1038/nature02043

Fowler, J. H., & Christakis, N. A. (2010). Cooperative behavior cascades in human social networks. *Proceedings of the National Academy of Sciences*, *107*(12), 5334–5338. https://doi.org/10.1073/pnas.0913149107

Fridman, A., Gershon, R., & Gneezy, A. (2022). Increased generosity under COVID-19 threat. Scientific Reports, 12, 4886. https://doi.org/10.1038/s41598-022-08748-2

Gallup. (2010). *Gallup global wellbeing: The behavioral economics of GDP growth.* https://news.gallup.com/poll/126965/gallup-global-wellbeing.aspx

Gesiarz, F., & Crockett, M. J. (2015). Goal-directed, habitual and Pavlovian prosocial behavior. *Frontiers in Behavioral Neuroscience*, 9(May), 1-18. https://doi.org/10.3389/fnbeh.2015.00135

Gittell, R., & Tebaldi, E. (2006). Charitable giving: Factors influencing giving in U.S. states. *Nonprofit and Voluntary Sector Quarterly*, *35*(4), 721-736. https://doi.org/10.1177/0899764006289768

Goldman, M., & Fordyce, J. (1983). Prosocial Behavior as Affected by Eye Contact, Touch, and Voice Expression. *The Journal of Social Psychology*, *121*(1), 125–129. https://doi.org/10.1080/00224545.1983.9924474

Government of Canada, S. C. (2014, March 31). *Time spent providing care to a family member or friend with a long-term illness, disability or aging needs by sex and relationship between respondent and primary care receiver.* https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=4410001001

Grant, A. M., & Gino, F. (2010). A little thanks goes a long way: Explaining why gratitude expressions motivate prosocial behavior. *Journal of Personality and Social Psychology*, *98*, 946–955. https://doi.org/10.1037/a0017935

Gray, K., Ward, A. F., & Norton, M. I. (2014). Paying it forward: Generalized reciprocity and the limits of generosity. *Journal of Experimental Psychology: General*, 143, 247–254. https://doi.org/10.1037/a0031047

Greenfield, E. A., & Marks, N. F. (2004). Formal Volunteering as a Protective Factor for Older Adults' Psychological Well-Being. *The Journals of Gerontology: Series B*, 59(5), S258–S264. https://doi.org/10.1093/geronb/59.5.S258

Haidt, J. (2000). The Positive emotion of elevation. *Prevention & Treatment*, *3*(1). https://psycnet.apa.org/buy/2000-03082-003

Hardy, C. L., & Van Vugt, M. (2006). Nice Guys Finish First: The Competitive Altruism Hypothesis. *Personality and Social Psychology Bulletin*, *32*(10), 1402–1413. https://doi.org/10.1177/0146167206291006

Hart, A., Smith, J. M., Skeans, M. A., Gustafson, S. K., Wilk, A. R., Castro, S., Foutz, J., Wainright, J. L., Snyder, J. J., Kasiske, B. L., & Israni, A. K. (2020). OPTN/SRTR 2018 Annual Data Report: Kidney. *American Journal of Transplantation*, 20(s1), 20–130. https://doi.org/10.1111/ajt.15672

Hauser, D. J., Preston, S. D., & Stansfield, R. B. (2014). Altruism in the wild: When affiliative motives to help positive people overtake empathic motives to help the distressed. *Journal of Experimental Psychology: General, 143,* 1295–1305. https://doi.org/10.1037/a0035464

Helliwell, J. F., Huang, H., Wang, S., & Norton, M. (2022). Happiness, Benevolence, and Trust During COVID-19 and Beyond. In J. F. Helliwell, R. Layard, & J. D. Sachs (Eds.), *World Happiness Report 2022* (pp. 14–52). Sustainable Development Solutions Network. https://worldhappiness.report/ed/2022/happiness-benevolence-and-trust-during-covid-19-and-beyond/

Herrmann, B., Thöni, C., & Gächter, S. (2008). Antisocial Punishment Across Societies. *Science*, *319*(5868), 1362–1367. https://doi.org/10.1126/science.1153808

Hinrichs, A., Picker, S. M., Schneider, A., Lefering, R., Neugebauer, E. a. M., & Gathof, B. S. (2008). Effect of blood donation on well-being of blood donors. *Transfusion Medicine*, *18*(1), 40-48. https://doi.org/10.1111/j.1365-3148.2007.00805.x

Hoffman, E., Gonzalez-Mujica, J., Acosta-Orozco, C., & Compton, W. C. (2020). The Psychological Benefits of Receiving Real-Life Altruism. *Journal of Humanistic Psychology*, 60(2), 187-204. https://doi.org/10.1177/0022167817690280

Horita, Y., Takezawa, M., Kinjo, T., Nakawake, Y., & Masuda, N. (2016). Transient nature of cooperation by pay-it-forward reciprocity. *Scientific Reports*, 6(1), Article 1. https://doi.org/10.1038/srep19471

Howell, R. T., & Howell, C. J. (2008). The relation of economic status to subjective well-being in developing countries: A meta-analysis. *Psychological Bulletin*, *134*, 536–560. https://doi.org/10.1037/0033-2909.134.4.536

Hughes, P., & Luksetich, W. (2008). Income volatility and wealth: The effect on charitable giving. *Nonprofit and Voluntary Sector Quarterly*, *37*(2), 264–280. https://doi.org/10.1177/0899764007310416

Hui, B. P. H., Ng, J. C. K., Berzaghi, E., Cunningham-Amos, L. A., & Kogan, A. (2020). Rewards of Kindness? A Meta-Analysis of the Link Between Prosociality and Well-Being. *Psychological Bulletin*, *146*(12), 1084-1116. https://doi.org/10.1037/bul0000298

Isen, A. M., & Levin, P. F. (1972). Effect of feeling good on helping: Cookies and kindness. *Journal of Personality and Social Psychology*, *21*, 384–388. https://doi.org/10.1037/h0032317

Isen, A. M., & Simmonds, S. F. (1978). The Effect of Feeling Good on a Helping Task that is Incompatible with Good Mood. *Social Psychology*, *41*(4), 346–349. https://doi.org/10.2307/3033588

Jans-Beken, L., Jacobs, N., Janssens, M., Peeters, S., Reijnders, J., Lechner, L., & Lataster, J. (2020). Gratitude and health: An updated review. *The Journal of Positive Psychology*, *15*(6), 743–782. https://doi.org/10.1080/17439760.2019.1651888

Jebb, A. T., Morrison, M., Tay, L., & Diener, E. (2020). Subjective Well-Being Around the World: Trends and Predictors Across the Life Span. *Psychological Science*, *31*(3), 293–305. https://doi.org/10.1177/0956797619898826

Kahneman, D., & Deaton, A. (2010). High income improves evaluation of life but not emotional well-being. *Proceedings of the National Academy of Sciences*, *107*(38), 16489–16493. https://doi.org/10.1073/pnas.1011492107

Korndörfer, M., Egloff, B., & Schmukle, S. C. (2015). A large scale test of the effect of social class on prosocial behavior. *PLoS ONE*, *10*(7), e0133193. https://doi.org/10.1371/journal.pone.0133193

Kumar, A., & Epley, N. (2022). A Little Good Goes an Unexpectedly Lond Way: Underestimating the Positive Impact of Kindness on Recipients. *Journal of Experimental Psychology: General*. https://doi.org/10.1037/xge0001271

Kumar, S., Calvo, R., Avendano, M., Sivaramakrishnan, K., & Berkman, L. F. (2012). Social support, volunteering and health around the world: Cross-national evidence from 139 countries. *Social Science & Medicine*, *74*(5), 696–706. https://doi.org/10.1016/j.socscimed.2011.11.017

Kurleto, P., Tomaszek, L., Milaniak, I., & Medrzycka-Dabrowska, W. (2022). Factors Associated with the Willingness to Become a Living Kidney Donor: A National Cross-Sectional Study. *International Journal of Environmental Research and Public Health*, 19(3), Article 3. https://doi.org/10.3390/ijerph19031313

Kushlev, K., Radosic, N., & Diener, E. (2021). Subjective Well-Being and Prosociality Around the Globe: Happy People Give More of Their Time and Money to Others. *Social Psychological and Personality Science*, *13*(4), 849–861. https://doi.org/10.1177/19485506211043379

Lamm, C., Bukowski, H., & Silani, G. (2016). From shared to distinct self-other representations in empathy: Evidence from neurotypical function and socio-cognitive disorders. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 371(1686). https://doi.org/10.1098/rstb.2015.0083

Lawton, R. N., Gramatki, I., Watt, W., & Fujiwara, D. (2021). Does Volunteering Make Us Happier, or Are Happier People More Likely to Volunteer? Addressing the Problem of Reverse Causality When Estimating the Wellbeing Impacts of Volunteering. *Journal of Happiness Studies*, 22(2), 599–624. https://doi.org/10.1007/s10902-020-00242-8

Layous, K., Nelson, S. K., Kurtz, J. L., & Lyubomirsky, S. (2017). What triggers prosocial effort? A positive feedback loop between positive activities, kindness, and well-being. *Journal of Positive Psychology*, *12*(4), 385–398. https://doi.org/10.1080/17439760.2016.1198924

Lieberman, D., Tooby, J., & Cosmides, L. (2007). The architecture of human kin detection. *Nature*, *445*(7129), Article 7129. https://doi.org/10.1038/nature05510

Lok, I., & Dunn, E. W. (2022). Are the benefits of prosocial spending and buying time moderated by age, gender, or income? *PLOS ONE*, *17*(6), e0269636. https://doi.org/10.1371/journal.pone.0269636

Maisel, N. C., & Gable, S. L. (2009). The Paradox of Received Social Support: The Importance of Responsiveness. *Psychological Science*, *20*(8), 928–932. https://doi.org/10.1111/j.1467-9280.2009.02388.x

Marsh, A. A. (2018). The neuroscience of empathy. *Current Opinion in Behavioral Sciences*, 19, 110–115.

Marsh, A. A. (2022). Getting our Affect Together: Shared Representations as the Core of Empathy. *Emotion Review, O*(0), 175407392211070. https://doi.org/10.1177/17540739221107029

Marsh, A. A., Stoycos, S. A., Brethel-Haurwitz, K. M., Robinson, P., VanMeter, J. W., & Cardinale, E. M. (2014). Neural and cognitive characteristics of extraordinary altruists. *Proceedings of the National Academy of Sciences*, 111(42), 15036–15041. https://doi.org/10.1073/pnas.1408440111

McCullough, M. E., Kilpatrick, S. D., Emmons, R. A., & Larson, D. B. (2001). Is gratitude a moral affect? *Psychological Bulletin*, *127*, 249–266. https://doi.org/10.1037/0033-2909.127.2.249

Meier, S., & Stutzer, A. (2008). Is Volunteering Rewarding in Itself? *Economica*, *75*(297), 39–59. https://doi. org/10.1111/j.1468-0335.2007.00597.x

Miller, D. T. (1999). The norm of self-interest. *American Psychologist*, *81*(1), 5-16. https://doi.org/10.1037/0003-066X.54.12.1053

Minson, J. A., & Monin, B. (2012). Do-Gooder Derogation: Disparaging Morally Motivated Minorities to Defuse Anticipated Reproach. *Social Psychological and Personality Science*, *3*(2), 200–207. https://doi.org/10.1177/1948550611415695

Mobbs, D., Yu, R., Meyer, M., Passamonti, L., Seymour, B., Calder, A. J., Schweizer, S., Frith, C. D., & Dalgleish, T. (2009). A key role for similarity in vicarious reward. *Science*, *324*(5929), 900. https://doi.org/10.1126/science.1170539

- Morelli, S. A., Knutson, B., & Zaki, J. (2018). Neural sensitivity to personal and vicarious reward differentially relate to prosociality and well-being. *Social Cognitive and Affective Neuroscience*, *13*(8), 831–839. https://doi.org/10.1093/scan/nsy056
- Morelli, S. A., Lieberman, M. D., & Zaki, J. (2015). The Emerging Study of Positive Empathy. *Social and Personality Psychology Compass*, 9(2), 57-68. https://doi.org/10.1111/spc3.12157
- Neumann, E., & Zaki, J. (2022). Toward a social psychology of cynicism. *Trends in Cognitive Sciences*. https://doi.org/10.1016/j.tics.2022.09.009
- O'Connell, B. H., & Killeen-Byrt, M. (2018). Psychosocial health mediates the gratitude-physical health link. *Psychology, Health & Medicine*, *23*(9), 1145–1150. https://doi.org/10.1080/13548506. 2018.1469782
- O'Connell, K., Brethel-Haurwitz, K. M., Rhoads, S. A., Cardinale, E. M., Vekaria, K. M., Robertson, E. L., Walitt, B., Vanmeter, J. W., & Marsh, A. A. (2019). Increased similarity of neural responses to experienced and empathic distress in costly altruism. *Scientific Reports*, 9(10774), 1-11. https://doi.org/10.1038/s41598-019-47196-3
- Pew Research Center. (2019). *Trust and Distrust in America*. https://www.pewresearch.org/politics/2019/07/22/trust-and-distrust-in-america/
- Piff, P. K., Kraus, M. W., Côté, S., Cheng, B. H., & Keltner, D. (2010). Having Less, Giving More: The Influence of Social Class on Prosocial Behavior. *Journal of Personality and Social Psychology*, 99(5), 771–784. https://doi.org/10.1037/a0020092
- Pleasant, A., & Barclay, P. (2018). Why Hate the Good Guy? Antisocial Punishment of High Cooperators Is Greater When People Compete To Be Chosen. *Psychological Science*, 29(6), 868–876.
- Post, S. G. (2005). Altruism, Happiness, and Health: It's Good to Be Good. *International Journal of Behavioral Medicine*, *12*(2), 66–77.
- Rhoads, S. A., Cutler, J., & Marsh, A. A. (2021). A feature-based network analysis and fMRI meta-analysis reveal three distinct types of prosocial decisions. *Social Cognitive and Affective Neuroscience*. https://doi.org/10.1093/scan/nsab079
- Rhoads, S. A., Gunter, D., Ryan, R. M., & Marsh, A. A. (2021). Global variation in subjective well-being predicts seven forms of altruism. *Psychological Science*, *32*(8), 1-15. https://doi.org/10.1177/0956797621994767
- Rhoads, S. A., O'Connell, K., Berluti, K., Ploe, M. L., Elizabeth, H. S., Dutton, M. A., VanMeter, A. S., & Marsh, A. A. (2022). Neural responses underlying extraordinary altruists' generosity for socially distant others. *PsyArXiv*. https://doi.org/10.31234/osf. io/8erfa
- Rhoads, S. A., Vekaria, K. M., O'Connell, K., Elizabeth, H. S., Rand, D. G., Kozak Williams, M. N., & Marsh, A. A. (2022). Unselfish traits and social decision-making patterns characterize six populations of real-world extraordinary altruists. *PsyArXiv*. https://doi.org/10.31234/osf.io/sykmv
- Righetti, F., Sakaluk, J. K., Faure, R., & Impett, E. A. (2020). The link between sacrifice and relational and personal well-being: A meta-analysis. *Psychological Bulletin*, *146*(10), 900–921. https://doi.org/10.1037/bul0000297

- Righetti, F., Schneider, I., Ferrier, D., Spiridonova, T., Xiang, R., & Impett, E. A. (2020). The bittersweet taste of sacrifice: Consequences for ambivalence and mixed reactions. *Journal of Experimental Psychology: General, 149*, 1950–1968. https://doi.org/10.1037/xge0000750
- Righetti, F., Visserman, M. L., & Impett, E. A. (2022). Sacrifices: Costly prosocial behaviors in romantic relationships. *Current Opinion in Psychology*, *44*, 74–79. https://doi.org/10.1016/j.copsyc.2021.08.031
- Rilling, J. K., & Sanfey, A. G. (2011). The neuroscience of social decision-making. *Annual Review of Psychology*, *62*, 23-48. https://doi.org/10.1146/annurev.psych.121208.131647
- Sandstrom, G. M., Schmader, T., Croft, A., & Kwok, N. (2019). A social identity threat perspective on being the target of generosity from a higher status other. *Journal of Experimental Social Psychology*, 82, 98–114. https://doi.org/10.1016/j.jesp.2018.12.004
- Siedlecki, K. L., Salthouse, T. A., Oishi, S., & Jeswani, S. (2014). The Relationship Between Social Support and Subjective Well-Being Across Age. *Social Indicators Research*, *117*(2), 561–576. https://doi.org/10.1007/s11205-013-0361-4
- Sojka, B. N., & Sojka, P. (2003). The blood-donation experience: Perceived physical, psychological and social impact of blood donation on the donor. *Vox Sanguinis*, *84*(2), 120–128. https://doi.org/10.1046/j.1423-0410.2003.00271.x
- Spivey, C. B., & Prentice-Dunn, S. (1990). Assessing the Directionality of Deindividuated Behavior: Effects of Deindividuation, Modeling, and Private Self-Consciousness on Aggressive and Prosocial Responses. *Basic and Applied Social Psychology*, 11(4), 387-403. https://doi.org/10.1207/s15324834basp1104_3
- Stamos, A., Lange, F., Huang, S., & Dewitte, S. (2020). Having Less, Giving More? Two Preregistered Replications of the Relationship Between Social Class and Prosocial Behavior. *Journal of Research in Personality*, 84(103902), 1–9. https://doi.org/10.1016/J.JRP.2019.103902
- Tasimi, A., Dominguez, A., & Wynn, K. (2015). Do-gooder derogation in children: The social costs of generosity. *Frontiers in Psychology*, *6*. https://www.frontiersin.org/articles/10.3389/fpsyg.2015.01036
- Taylor, S. E. (2006). Tend and Befriend: Biobehavioral Bases of Affiliation Under Stress. *Current Directions in Psychological Science*, *15*(6), 273-277.
- Telle, N.-T., & Pfister, H.-R. (2012). Not Only the Miserable Receive Help: Empathy Promotes Prosocial Behaviour Toward the Happy. *Current Psychology*, *31*(4), 393–413. https://doi.org/10.1007/s12144-012-9157-y
- Telle, N.-T., & Pfister, H.-R. (2016). Positive Empathy and Prosocial Behavior: A Neglected Link. *Emotion Review*, 8(2), 154–163. https://doi.org/10.1177/1754073915586817
- Thoits, P. A., & Hewitt, L. N. (2001). Volunteer Work and Well-Being. *Journal of Health and Social Behavior*, 42(2), 115–131.
- Tong, Z., Yi, M., Feng, W., Yu, Y., Liu, D., & Zhang, J. (2021). The Interaction of Facial Expression and Donor-Recipient Eye Contact in Donation Intentions: Based on the Intensity of Emotion. *Frontiers in Psychology*, *12*. https://www.frontiersin.org/articles/10.3389/fpsyg.2021.661851

Vaish, A. (2018). The prosocial functions of early social emotions: The case of guilt. *Current Opinion in Psychology*, 20, 25–29. https://doi.org/10.1016/j.copsyc.2017.08.008

Vekaria, K. M., Brethel-Haurwitz, K. M., Cardinale, E. M., Stoycos, S. A., & Marsh, A. A. (2017). Social discounting and distance perceptions in costly altruism. *Nature Human Behaviour*, 1(5), 1-7. https://doi.org/10.1038/s41562-017-0100

Vekaria, K. M., Hammell, A. E., Vincent, L., Smith, M., Rogers, T., Switzer, G. E., & Marsh, A. A. (2019). The Role of Prospection in Altruistic Bone Marrow Donation Decisions. *Health Psychology*, *2*(999).

Vekaria, K. M., O'Connell, K., Rhoads, S. A., Brethel-Haurwitz, K. M., Cardinale, E. M., Robertson, E. L., Walitt, B., VanMeter, J. W., & Marsh, A. A. (2020). Activation in bed nucleus of the stria terminalis (BNST) corresponds to everyday helping. *Cortex*, *127*, 67–77. https://doi.org/10.1016/j.cortex.2020.02.001

Vieira, J. B., & Olsson, A. (2022). Neural defensive circuits underlie helping under threat in humans. *eLife*, 11, e78162.

Vieira, J. B., Pierzchajlo, S., Jangard, S., Marsh, A. A., & Olsson, A. (2022). Acute anxiety during the COVID-19 pandemic was associated with higher levels of everyday altruism. *Scientific Reports*, *12*(1), 18619.

Wang, Y., Ge, J., Zhang, H., Wang, H., & Xie, X. (2019). Altruistic behaviors relieve physical pain. *Proceedings of the National Academy of Sciences*, 29, 1–9. https://doi.org/10.1073/pnas.1911861117

Watkins, P., Scheer, J., Ovnicek, M., & Kolts, R. (2006). The debt of gratitude: Dissociating gratitude and indebtedness. *Cognition and Emotion*, *20*(2), 217-241. https://doi.org/10.1080/02699930500172291

Weinstein, N., DeHaan, C. R., & Ryan, R. M. (2010). Attributing autonomous versus introjected motivation to helpers and the recipient experience: Effects on gratitude, attitudes, and well-being. *Motivation and Emotion*, *34*(4), 418-431. https://doi.org/10.1007/s11031-010-9183-8

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. https://doi.org/10.1037/a0016984

Wood, A. M., Froh, J. J., & Geraghty, A. W. A. (2010). Gratitude and well-being: A review and theoretical integration. *Clinical Psychology Review*, *30*(7), 890–905. https://doi.org/10.1016/j.cpr.2010.03.005

Zaki, J. (2014). The Altruism Hierarchy. *Edge.Org*. https://www.edge.org/response-detail/25507

Zhang, W., Chen, M., Xie, Y., & Zhao, Z. (2018). Prosocial Spending and Subjective Well-Being: The Recipient Perspective. *Journal of Happiness Studies*, *19*(8), 2267–2281. https://doi.org/10.1007/s10902-017-9918-2

Zwirner, E., & Raihani, N. (2020). Neighbourhood wealth, not urbanicity, predicts prosociality towards strangers. *Proceedings of the Royal Society B: Biological Sciences, 287*(1936), 20201359. https://doi.org/10.1098/rspb.2020.1359