

The Effects of Giving on Givers

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INTRODUCTION

Ever since the groundbreaking study by House, Landis, & Umberson (1988), in which the authors argued that social relationships were equally important predictors of health as smoking, blood pressure, obesity, and physical activity, research on the health effects of social processes has exploded. An updated meta-analysis on 148 prospective studies finds that there is a 50% increase in survival likelihood for people who have robust social relationships (Holt-Lunstad, Smith, & Layton, 2010). This effect is stable across gender, age, country of origin, and operationalization of social relationships. Being socially connected is good for one's health.

This is a complex issue, however, because social relationships encompass both giving and receiving social support, and it is unclear whether both aspects of social relationships contribute to health. Below we summarize research on the health outcomes associated with being a recipient of help versus giving help, and offer a theoretical model for integrating this body of research. Most of the studies are cross-sectional (i.e. correlational study conducted at a single time point) or longitudinal (i.e. study following individuals over time to examine the effect of giving or receiving help on some sort of health outcome), but a few experiments do exist.

Cross-sectional studies are difficult to interpret because the direction of causality between two variables is unclear. For example, a cross-sectional study finding that people who volunteer have improved health outcomes could mean that volunteering leads to health benefits, but it could also mean that people who feel more physically healthy are more likely to volunteer. With cross-sectional studies, there is also the possibility that another variable best explains the relationship. For example, it is possible that people with higher annual incomes are more likely to volunteer and are also in better health. Thus, income could explain the relationship between volunteering and health.

Longitudinal studies can clarify the direction of causality because clearly one variable (e.g. volunteering) comes before another (e.g. health), but the problem of third variables still exist in these types of studies. This does not mean that we should ignore any study that is not experimental, but rather, that our conclusions have to be careful. Much of what we know about more traditional health risk behaviors (e.g. smoking, obesity) are derived from longitudinal studies since it would be preposterous to randomly assign people to smoke or not. So, we see much validity in the longitudinal method, but third variables should always be considered when using it.

THE EFFECTS OF RECEIVING SUPPORT FROM OTHERS

As reviewed below, there is a large literature on receiving support from others, and the majority of it suggests that there may be minor health benefits associated with it. However, the health effects of receiving support from others are complicated by recipient need. It is likely that people with ongoing health problems will be more likely to receive help from others, and this needs to be taken into account in studies. Being the recipient of help is also complicated by issues of status and power, with lower status individuals more likely to be seen as needing help, regardless of their actual need state. There are also likely issues with respect to recipients' sense of efficacy and personal mastery that would be important to study within this literature.

There is a difference between believing that social support will be available if it is needed, and actually being the recipient of social support. Simply believing that one has an available network of supporters is associated with a number of positive mental and physical health outcomes, including better stress regulation and improved recovery from illness (Katz, Monnier, Libet, Shaw, & Beach, 2000; Lindorff, 2000; Monahan & Hooker, 1995). This may be

due to the strength of one's social connections, but may also be explained by something about individual participants such as more optimistic worldviews.

When it comes to *actually* receiving help though, the relationship appears to be more complex. For example, receiving social support has been associated with increased depression, feelings of guilt, and feelings of dependency in correlational studies (Liang, Krause, & Bennett, 2001; Lu, 1997; Lu & Argyle, 1992). In a 5-year longitudinal study that controlled for a number of potential alternative explanations (e.g. age, gender, physical health, health risk behaviors, personality traits), there was a 30% *increase* in mortality for individuals who reported receiving practical support from friends and family members at the beginning of the study (S. L. Brown, Nesse, Vinokur, & Smith, 2003).

Receiving social support has also been linked with better mental and physical health in correlational studies (Schwartz, Keyl, Marcum, & Bode, 2009; Schwartz, Meisenhelder, Ma, & Reed, 2003), and a 5-year longitudinal study found that individuals who reported receiving social support scored lower in depression by the end of the study (S.L. Brown, Brown, House, & Smith, 2008). A meta-analysis examining the overall effect of receiving social support on psychological and physical health outcomes found relatively small effect sizes, ranging from -.02 to .22 (C. Smith, Fernengel, Holcroft, Gerald, & Marien, 1994). These effects depended upon the type of health examined and the type of support received, but did not differ by gender, age, or type of study (cross-sectional versus longitudinal). The authors suggest that "a better understanding of an individual's need for and acceptance of social support is necessary before employing the commonly recommended interventions of self-help, bereavement, and marital or family therapy groups" (Smith et al, 1994, p. 358). Other meta-analyses have found that the small beneficial effects of receiving support are mediated by positive cardiovascular, endocrine, and immune responses (Thorsteinsson & James, 1999; Uchino, 2006; Uchino, Cacioppo, & Kiecolt-Glaser, 1996).

There are several factors that appear to determine whether receiving support will have a positive effect on the health of recipients. One factor is the gender of the recipient. Although Smith et al. (1994) found that gender did not moderate the outcomes, more recent research suggests that researchers must take into account gender norms that make it more difficult for men to accept and benefit from help. For example, one correlational study found that men who received support reported decreased psychological wellbeing, especially when the support received was for an important problem (Lindorff, 2000). Women did not experience this adverse outcome. A recent experimental study randomly assigned participants to receive support or not from someone with whom they had just formed a bond or not. Participants were then told that they would give a speech and salivary cortisol was assessed before and after the speech. The researchers found that cortisol increased dramatically in men who received social support from a close other, and this pattern did not occur after men received support from less close others, or in women (A. M. Smith, Loving, Crockett, & Campbell, 2009).

Personality traits may also determine whether receiving support will be associated with health benefits. For example, one study randomly assigned female participants to receive social support (i.e. positive feedback) or not during a social stress task (e.g. giving a speech). Participants only experienced dampened physiological responses to receiving support if they had a compassionate personality. Participants who were high in compassion and received social support had lower blood pressure, lower cortisol, and higher high frequency heart rate variability (indicating more efficient regulation of physiological arousal). This is likely because compassionate people are more willing to seek out and accept social support when needed

(Cosley, McCoy, Saslow, & Epel, 2010). There are probably other traits that would moderate the effect of receiving support (e.g. trust, optimism), and future research should consider this possibility.

Two other factors affect whether receiving support is beneficial to health. One is the blatancy of the support. Some people give support in a very direct manner, but fail to consider how it might feel to receive such obvious gestures of help. Obvious attempts at helping could affect recipients' sense of autonomy, competence, or self-esteem, and therefore undermine any potential psychological health benefits that may have accrued otherwise (Bolger & Amarel, 2007). Effective support givers are cognizant of such issues, and try to minimize their support attempts or make them altogether invisible. For example, an effective supporter might realize that her friend is confused about a statistics problem, and rather than directly try to help, she might ask the professor to clarify the question, saying that she herself does not understand it. Strategies such as these have been shown to reduce the negative side effects of being a recipient (Bolger & Amarel, 2007). Finally, there is research suggesting that another way to minimize potential negative outcomes of receiving help is to give support in return. Reciprocity of helping seems to be an important predictor of positive social support experiences (Buunk, Doosje, Jans, & Hopstaken, 1993; Gleason, Iida, Bolger, & Shrout, 2003).

THE EFFECTS OF GIVING SUPPORT TO OTHERS

“A generous person will prosper; whoever refreshes others will be refreshed.” ~Proverbs 11:25

We next turn to research on the effects of giving on givers, which is the main focus of this chapter. Giving is also complex, with people who are healthier likely finding it easier to give help. Thus baseline health has to be measured and covaried in studies that are interested in the health effects of giving on the giver. Is it better to give than to receive? As will be seen, there are contradictory findings with regards to the potential health costs versus benefits to giving one's resources (i.e. time, money, and care) to others, with the balance of studies leaning toward the benefits of giving. Although we review the literature extensively below, we are not aware of any meta-analyses to date that would assess this question more quantitatively.

We define giving quite broadly to include prosocial attitudes, traits, and behaviors. Behaviors themselves can range widely from informal support and care to formal giving experiences such as volunteering. What each of these has in common is that they are all focused on increasing others' well-being, whether simply in desire (e.g. concern for others) or in reality (e.g. by providing tangible assistance). Attempts to understand the mechanisms for giving effects can also be elucidated by studying its flip side, or extreme self-focus. Thus, we also summarize work on the health-related outcomes associated with a higher self-focus.

Giving time and money to organizations. Although the literature on volunteering behavior and health is relatively well-established, intriguing work also finds correlational links between making charitable donations and psychological well-being (Aknin et al., 2010; Dunn, Aknin, & Norton, 2008). These correlations are consistent across many different cultures (Aknin et al., 2010). What remains to be seen is whether giving to others makes people happier, happier people simply give more, or some third variable best explains this finding.

The majority of studies on volunteering and health are focused on older adults, yet volunteering appears to have a beneficial effect on other populations as well, including younger adults (Musick & Wilson, 2003), doctors (less burnout; (C. Campbell et al., 2009), and patients with post-traumatic stress disorder (better treatment outcomes; (Warren, 1993). In both

correlational and longitudinal studies, volunteers report more positive affect, life satisfaction, and psychological well-being, and less depression compared to non-volunteers, even when considering a variety of covariates (Greenfield & Marks, 2004; Lum & Lightfoot, 2005; Morrow-Howell, Hinterlong, Rozario, & Tang, 2003; Musick & Wilson, 2003; Piliavin & Siegl, 2007; Sarid, Melzer, Kurz, Shahar, & Ruch, 2010; Thoits & Hewitt, 2001; Van Willigen, 2000; Windsor, Anstey, & Rodgers, 2008). There seems to be evidence for a curvilinear effect of volunteering such that there are mental health benefits associated with moderate levels of volunteering, but not extremely high levels (i.e. 800 or more hours per year; Windsor et al., 2008).

Studies on physical health outcomes associated with volunteering almost entirely focus on older adults, likely because this is a group with an increased risk of health problems, functional limitations, and ultimately, mortality. Longitudinal studies find that volunteers report being in better health and having fewer functional limitations than non-volunteers, even when controlling for demographic and socioeconomic variables (Lum & Lightfoot, 2005; Piliavin & Siegl, 2007; Thoits & Hewitt, 2001; Van Willigen, 2000). A number of longitudinal studies find that older adults who volunteer experience a significantly reduced mortality risk several years later, even when including a host of covariates (Harris & Thoresen, 2005; Konrath, Fuhrel-Forbis, Lou, & Brown, 2011; Luoh & Herzog, 2002; Musick, Herzog, & House, 1999; Oman, Thoresen, & McMahon, 1999). Our recent work finds that the reasons why people volunteer are important determinants of whether they will experience this mortality risk decrease four years later (Konrath, Fuhrel-Forbis, et al., 2011). Volunteers who donate their time for other-oriented reasons (e.g. compassion) experience a significant reduction in their mortality risk, but volunteering for more self-oriented reasons (e.g. to learn something new, or to feel good about themselves) is not associated with any change in mortality risk. In fact, after considering covariates, self-oriented volunteers are just as likely to die as older adults who do not volunteer!

Although volunteering behavior itself appears to be protective for mental and physical health, there are inconsistencies with regard to how much the type, number of organizations, duration, or frequency of volunteering matters, with some research suggesting that these factors play no role and others finding that they matter. A meta-analytic integration of the literature would clarify this, and indeed one of us is working on exactly this issue (Okun & Brown, 2011).

Giving social support. Measures of social support given encompass both practical (e.g. money, time, errands) and more emotional types of support given to known others such as friends and family. Several correlational studies find that giving social support to others is associated with higher psychological well-being such as more happiness, increased self-esteem, and less loneliness (De Jong Gieffeld & Dykstra, 2008; Dunn, et al., 2008; Krause & Shaw, 2000; Schwartz, et al., 2003). These findings are confirmed in longitudinal studies (S.L. Brown, et al., 2008; Gleason, et al., 2003; Ironson, 2007; Schwartz & Sendor, 1999). Experimental and quasi-experimental studies find that people who are randomly assigned to such behaviors as caring for plants, giving money to others, or giving massages to infants, experience increased psychological well-being and decreased depression (Aknin, et al., 2010; Field, Hernandez-Reif, Quintino, Schanberg, & Kuhn, 1998; Langer & Rodin, 1976). However, giving is not always related to more positive *mental health* outcomes. One study found that there was no relationship between giving social support and depression (Liang, et al., 2001), and some studies have found that at times giving social support can be associated with negative outcomes such as a sense of burden and frustration (Fujiwara, 2009; Lu, 1997; Lu & Argyle, 1992), especially if others make too many demands, if givers become overwhelmed by others' problems, or if there is low

reciprocity within the interactions (Buunk, et al., 1993; Schwartz, et al., 2003; Strazdins & Broom, 2007).

The relationship between giving to others and *physical health* is more consistent in the literature. In correlational studies, giving to others is associated with positive health outcomes including fewer health conditions among older adults and longer-term survival among people with AIDs (W. M. Brown, Consedine, & Magai, 2005; Ironson et al., 2002; Schwartz, et al., 2009; Schwartz, et al., 2003). Although this effect seems to generalize across diverse ethnic and cultural groups (W. M. Brown, et al., 2005), one study found that among teenagers the correlation between giving to others and physical health only existed in females (Schwartz, et al., 2009). Longitudinal studies again confirm physical health benefits associated with giving to others, including signals of good health such as lower blood pressure and lower viral loads (Ironson, 2007; Piferi & Lawler, 2006), and ultimately, a significantly lower risk of mortality in older adults or chronically ill patients (S. L. Brown, et al., 2003; McClellan, Stanwyck, & Anson, 1993). These effects appear to be especially strong when the recipients of giving are close others (e.g. family, friends) rather than more distant others (e.g. nurses, doctors, other patients; McClellan et al, 1993), and are also robust to covariates (S. L. Brown, et al., 2003; Ironson, 2007; McClellan, et al., 1993). Experimental and quasi-experimental studies that directly examine the physiological effects of giving in the laboratory point to potential mechanisms within the neuroendocrine system. In particular, giving to others leads to decreases in cortisol (Field, et al., 1998; A. M. Smith, et al., 2009) and increases in progesterone and oxytocin within givers (S.L. Brown, Konrath, Seng, & Smith, 2011).

Compassionate attitudes and traits. A number of studies have examined the relationship between compassionate attitudes and traits, and health. These should be related to better health to the extent that they increase the likelihood that people will engage in behaviors that are intended to benefit others. Indeed, those who score high on other-oriented measures such as compassion, altruism, caring, and empathy seek out more caregiving opportunities (Davis, 1983; K. D. Smith, 1992; Steffen & Masters, 2005). With dispositional empathy declining over the past 30 years in the United States (Konrath, O'Brien, & Hsing, 2011), the issue of how empathy is related to health will likely become more important in the future.

A number of correlational studies find that people who score high in empathy or compassion have lower stress, anxiety, hopelessness, and depression (Au, Wong, Lai, & Chan, 2011; Ironson, et al., 2002; Steffen & Masters, 2005) even when controlling for other traditional predictors of mental health such as coping and social support (Au, et al., 2011). The samples in these studies varied widely and included high school students, college students, community samples, and people with chronic illnesses, yet the results are consistent. Even in jobs that are associated with high stress and potential compassion fatigue such as health care, individuals who are more compassionate, caring, or prosocially-oriented have higher job satisfaction and lower stress and burnout (Burtson & Stichler, 2010; Dyrbye et al., 2010). A 60-year longitudinal study confirms that those who have altruistic personalities as adolescents have better mental health outcomes in late adulthood, even when controlling for their initial health and social class (Wink & Dillon, 2002). One potential mechanism of this effect is that compassionate people are more likely to seek, accept, and be satisfied with social support from others (Cosley, et al., 2010; Steffen & Masters, 2005). It is important to note the distinction between having an other-oriented compassionate focus (i.e. empathic concern) versus a self-oriented emotional reaction (i.e. personal distress) in response to another person's suffering. The latter is likely to be associated

with poor mental health outcomes in contrast to more other-focused feelings (O'Connor, Berry, Weiss, & Gilbert, 2002).

In terms of physical health, correlational studies have found that people with higher empathy participate in fewer health risk behaviors such as drinking and smoking (Adams, 2010; Kalliopuska, 1992). One interesting experiment found that simply showing participants a film clip of an extremely compassionate exemplar (Mother Teresa) increased a biomarker of healthy immune functioning (S-IgA) compared to a control film clip. This effect was especially strong for participants who were high in affiliation motivation, or the desire to connect with others (McClelland & Krishnit, 1988). Longitudinal studies confirm that caring and altruistic individuals have better self-reported physical health, more robust immune responses in chronic illnesses, and are even lower in mortality risk several years later (Dillon & Wink, 2007; Ironson, 2007; Konrath & Fuhrel-Forbis, 2011b). However, the role of covariates needs to be clarified, with one study showing that health and social class explained the later health outcomes (Dillon & Wink, 2007) and another finding that the health outcomes was robust to a number of plausible confounds (Konrath & Fuhrel-Forbis, 2011b).

Caregiving behaviors. Caregiving behaviors involve unpaid assistance with activities of daily living (e.g. bathing, dressing, eating) that are given to someone experiencing an illness or functional limitation. For example, the spouse of an older adult who recently experienced a severe stroke or who is suffering from dementia would likely be involved in at least some daily caregiving activities. Similarly, parents of children with disabilities nearly always face additional caregiving responsibilities above and beyond typical parenting tasks. Caregiving is qualitatively different from other types of giving for a number of reasons: 1) it nearly always involves exposure to a loved one who is in pain or distress, 2) it is often non-voluntary due to financial or other circumstances, and 3) it often involves considerably more cost to the self in terms of time, energy, and financial contribution compared to other types of giving. As such, caregiving is a considerably more stressful experience for givers than other types of giving. Given this, researchers must tease apart the some of the unique features of caregiving contexts (e.g. the effects of seeing loved ones in pain or anticipatory bereavement) from the effects of actually giving help to loved ones, if they want to understand the independent effects of altruistic behavior (S. L. Brown et al., 2009).

A meta-analysis of 23 studies that compared dementia caregivers to age and gender-matched non-caregivers found that caregivers self-reported more health problems, more physical symptoms, and more medication usage, and also had more stress hormones and weaker immune responses, compared to non-caregivers (Vitaliano, Zhang, & Scanlan, 2003). Although the *average* effect of caregiving on health was statistically significant, there were a wide range of outcomes in the studies, suggesting that caregiving does not necessarily lead to poor health outcomes in itself, but likely interacts with a number of factors to predict such outcomes.

For example, meta-analyses find that caregiving is associated with more negative physical health outcomes for women (Pinquart & Sörensen, 2006; Vitaliano, et al., 2003), older caregivers (Pinquart & Sörensen, 2007; Vitaliano, et al., 2003), and people from ethnic minority groups (Pinquart & Sörensen, 2005). It is notable that women, older adults, and people from ethnic minorities also tend to be groups with lower socioeconomic resources relative to men, middle-aged adults, and Caucasians. Specific features of the caregiving situation also predict health outcomes. Caregivers who are providing more hours of care, more caregiving tasks, for a more impaired (physically and cognitively) impaired recipient, for longer periods of time are more susceptible to psychological and physical health problems, especially if care recipients

exhibit behavioral problems (Pinquart & Sörensen, 2007). Protective factors include having access to greater economic resources and social support (Pinquart & Sörensen, 2007). Taken together, these studies on the health effects associated with caregiving suggest that not all caregiving is created equally, and that interventions should especially target higher-risk groups.

Recent research highlights the importance of teasing apart the influence of actual support giving behaviors from the influence of such risk factors. In a longitudinal study that followed 3376 older adult caregivers (age 70+) from the Health and Retirement study, researchers found that hours of care given and spousal impairment *both* independently predicted mortality status 7 years later (S. L. Brown, et al., 2009). Providing 14 or more hours of care per week to spouses was associated with a *lower* mortality risk, and at the same time, caregivers whose spouses had more functional impairments had a *higher* mortality risk. These effects remained even when controlling for potential demographic (age, gender, race), socioeconomic (education, employment status, net worth), and health-related confounds (health, illnesses, functional status, and depression). Another recent study using the method of ecological momentary assessment demonstrated the importance of separating time spent actively helping spouses from time being “on call” to provide help if needed (Poulin et al., 2010). The researchers found that the more caregivers actually helped their spouses, the more positive affect they experienced. However, the more time they were “on call,” the *less* positive affect they experienced. This effect was moderated by interdependence such that those who reported being in more interdependent relationships experienced more positive affect (and no negative affect) when helping their spouses, while those who had less interdependent relationships experienced more negative affect (and no positive affect).

Another study found that empathy can be a double-edged sword when it comes to caregiving (Lee, Brennan, & Daly, 2001). On the one hand, caregivers who were high in a more *cognitive* form of empathy, reported lower stress and depression, and higher life satisfaction. This is likely because cognitive empathy allows one to consider the perspectives and needs of others, but also allows for some emotional distancing to occur. On the other hand, those who scored high in *emotional* empathy reported lower life satisfaction, with a non-significant tendency to score higher in depression. Although perspective-taking and emotional empathy are typically positively correlated (Davis, 1983), they are not identical, and their differences may be important when considering extremely high-stress, time-intensive, and unavoidable situations like informal caregiving.

Self-focus and health. The majority of this chapter has focused on the health benefits associated with being focused on others. But the flip side of this topic also deserves some attention. Are there negative health outcomes associated with an increase in self-focus? This is something that has been less frequently studied in the literature, but it will likely become increasingly important with societal rises in individualism, self-esteem, and narcissism over the past few decades (Twenge, 1997; Twenge & Campbell, 2001, 2008; Twenge, Campbell, & Gentile, 2011; Twenge, Konrath, Foster, Campbell, & Bushman, 2008).

Self-esteem and the personality trait narcissism are associated with positive mental health outcomes. For example, people with high self-esteem have high satisfaction with their lives and are less likely to be depressed or anxious (Crandall, 1973; Diener, 1984; Tennen & Herzberger, 1987). It’s not surprising that self-esteem is associated with positive mental health outcomes, and indeed, it is sometimes seen as a marker of mental health in itself. Although self-esteem and narcissism are positively correlated, people with high self-esteem have positive views of the self *and* others, whereas people scoring higher in narcissism see themselves as superior and others as

inferior. Surprisingly, those who score high in narcissism also have lower depression, anxiety, and loneliness (Sedikides, Rudich, Gregg, Kumashiro, & Rusbult, 2004; Watson & Biderman, 1993) and increased happiness and subjective well-being as compared to those who score lower in narcissism (Watson & Biderman, 1993). This is despite their documented difficulties in maintaining healthy interpersonal relationships (W. K. Campbell, Foster, & Finkel, 2002). Whether these apparent mental health benefits associated with narcissism run deep, are a result of some sort of defensive self-enhancement, or exist because of narcissism's correlation with self-esteem (Rosenthal & Hooley, 2010) remains to be seen.

Narcissism makes individuals susceptible to a host of unrealistic self-views that are difficult and stressful to continuously maintain (Morf & Rhodewalt, 2001). Attempting to maintain them may lead to chronic hyperactivation of the physiological stress response system, which in the long term could weaken the body's natural defenses against disease. Thus, examining the physical health outcomes associated with narcissism is as important as examining mental health outcomes associated with it. Although only a few studies have been conducted so far, they consistently find an overactivation of stress responses among narcissists. Males who score high in narcissism have high levels of stress hormones compared to males who score low in narcissism, especially when under stress (Edelstein, Yim, & Quas, 2010; Reinhard, Konrath, Cameron, & Lopez, 2011). There is no relationship between narcissism and cortisol among women. Among men and women, narcissism is related to increased cardiovascular reactivity when thinking of stressful stimuli (Kelsey, Ornduff, McCann, & Reiff, 2001) or after a stressor (Kelsey, Ornduff, Reiff, & Arthur, 2002). Similarly, thinking of interpersonal rejection leads to increased diastolic blood pressure and heart rate for men and women scoring high on narcissism (Sommer, Kirkland, Newman, Estrella, & Andreassi, 2009).

Our recent work found that it is not necessary to score high in a personality trait like narcissism to experience some negative health outcomes. Simply focusing on personal benefits that one may receive from volunteering is sufficient. In unadjusted models, more self-oriented reasons for volunteering were associated with increased mortality in older adults, however, this effect was reduced to non-significance when covariates were included (Konrath, Fuhrel-Forbis, et al., 2011). Note that these reasons were not selfish, per se, but simply focused on mundane potential benefits that volunteers might experience besides helping others such as learning new things or feeling needed. In other words, self-focus need not be too extreme to be costly to health.

Another way to conceptualize self-focus is to measure people's first person pronoun use (e.g. I, me, my, mine). This method is useful because unlike something as chronic as a trait or set of core motives, there are likely changes in pronoun use within individuals depending on situations. Several studies have found that depressed or bipolar individuals use more first person singular pronouns than controls, especially the word "I" (Bucci & Freedman, 1981; Lorenz & Cobb, 1952; Rude, Gortner, & Pennebaker, 2004; Weintraub, 1981). Although the direction of causality is unclear, these studies suggest that excessive self-focus is at the very least a signal of poor mental health. Indeed other research confirms that poets who later committed suicide made fewer references to other people, used fewer first person plural pronouns (e.g. we), and used more first person singular pronouns, compared to non-suicidal poets (Stirman & Pennebaker, 2001).

Excessive first person pronoun use is also associated with physical health outcomes. One program of research examined such usage in the context of coronary heart disease (Schervitz & Canick, 1988; Schervitz, Graham, & Ornish, 1985). The researchers found that participants who

frequently used first person pronouns had higher blood pressure, more occluded arteries, a more severe disease status, more previous myocardial infarctions, and a greater risk of mortality in longitudinal studies. These effects remained even when other important risk factors were covaried (e.g. age, smoking, cholesterol).

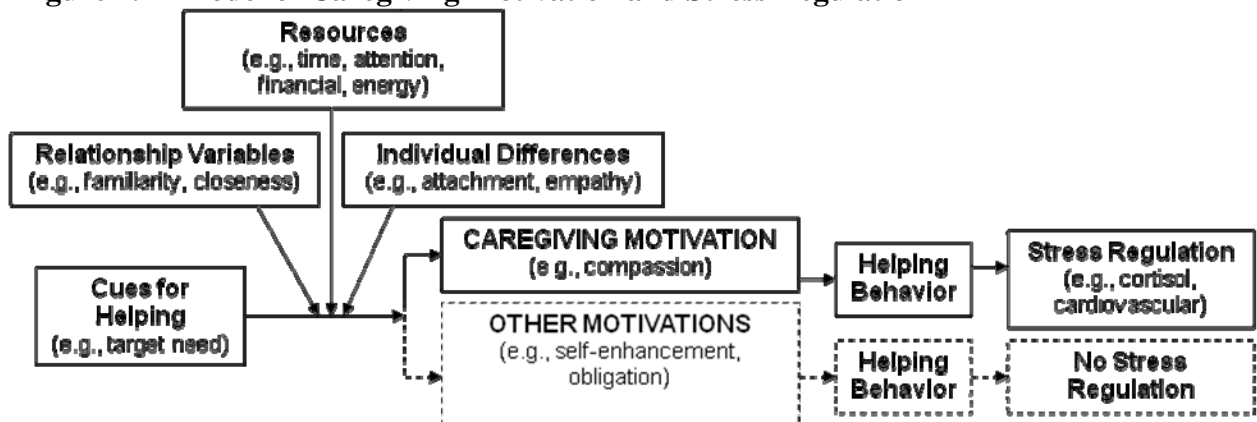
Taken together, it appears that self-focus might at times be linked to poor mental health, depending on how it is conceptualized. It also seems to be linked to increased physiological indicators of stress, and ultimately, to coronary heart disease. However, the work on this topic has many more gaps than on the topic of altruism and health, and much future research is needed.

THEORETICAL MODEL OF CAREGIVING AND HEALTH

We next present a theoretical model of caregiving (or nurturing) and health that can help to integrate previous research by predicting under which circumstances giving is likely to result in health benefits versus costs. This model can also be a useful tool to inspire future research on the topics discussed above.

We propose that giving to others can be beneficial to health to the extent that it engages the biological *caregiving system* (See Figure 1), which is a physiological (hormonal, neurological) and psychological (cognitions, emotions) system that evolved to facilitate the creation and maintenance of social bonds, including parental caregiving behavior and various kinds of helping and giving behaviors (S. Brown & Brown, 2006; S. Brown, Brown, & Preston, 2011). This caregiving system has been demonstrated to drive maternal behavior in rodents (Numan, 2006), and may facilitate human helping and caregiving behavior by both increasing the desire to help (i.e. approach motivation) *and* by decreasing the desire to avoid harm or cost to oneself (i.e. avoidance of stress responses; (Numan, 2006). This system is hypothesized to interrupt the physiological stress response, which over time, should lead to psychological and physical health benefits. There are many other reasons that people help, including that it is required (e.g. service learning, or community service penalties), that they have no other choice (e.g. cannot afford to pay for a caregiver), or that it can somehow benefit themselves (e.g. advance their career). This model allows for these other reasons, and simply argues that these alternative reasons to help will not activate the caregiving system, and thus should not lead to health benefits (see Konrath, Fuhrel-Forbis, et al., 2011, for an example).

Figure 1. A Model of Caregiving Motivation and Stress Regulation



Outcome: stress regulation. This model posits that one of the downstream consequences of the activation of caregiving motivations is increased stress regulation. Studies of both human and animal maternal behavior provide initial evidence for exactly this process, finding that the neuroendocrine system releases hormones such as oxytocin and progesterone during normal maternal-infant interactions (Feldman, Gordon, Schneiderman, Weisman, & Zagoory-Sharon, 2010; Numan, 2006). Interestingly, giving to others can itself be a source of stress (e.g. from exposure to others' pain) and can be costly to the self in terms of having fewer resources (time, money, energy). This model posits that caregiving motivations can help to alleviate givers' stress responses regardless of why they occur, even if they originate from the giving behavior itself.

Relationship variables. There are a number of factors that make it more likely that caregiving motivation will be elicited. First, relational bonds between helpers and recipients are posited to be important, an idea which is consistent with a recent evolutionary theory of social bonds and altruism (S. Brown & Brown, 2006). Indeed, there is experimental evidence that relationship variables themselves (e.g., closeness) can activate caregiving-system hormones such as progesterone (S.L. Brown et al., 2009). Thus, the stress-regulating effects of giving to others should be especially strong when givers are close, interdependent, or familiar with recipients. Studies described above provide evidence for this possibility (McClellan, et al., 1993; Poulin, et al., 2010), but the caregiving literature, which predominantly focuses on spouse caregiving, suggests that other factors may also be at play. Thus, future studies should focus on relationship type and quality in order to predict examine when giving predicts better health outcomes.

Individual differences. There are a number of individual differences that are hypothesized to affect whether giving will be beneficial or costly to givers' health. We hypothesize that gender should play a role in such outcomes, and in particular, that women whose caregiving systems have been primed with pregnancy and childbirth should be more likely to benefit from giving. Some research described above found that women were more likely to benefit from giving (Schwartz, et al., 2009), however, these effects were not consistent (Pinquart & Sörensen, 2006; Vitaliano, et al., 2003). Many of the studies described control for gender, but we recommend also testing for its moderating role in future research.

Traits that help people to more easily form bonds with others should facilitate the activation of the caregiving system. Thus, individual differences that are associated with bonding capacity such as attachment style (secure versus insecure) and dispositional empathy should also moderate the relationship between helping and stress-regulation. As reviewed above, in most cases, having an empathic or compassionate personality is associated with a number of health benefits, and it is possible that this is because of a chronic activation of the caregiving system.

Resources. The availability of time, attention, money, and energy should predict better health outcomes associated with giving, because these resources can keep the motivational focus on the recipient of care rather than the giver's own worries. This is consistent with the Energy-Resource Model of Empathic Responding (Konrath & Fuhrel-Forbis, 2011a), which posits that each act of empathizing or caring for another is costly in terms of energy units, and some people find these acts costlier than others. Resources likely interact with relationship variables and individual differences to predict optimal health outcomes from giving to others. For example, a high empathy person will likely find a small act of giving to be less depleting than a low empathy person would, because the more frequent flexing of empathic capacities in higher empathy people likely renders them more automatic (Konrath & Fuhrel-Forbis, 2011a).

This example highlights the contextual nature of resources, and we caution future researchers to avoid being overly literal in defining them. The subjective report of participants

(e.g. “I barely have time to think”) likely matters just as much as any objective indicators (e.g. only having a part-time job). That being said, one clear finding in the caregiving literature is that caregivers who objectively have more resources are less likely to suffer from negative health consequences (Pinquart & Sörensen, 2007).

Possible alternative routes. It is possible that positive emotions also explain why the altruism and health relationship exists. Helping behavior increases positive emotions in helpers (Yinon & Landau, 1987), and positive emotions themselves can accelerate recovery from stressors (Fredrickson, 2000). Positive emotions also predict increased longevity (Danner, Snowdon, & Friesen, 2001). Similarly, giving to others may also buffer stress and improve health outcomes because it increases a sense of purpose or meaning in volunteers’ lives (Greenfield & Marks, 2004; Musick, et al., 1999), which has also been linked to longevity (Boyle, Barnes, Buchman, & Bennett, 2009). In other words, perhaps helping behavior, however it is activated (i.e., through the caregiving system or not), triggers positive emotions or an increased sense of purpose, which then enhance stress regulation, with implications for long-term health. Future research should also examine these other potential explanations for the health benefits of giving to others.

FUTURE RESEARCH DIRECTIONS

This review of the literature on the health effects of giving on givers has revealed a number of gaps in the literature that need addressing. In particular, mechanisms of the giving-health relationship are not well understood, and these could be elucidated by experimental studies that examine the immediate and longer-term causal effects (both positive and negative) of helping and giving behavior. In our lab we are examining the immediate psychophysiological consequences of helping a partner within a laboratory context. In a series of experiments we are examining whether characteristics of the helper (i.e. individual differences such as gender or empathy) affect whether there will be positive physiological consequences of helping for helpers (e.g. lower cardiovascular reactivity). We are also experimentally manipulating the degree of closeness between helpers and recipients to see how relationship variables affect physiological responses. Laboratory studies can allow researchers to systematically vary a number of other situational features to see how they influence immediate physiological outcomes. In addition, longer term experiments (interventions) could examine how these processes work over time once they have been established in the lab.

In addition, nearly all of the studies described in this paper have been conducted in Western cultures and on predominantly White samples, and there is a need to examine whether positive effects of giving on givers extend to people of different ethnic and cultural backgrounds. This would be an important test of the biological caregiving model, which is hypothesized to be fundamental to humans. Although there may be cultural variations in moderators of the altruism-health relationship, we hypothesize that once caregiving motivation is activated (See Figure 1), the stress regulatory consequences should be more universal.

Another potentially interesting area for further research is apparent after reviewing the literature. Many studies examine processes among older adult populations, with no study that we are aware of examining whether there are immediate physiological benefits of helping among very young children. This would also clarify the limits of this theoretical model. It is possible, for example, that caregiving motivation buffers people from stress only when this motivation becomes biologically critical for the survival of the species (i.e. at the age of childbearing potential). It is also possible that even young children experience physiological benefits from

nurturing and caring for others, and if so, this would provide evidence for the generalizability of the caregiving system outside of maternal behavior only, to also include a wide variety of caring and giving behaviors by a number of potential actors.

Finally, we have noted a number of important meta-analyses that have focused on three of the five literatures reviewed above. Notably missing are meta-analyses focusing on giving social support and health, and self-focus and health. Although these are both more emerging areas of research, at this point, there are enough studies available that some sort of integration would be informative.

CONCLUSION

Is it better to give than to receive? Based on this review, the answer is complex. Giving can have health benefits *and* health costs, and a number of factors influence whether the consequences will lean one way or the other. We recommend that future researchers move beyond simplistic questions of whether giving is good or bad for health, and instead examine these basic five questions: *Who* benefits from giving to others? *What* types of giving are associated with better health outcomes? *When* is giving beneficial to health, that is, under which circumstances? *Where* is giving associated with health benefits? And the big question -- *why*? Answering these questions will theoretically integrate a number of related literatures, but will also have the important practical benefit of determining the most appropriate low-cost giving-related health interventions for our aging population.

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