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Altruism, Happiness, and Health: It's Good to Be Good

Stephen G. Post

Altruistic (other-regarding) emotions and behaviors are associated with greater well-being, health, and longevity. This article presents a summary and assessment of existing research data on altruism and its relation to mental and physical health. It suggests several complimentary interpretive frameworks, including evolutionary biology, physiological models, and positive psychology. Potential public health implications of this research are discussed, as well as directions for future studies. The article concludes, with some caveats, that a strong correlation exists between the well-being, happiness, health, and longevity of people who are emotionally and behaviorally compassionate, so long as they are not overwhelmed by helping tasks.

Key words: kindness, altruism, well-being, happiness, health, public health

The vast majority of people in the European Union and the United States have more material wealth than did their parents; the percentage of these populations that is happy, however, has not increased, and depression and anxiety rates have risen dramatically (Easterbrook, 2003). The rise in depression rates is in part due to greater public and medical awareness. However, such elevated rates require serious reflection on our social environment, which has been described by one sociologist with the terms "bowling alone" and loss of "social capital" (Putnam, 2001). These terms suggest that a partial solution to the problem may lie with the restoration of prosocial altruistic emotions and behaviors. Current research does indeed show a strong association between kindly emotions, helping behavior, or both, on the one hand, and well-being, health, and longevity, on the other. This article summarizes and interprets existing research, points to future research directions, and suggests implications of such research for public health.

If kind emotions, helping behavior, or both are associated with well-being, health, and longevity, the implications for how we think about human nature and prosperity are significant (Hendrick & Hendrick, 1986; Levin, 2000). Although those who are physically overwhelmed, mentally overwhelmed, or both by the needs of others do experience a stressful "burden" that can have significant negative health consequences, as in the case of the stressed caregiver of a loved one with dementia (Kiecolt-Glaser, Preacher, MacCallum, Malarkey, & Glaser, 2003), there are health benefits linked to helping behavior when it is not experienced as overwhelming. A relevant study (Schwartz, Meisenhelder, Ma, & Reed, 2003) points to health benefits in generous behavior but with the important caveat that there are clear adverse health consequences associated with being overly taxed. Although the health benefits of receiving love are widely deemed significant, we want to go beyond the recipient to examine benefits for the agent. What happens to the health and longevity of people who are (a) emotionally kind, (b) charitable in their actions toward others without being overwhelmed, or both?

Emotional states and related behaviors have been studied by mainstream scientists in relation to health promotion and disease prevention (Oman, Thoresen, & McMahon, 1999; Young & Glasgow, 1998). However, the impact of positive emotional states and related behaviors on health constitutes a novel area for researchers (Edwards & Cooper, 1988). In the 1990s, for example, Danner et al. (2001) reviewed short, personal essays written by nuns in the 1930s; this was a secondary project in their famous nun study on Alzheimer disease. The nuns who expressed the most positive emotions were living about 10 years longer than those who expressed the fewest such emotions, and they were somewhat protected from the onset of dementia (Danner et al., 2001). In another example, Fredrickson (2003) summarized 2 decades of investigation and concluded that positive emotions were linked with a "broader thought-action repertoire," which is to say that "big picture" creative thinking was enhanced (as measured by standard tests). Drawing on her own studies and those of Alice Isen (1987), Frederickson found that "when people feel good, their thinking becomes more creative, integrative, flexible and open to information" (p. 333). She

Stephen G. Post, Department of Bioethics, School of Medicine, Case Western Reserve University, Cleveland, Ohio 44106–4976, USA.

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Correspondence concerning this article should be addressed to Stephen G. Post, Department of Bioethics, School of Medicine, Case Western Reserve University, Cleveland, Ohio 44106–4976, USA. E-mail: sgp2@cwru.edu

also found that positive emotions enhanced psychological and physical resilience and interpreted this effect as a result of the "undoing" of negative emotions that are clearly physically harmful. However, "helpful compassionate acts," she also argued, just allow people to feel elevated and good about themselves and others (Post, Underwood, Schloss, & Hurlbut, 2002).

There are few new ideas in the world. The link between "reasonable" altruism—that is, helping behavior that is not overwhelming—and health is at the core of Dickens' story of Ebenezer Scrooge; for with each new expression of benevolence, Scrooge became more buoyant, until finally he was among the most generous of men in all of England and appeared all the more effervescent and fit. He surely felt a great deal happier with life the more generous he became, following the pattern of the "helper's high" (Luks, 1988). There is no either–or dualism between quickening that innate capacity for benevolence and the fuller actualization of a happier and healthier self (Frankl, 1956). Setting aside preoccupation with "purity" and perfectly selfless motives, it may be that people who live generous lives soon become aware that in the giving of self lies the unsought discovery of self as the old selfish pursuit of happiness is subjectively revealed as futile and shortsighted. Dostoyevsky's images of the Elder Zossima have the same buoyancy. Jewish, Hindu, Buddhist, Islamic, and Native American spiritual traditions highlight the flourishing that follows from a life of unselfish love—a life in tune with one's true self (Post, 2002). Thus, there is an alternative image to that of the selfless ascetic who seems intent on withering away, (Goode, 1959).

Scientifically speaking, however, is a generous and loving life typically happier, healthier, and longer than a life of negative affect and solipsism? Is it unhealthy to feel and behave as though one is the center of the universe, relating to others only in so far as they contribute to "my" agendas? The link between altruism and health is important to how we think of human nature and human fulfillment, and it was alluded to a half century ago. Sorokin (1954/2002), in his classic 1954 treatise entitled *The Ways and Power of Love,* began his "Preface" with the assertion that unselfish love and altruism are "necessary for physical, mental, and moral health" and that "altruistic persons live longer than egoistic individuals" (p. xi). Although he did not make a clear scientific case to demonstrate a link between altruism and prolongevity, he did use available historical collections of the lives of the saints to argue that such generous people generally live longer—unless their lives are cut short by misfortune. Erik Erikson, another maverick Harvard professor at the time, lightly surmised a connection between health and generativity—that is, altruism in older adults focused on a younger generational cohort. This connection is currently being examined in a major longitudinal prospective study of Harvard graduates over a 50-year period (Vaillant, 2002).

It is already well established that compassion, love, and social support have health benefits for recipients (Ainsworth et al., 1978; Harlow, 1958). Researchers in the late 1970s, for example, were studying the effects of a diet high in fat and cholesterol in rabbits. One subgroup of rabbits had 60% less atherosclerosis than the group as a whole, even though they ate the same diet. The only notable difference in treatment was that the healthier subgroup was fed and cared for by a lab assistant who took them out of their cages, petted them, and talked to them before feeding. The study was repeated twice with the same results and was reported in *Science* (Nerem, Levesque, & Cornhill, 1980). Also in this early period, researchers followed 10,000 Israeli men aged 40 years and older to clarify the risk factors for angina pectoris. Anxiety and severe psychosocial problems were confirmed risks; in addition, "those who perceived their wives to be loving and supportive had half the rate of angina of those who felt unloved and unsupported" (Medalie & Goldbourt, 1976, p. 917). A wife's love was later associated with lowered risk of duodenal ulcers (Medalie, Stange, Zyzanski, & Goldbourt, 1992). Studies show depressed lymphocyte function after bereavement (Bartrop, Lazarus, Luckhurst, Kiloh, & Penny, 1977). When love is lost due to the death of a beloved spouse, T and B cells in the immune system behave abnormally and, for many months, must be stimulated to perform their usual functions (Rees & Lutkins, 1967, Zisook, 1987). In a remarkable study that needs to be replicated, 126 healthy young men were randomly selected in the early 1950s from the Harvard classes of 1952 and 1954 and given questionnaires about their perceptions of the love they felt from their parents. Thirty-five years later, 91% of participants who did not perceive themselves to have had warm relationships with their mothers had diagnosed midlife diseases (coronary artery disease, high blood pressure, duodenal ulcer, and alcoholism), as compared to only 45% of those who reported a warm relationship with their mothers; 82% of those indicated low warmth and closeness to their fathers had such diagnoses, compared with 50% who reported high warmth and closeness. One hundred percent of those who reported low warmth and closeness from both parents had diseases diagnosed in midlife, whereas only 47% who reported both parents as being warm and close had midlife diagnoses (Russek & Schwartz, 1997). Although this Harvard study needs corroboration, it points to the now widely accepted biopsychosocial model that being loved, cared for, and supported by others is critically important to health and treatment efficacy (Goodkin & Visser, 2000). No one questions the importance to health of *receiving* compassionate love (Ornish, 1999). How-

ever, this end of the spectrum needs to be balanced with a focus on the importance to health of *giving* unselfish love.

Biogerontologists are studying the molecular and cellular science of aging with the goal of its eventual deceleration (Post & Binstock, 2004). One plausible hypothesis that should be simultaneously investigated is longevity enhancement through the cultivation of generous emotions and helping behaviors. On the one hand, it is intriguing to see that genetic modifications of fruit flies and nematode worms, caloric restriction in mice and primates, and related antioxidant studies all point toward the possibility in future decades of longer human lives through biotechnology (Post & Binstock, 2004). However, this technological approach does not ensure that longer lives will be morally good lives, whereas the inner cultivation of altruistic and loving emotions coupled with generous actions does (Post, 2004). A new direction in the emotional and behavioral aspects of antiaging research (Epel et al., 2004) indicates that chronic stress impacts health by modulating the rate of cellular aging. Evidence is mounting that psychological stress is associated with higher oxidative stress, lower telomerase activity, and shorter telomere length, all of which are known determinants of cell senescence and longevity. In this study, women with the highest levels of perceived stress had telomeres that were, on average, shortened by 1 decade when compared with low-stress women. Thus, stress accelerates aging and increases susceptibility to the many illnesses for which age is the major risk factor (Epel et al., 2004).

Cultivating loving emotions, engaging in helping and self-forgetful activities, and a serene spirituality may thus contribute to good health and longevity by preventing the acceleration of aging at the cellular level. In commenting on this study, Sapolsky (2004) indicates that, although more research is needed, the Epel et al. (2004) study points to a pathway by which stress influences a fundamental aspect of the aging process.

What do we really know, scientifically, about altruism, happiness, and health? (Rotzein et al., 1994). Evidence has been accumulating for several decades, and research has clearly escalated since the late 1990s.

Background of Existing Research

This section presents a brief overview of existing studies on altruism that are relevant to mental and physical health.

Mental Health

Well-being consists of feeling hopeful, happy, and good about oneself, as well as energetic and connected to others. An early study compared retirees older than the age 65 who volunteered with those who did not (Hunter & Lin, 1980–1981). Volunteers scored significantly higher in life satisfaction and will to live and had fewer symptoms of depression, anxiety, and somatization. Because there were no differences in demographic and other background variables between the groups, the researchers concluded that volunteer activity helped explain these mental health benefits. The nonvolunteers did spend more days in the hospital and were taking more medications, which may have prevented them from volunteering. However, the mental health benefits persisted after controlling for disability. In another older study, families of recently deceased loved ones reported a psychological benefit from their decision to donate organs (Batten & Prottas, 1987). More recent studies confirm an association between altruistic activities and both well-being and life satisfaction in older adults (Dulin & Hill, 2003; Liang, Krause, & Bennett, 2001; Morrow-Howell, Hinterlonh, Rozario, & Tang, 2003).

Midlarsky (1991) posed five reasons for benefits to older adults who engage in altruistic behavior: enhanced social integration, distraction from the agent's own problems, enhanced meaningfulness, increased perception of self-efficacy and competence, and improved mood or more physically active lifestyle. Midlarsky and Kahana (1994) associated adult altruism—that is, voluntary behavior that is "motivated by concern for the welfare of the other, rather than by anticipation of rewards" (p. 11)—with improved morale, self-esteem, positive affect, and well-being.

The mental health benefits of volunteerism include reduction in depressive symptoms (Musick & Wilson, 2003), happiness, and enhanced well-being (Krueger, Hicks, & McGue, 2001). Schwartz et al. (2003) focused on a stratified random sample of 2,016 members of the Presbyterian Church located throughout the United States. The study's purpose was to investigate whether altruistic social behaviors such as helping others were associated with better physical and mental health. Mailed questionnaires evaluated giving and receiving help, prayer activities, positive and negative religious coping, and self-reported physical and mental health. Multivariate regression analysis revealed no association between giving or receiving help and physical functioning, although the sample was skewed toward high physical functioning. After adjusting for age, gender, stressful life events, income, general health, religious coping, and asking God for healing, both helping others and receiving help were associated with mental health (i.e., anxiety and depression). *Giving help was more significantly associated with better mental health than was receiving help.* The authors concluded that "helping others is associated with higher levels of mental health, above and beyond the benefits of receiving help and other known

psychospiritual, stress, and demographic factors" (p. 782). The authors also add an important caveat that "feeling overwhelmed by others' demands had a stronger negative relationship with mental health than helping others had a positive one" (p. 783). (Whether some forms of helping are more rewarding than others is not examined.)

Physical Health

A review of existing studies indicates that research on the effect of kindness and volunteerism on health may have begun inadvertently in 1956, when a team of researchers from Cornell University School of Medicine began following 427 married women with children under the hypothesis that housewives with more children would be under greater stress and die earlier than women with few children (Moen, Dempster-McCain, & Williams, 1993). Surprisingly, they found that numbers of children, education, class, and work status did not affect longevity. After following these women for 30 years, however, it was found that 52% of those who did not belong to a volunteer organization had experienced a major illness, compared to 36% who did belong. Although a potential confounding factor is that people who volunteer may start out in better physical health, this would not greatly diminish the study's implications.

A study by Musick, Herzog, and House (1999) examined the hypothesis that older volunteers benefit in terms of health as well as well-being. Based on data from a nationally representative sample, the study used Cox proportional hazards regression to estimate the effects of volunteering on the rate of mortality among persons 65 and older. The data are a multistage stratified area sample representative of the noninstitutionalized U.S. population aged 25 and older; the response rate was 67% of sampled individuals and 68% for sampled households. The data were collected over three waves: 1986 (n = 3,617), 1989 (n = 2,867), 1994 (n = 2,348). Face-to-face interviews were conducted in the respondents' homes. From mid-1986 through March 1994, deaths were ascertained through tracking and interview processes and via the National Death Index. Respondents were asked whether they had volunteered in the past year through a religious, educational, political, senior citizen, or other organization. Respondents who had volunteered were asked how much time they had devoted to volunteerism. Controlled analysis indicated that the protective effects of volunteering "were strongest among those volunteering for one organization or for less than forty hours" (Musick et al., 1999, p. S175) and among those who lacked other social supports. Moderate amounts of volunteerism were associated with lowered risk of death. Indeed, simply adding the volunteering role was protective (Musick et al., 1999). One need not volunteer to a great extent to have benefits, and too much volunteering to the point of strain "incurs just enough detriments to offset the potential beneficial effects of the activity" (Musick et al., 1999, S178). The researchers added that 69% who reported volunteering did so through a religious organization, but they found no relation between reduced risk of mortality and religious service attendance. Volunteering, rather than its religious context, explained the effect.

Oman of the University of California at Berkeley is one of the leading researchers in this field. Oman et al. (1999) focused on 2,025 community-dwelling residents of Marin County, California, who were first examined in 1990–1991. All respondents were 55 or older at this baseline examination; 95% were non-Hispanic White, 58% were women, and a majority had annual incomes above $15,000. Residents were classified as practicing "high volunteerism" if they were involved in two or more helping organizations and as practicing "moderate volunteerism" if they were involved in one. The number of hours invested in helping behavior was also measured, although this was not as predictive as the number of organizations. Physical health status was assessed on the basis of reported medical diagnoses, as well as such factors as "tiring easily" and self-perceived overall health. Thirty-one percent (n = 630) of these elderly participants participated in some kind of volunteer activity, and about half volunteered for more than one organization. Those who volunteered for two or more organizations experienced a 63% lower likelihood of dying during the study period than did nonvolunteers. Even after controlling for age, gender, number of chronic conditions, physical mobility, exercise, self-rated general health, health habits (smoking), social support (marital status, religious attendance), and psychological status (depressive symptoms), this effect was only reduced to a still highly significant 44%.

Observational physical performance measures and self-reported functioning measures were included. Sociodemographic data were collected, as well as information on social functioning and support. Frequency of attendance at religious services was included in the many social functioning questions. Psychological measures were implemented as well. Mortality was determined by screening local newspapers, attempted contact for reinterview at the time of a second interview, and submission of names to the National Death Index. Mortality was examined from 1990 through November 13, 1995, the closing date of the second examination. During this follow-up period of 3.2 to 5.6. years, 203 (23.8%) men and 247 (21.1%) women died. Remarkably, "the mortality rate of 30.1 among nonvolunteers declined by 26 percent to 24.2 (p = .04) among moderate volunteers, and by an *additional* 50 percent to 12.8 (p = .008) among high volunteers (two or more organizations)" (Oman et al., 1999, p. 307).

Multivariate adjusted associations indicated that moderate volunteerism was not statistically significant after controlling for health status. High volunteerism remained significantly associated with lower mortality rates. Specifically, "the 44 percent reduction in mortality associated with high volunteerism in this study was larger than the reductions associated with physical mobility (39 percent), exercising four times weekly (30 percent), and weekly attendance at religious services (29 percent), and was only slightly smaller than the reduction associated with not smoking (49 percent)" (Oman et al., 1999, p. 310; Oman & Reed, 1998).

On a cross-cultural level, Krause, Ingersoll-Dayton, Liang, and Sugisawa (1999) at the University of Michigan studied a sample of 2,153 older adults in Japan, examining the relations among religion, providing help to others, and health. They found that those who provided more assistance to others were significantly more likely to indicate that their physical health was better. The authors concluded that the relation between religion and better health could be at least partly explained by the increased likelihood of religious persons helping others.

The benefits of altruism are not limited to older adults (Omato & Snyder, 1995); the differences in health outcomes between helpers and nonhelpers is more difficult to detect in younger age groups, however, where health is not affected by susceptibilities associated with aging (House et al., 1982). Ironson, Solomon, and Balbin (2002) at the University of Miami compared the characteristics of long-term survivors with AIDS (n = 79) with a HIV-positive comparison group equivalent (based on CD4 count) that had been diagnosed for a relatively shorter time (n = 200). These investigators found that survivors were significantly more likely to be spiritual or religious. The effect of spirituality and religiousness on survival, however, was mediated by "helping others with HIV." Thus, helping others (altruism) accounted for a significant part of the relation between spirituality and religiousness and long-term survival in this study.

Brown et al. (2003) reported on a 5-year study involving 423 older couples. Each couple was asked what type of practical support they provided for friends or relatives, if they could count on help from others when needed, and what type of emotional support they gave each other. A total of 134 people died over the 5 years. After adjusting for a variety of factors—including age, gender, and physical and emotional health—the researchers found an association between reduced risk of dying and giving help but no association between receiving help and reduced death risk. Brown, a researcher at the University of Michigan's Institute for Social Research, concluded that those who provided no instrumental or emotional support to others were more than twice as likely to die in the 5 years as people who helped spouses, friends, relatives, and neighbors. Despite concerns that the longevity effects might be due to a healthier individual's greater ability to provide help, the results remained the same after the researchers controlled for functional health, health satisfaction, health behaviors, age, income, education level, and other possible confounders. The researchers concluded that "If giving, rather than receiving, promotes longevity, then interventions that are currently designed to help people feel supported may need to be redesigned so that the emphasis is on what people do to help others" (Brown, Nesse, Vonokur, & Smith, 2003, p. 326).

The Plausibility of Altruistic Causality

Altruism results in deeper and more positive social integration, distraction from personal problems and the anxiety of self-preoccupation, enhanced meaning and purpose as related to well-being, a more active lifestyle that counters cultural pressures toward isolated passivity, and the presence of positive emotions such as kindness that displace harmful negative emotional states. It is entirely plausible, then, to assert that altruism enhances mental and physical health.

It must always be kept in mind that significant findings regarding health in relation to altruism and other phenomena in population studies are expressed (a) on average, (b) across a given population, and (c) all things being equal. In other words, what we can conclude, at best, is that altruism is one of the factors that increases the odds of well-being, better health, or survival in many people; it is no guarantee of good health. This could be said of any ostensible protective factors—for example, good diet, low blood pressure, not smoking, good family history, not living in poverty, nontoxic environment, and educational level.

Studies using biological markers provide a stronger basis for claiming that altruistic emotions and behaviors *cause* better mental or physical health. If someone is depressed or physically disabled, it is less likely that he or she will engage in helping behaviors. In this sense, there is a selection of the healthy into altruism, and this partially explains the better health of altruists. However, there is more to this story. Other-regarding behavior orders and shapes the lives of individuals in profound ways that improves their health and lengthens their lives. People engaged in helping behavior do generally report feeling good about themselves, and this has measurable physiological correlates. Studies using biological markers look at individuals before and after engagement in altruistic moods and behaviors and indicate immune-enhancing biological changes (see the section on physiological advantages).

The argument for causality is further strengthened by the inarguable assertion that emotional states of unselfish love and kindness displace negative emotional states (e.g., rage, hatred, fear), which cause stress and

stress-related illness through adverse impact on immune function (Fredrickson, 2003; Lawler et al., 2003; Sternberg, 2001). Thus, the cultivation of other-regarding affections eliminates negative emotional states that are often harmful to health.

Although it is the case that people who are altruistic must have some baseline of health and functionality, this does diminish the plausibility of the assertion that altruism itself contributes to health. Indeed, a nurse–doctor team based at Duke University Medical Center studied health outcomes of patients with coronary artery disease, hypothesizing that volunteerism may improve the health outcomes of patients previously hospitalized with this condition. The authors drew on evidence from the Duke Heart Center Patient Support Program, which is staffed by former cardiac patients who make regular visits to cardiac inpatients at the medical center. The volunteers report that this role provides them with a heightened sense of purpose for continued progress and reduces the despair or depression that is linked to increased mortality in these patients (Sullivan & Sullivan, 1997).

The idea that human beings are inclined toward helpful prosocial and altruistic behavior seems incontrovertible, and it is highly plausible that the inhibition of such behavior and related emotions would be unhealthy. What conceptual models would help explain the connection between altruism and health? Three closely interwoven models can be suggested: evolutionary biology, physiological advantages, and positive emotion.

Evolutionary Psychology

The association between a kind, generous way of life and health prolongevity can be interpreted in the light of evolutionary psychology. Group selection theory, for example, suggests a powerfully adaptive connection between widely diffuse altruism within groups and group survival. Altruistic behavior within groups confers a competitive advantage against other groups that would be selected for (Sober & Wilson, 1998). Members of a successful group would likely be innately oriented to other-regarding behaviors, the inhibition of which would not be salutary. Anthropologists discovered that early egalitarian societies (such as the bushmen) practice institutionalized or "ecological altruism" where helping others is not an act of volunteerism but a social norm. Perhaps those of us in contemporary technological cultures are isolated in various respects and have strayed too far from out altruistic proclivities (Putnam, 2001).

Lee (2003) posits a considerable evolutionary selective pressure for altruistic generativity in older adults. In contrast to other species, human beings live and work well past their reproductive years. Lee suggests intergenerational transfer as an explanatory factor. A species will evolve to the optimal point of investment of older adults in the well-being of grandchildren. In other words, the selective advantage to youth of grandparenting may explain human longevity well past the stage of reproductive potential. There is some evidence that natural selection is at work through the improved survival rates of grandchildren who are helped by both parents and grandparents. This holds true today in a variety of ethnic groups, including the African American community (Gallup & Jones, 1992). A recent study indicates that older veterans with diagnoses of posttraumatic stress disorder (PTSD) show reduced symptoms after caring for their grandchildren (Hierholzer, 2004). If older adults are oriented toward helping behaviors toward grandchildren, this helping inclination can be manifested in a broader social generativity.

Possibilities for Physiologic Advantages

The fight–flight response, with its well-documented physiological cascade, is adaptive in the face of perceived danger. If the threat continues for an extended period, however, the immune and cardiovascular systems are adversely impacted, weakening the body's defense and making it more susceptible to abnormal internal cellular processes involved in malignant degeneration (Sternberg, 2001). Altruistic emotions can gain dominance over anxiety and fear, turning off the fight–flight response. Immediate and unspecified physiological changes may occur as a result of volunteering and helping others, leading to the so-called helper's high (Luks, 1988). Two thirds of helpers report a distinct physical sensation associated with helping; about half report that they experienced a "high" feeling, whereas 43% felt stronger and more energetic, 28% felt warm, 22% felt calmer and less depressed, 21% experienced greater self-worth, and 13% experienced fewer aches and pains. Despite these reports, the physiological changes that occur in the body during the process of helping others have not yet been scientifically studied. However, Field et al. (1998) showed that older adults who volunteer to give massages to infants at a nursery school have lowered stress hormones, including salivary cortisol and plasma norepinephrine and epinephrine. Lowering of cortisol is associated with less stress (Lewis et al., 2000).

These are interesting results that resonate with Reisman's (1965) "helper-therapy principle"—that is, that the agents of helping behavior benefit in many ways. It would be useful to have additional studies of the physiological effects of helping others (Edwards & Cooper, 1988). Students who were simply asked to watch a film about Mother Teresa's work with the poor and sick in Calcutta showed significant increases in the protective antibody salivary immunoglobulin A (S-IgA) when compared with those watching a more neutral film. Moreover, S-IgA remained high for an

hour after the film in those participants who were asked to focus their minds on times when they had loved or been loved in the past. Thus, "dwelling on love" strengthened the immune system (McClelland, McClelland, & Kirchnit, 1988; McClelland, 1986).

Positive Emotions May Protect or Distract from Negative Ones

Anderson (2003) of the American Psychological Association highlights six dimensions of health:

- Biology (biological well-being)
- Thoughts and actions (psychological and behavioral well-being)
- Environment and relationships (environmental and social well-being)
- Personal achievement and equality (economic well-being)
- Faith and meaning (existential, religious, spiritual well-being)
- Emotions (emotional well-being)

According to the Anderson (2003) model, positive emotions (kindness, other-regarding love, compassion, etc.) enhance health by virtue of pushing aside negative ones. The generous affect that gives rise to love of humanity is usually associated with a certain delight in the affirmation of others; it seems to cast out the fear and anxiety that emerge from preoccupation with self. Anderson draws on a wealth of studies to conclude that "the big three" negative emotions are "sadness/depression, fear/anxiety, and anger/hostility" (p. 243). It is difficult to be angry, resentful, or fearful when one is showing unselfish love toward another person.

Many emotions can evoke the fight–fight response: stress (fear, anxiety, worry, or sense of time pressure), aggressive emotions (e.g., anger, resentment, or bitterness from unforgiveness), and depressive emotions (e.g., sadness; boredom; loss of purpose, meaning, or hope). The consequences of these negative emotional responses are increased susceptibility to disease and worse health outcomes. Little research has examined the effects of altruistic love (compassion, kindness, desire to help others) on immune or cardiovascular function. Insofar as forgiveness is one manifestation of altruistic love, it has been shown that unforgiving thoughts prompt more aversive emotion and significantly higher heart rate and blood pressure changes from baseline. These finding suggest possible mechanisms through which chronic unforgiving responses (grudges) may erode health, whereas forgiving responses may enhance it (Lawler et al., 2003; Witvliet, Ludwig, & Kelly, 2001).

Of course, further research is always welcome: What more can we learn about altruism as a protective factor against morbidity and mortality in the agent and/or the recipient and about the physiological mediators of the altruism–health relation (e.g., changes in immune function, endorphin production, norepinephrine levels, cortisol levels, and blood pressure)? Does sustained altruism promote health, psychological well-being, and high-level wellness in the agent and/or the recipient over a long time? Under what conditions can altruistic actions become "burdens" rather than sources of meaning and fulfillment, and how do spiritual-religious or other world views come into play? Can new assessment instruments for altruism and altruistic love be developed and validated? How can causality be further clarified?

Public Health Significance and Implications

An altruism–health correlation appears established. Might generous emotions and behaviors be taught as an aspect of mental and physical health in schools and the workplace? Could they even be prescribed by healthcare professionals, as has been discussed ethically with respect to physicians and patient spirituality (Post, Pulchalski, & Larson, 2000)? Can we bring these empirical studies to the training of health care professionals and thereby encourage greater compassionate love in them for their own sake, as well as for therapeutic efficacy?

Research on the benefits of doing good could spark a movement in public health that focuses on civic engagement and helping behavior within communities. So much of public health is rightly focused on environmental toxins and the control of epidemics (McCullough & Snyder, 2000). However, a positive vision of public health must nurture benevolent affect and helping behavior. Rowe and Kahn (1998) point to the public health benefits of volunteerism for older adults. They include a brief discussion of some examples of volunteerism, pointing out that older adults for the most part agree with these two statements: "Life is not worth living if one cannot contribute to the well-being of others" and "Older people who no longer work should contribute through community service" (p. 178). They also point out that "fewer than one-third of all older men and women work as volunteers and those who do spend, on average, fewer than two hours a week on the job" (p. 180). If these figures are correct—and they can be disputed—a firmly established association between helping behavior and longevity might encourage greater volunteerism in older adults. Rowe and Kahn urge voluntary associations to learn how to "reach out to active and able elderly" (p. 180).

The idea of prescribing altruism as a matter of public health is not unprecedented. The notion that there is a connection between a kindly generous life, well-being, happiness, and health has been understood by ev-

ery mother who has instructed a sullen youngster to "Go out and do something for someone." Current consensus indicates that helping behavior contributes to diminished depression rates in adolescents (Commission on Children at Risk, 2003).

Indeed, the transition in the 1820s in the United States and England from the maltreatment of mentally ill individuals—usually bound in shackles and physically abused—to "moral treatment" was based not only on treating the insane with kindness and sympathy but on occupying their time with chores and other helping behaviors (Clouette & Deslandes, 1997). Another example of the therapeutic use of altruism can be found in the Twelve Steps of Alcoholics Anonymous (AA). Step 12 requires the recovering alcoholic to help other persons with alcoholism. The framework is one of paradox: The recovering individual who helps others with this disease is to do so freely and with no expectation of reward, "And then he discovers that by the divine paradox of this kind of giving he has found his own reward, whether his brother has yet received anything or not" (AA, 1952, p. 109). The AA member finds "no joy greater than in a Twelfth Step job well done" (AA, 1952, p. 110). Those experienced with recovering alcoholics will widely attest as to how important such individuals feel helping others is with regard to their own continued recovery; however, much such helping behavior is in effect an AA recruitment activity. AA is in certain respects a sectarian phenomenon, and such groups do often tap into otherwise inhibited altruistic capacities.

To cite a somewhat more controversial instance of untapped altruism in relation to well-being, Galanter (1999), based on 2 decades of psychiatric research, concluded that young people who join demanding charismatic groups are generally relieved of neurotic distress and depression through enhanced in-group altruism, however much they may be subject to authoritative manipulation and misplaced utopian idealism. It is certainly not always the case that altruistic emotions and behavior are directed in worthwhile ways (Post, 1992).

However, a great deal of altruistic idealism exists outside of such contexts. One of the oldest of the National Opinion Research Center's landmark surveys is the General Social Survey, which has been administered across a national sample of Americans 24 times since 1972. Its 2002 administration, with support from the Fetzer Institute, included an item developed by Dr. Lynn G. Underwood, then with Fetzer, regarding unselfish love: "I feel a selfless caring for others." Based on sample methods of the American population that enjoy the highest level of confidence across a highly diversified sample pool, the following results were found with regard to the previous question: many times a day (9.8% of respondents), every day (13.2% of respondents), most days (20.3% of respondents), some days (24.0% of respondents), once in a while (22.3% of respondents), and never or almost never (10.4% of respondents). Feelings do not always translate into helping behavior, but these results are cause for hope (Fetzer Institute, 2002).

The essential conclusion of this article is that a strong correlation exists between the well-being, happiness, health, and longevity of people who are emotionally kind and compassionate in their charitable helping activities—as long as they are not overwhelmed, and here world view may come into play. Of course, this is a population generalization that provides no guarantees for the individual. However, there is wisdom in the words of Proverbs 11:25 "a generous man will prosper, he who refreshes others will himself be refreshed" (Revised Standard Version). It can be said that a generous life is a happier and healthier one. The freedom from a solipsistic life in which one relates to others only in so far as they contribute to one's own agendas, as well as a general freedom from the narrow concerns of the self, bring us closer to our true and healthier nature, as all significant spiritual and moral traditions prescribe. Here, epidemiology and the spirituality of love can enter a fruitful dialogue (Levin, 2000). Life can be difficult, and death should not be denied. Love, however, makes the way easier and healthier both for those who give and those who receive.

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APPENDIX
Representative List of Cited Research and Major Findings

Reference/ Author	Study Focus	Key Findings
Danner et al., 2001	Nuns short stories and Alzheimers disease	Nuns who expressed the most positive emotions lived 10 years longer and were also somewhat protected from dementia
Fredrickson, 2003	Summary article	When people feel good, their thinking becomes more creative, integrative, flexible, and open to information Positive emotions enhanced psychological and physical resistance
	Health benefits for recipients (those who receive compassionate love)	
Nerem et al., 1980	Affectionate care of rabbits (petting, etc.)	60% less arthrosclerosis
Medalie and Goldbourt, 1976	Loving and supported wives (perception of)	Half the rate of angina for husbands who perceived their wives as being loving and supportive vs. those who felt unloved and unsupported
Medalie et al., 1992	A wife's love	Lowered risk of duodenal ulcers
Russek and Schwartz, 1997	Perceptions of love felt from parents	91% who did not perceive that they had warm relationships with their mothers had midlife diseases (coronary artery disease, high blood pressure, duodenal ulcer, and alcoholism) vs. 45% who reported having a warm relationship with their mothers 82% of low warmth and closeness with their father has such diagnosis vs. 50% who reported high warmth and closeness 100% who reported low warmth and closeness from both parents had midlife diagnoses of diseases
Epel et al., 2004	Stress accelerates aging	Women with highest levels of perceived stress had telomeres that were, on average, shortened by one decade vs. low stress women
	Altruism, happiness and health	
Huner and Linn, 1981	Retires older than 65 who volunteered	Volunteers significantly higher on life satisfaction and will to live and fewer symptoms of depression, anxiety, and somatization
Dulin and Hill, 2003; Liang et al., 2001: Morrow-Howell, et al., 2003	Studies of older adults	Association between altruistic activities and well-being and life satisfaction
Midlarsky and Kahana, 1994	Adult altruism associated with well-being, happiness	Improved morale, self-esteem, positive affect, and well being
Volunteerism		
Musick and Wilson, 2003	Volunteerism	Reduction in depressive symptoms
Krueger et al., 2001	Volunteerism	Happiness, enhanced well-being
Schwartz et al., 2003	Altruistic social behaviors effect on mental and physical health (anxiety and depression)	Giving help was more significantly associated with better mental health than was receiving help. But "feeling overwhelmed by others' demands has a stronger negative relationship with mental health than helping others had a positive one."
Moen et al., 1993	Physical health of mothers who volunteered over a 30-year period	52% who did not belong to a volunteer organization had experienced a major illness vs. only 36% for those who did belong to one
Musik et al., 1999	Volunteerism and risk of death	Moderate amount of volunteerism associated with lower risk of death
Oman, Thoressen, and McMahon, 1999	Volunteerism and risk of death	Those who volunteered for 2 or more organizations had a 63% lower likelihood of dying during the study period than non-volunteers. After controlling for health status: 44% reduction in mortality associated with high volunteerism 39% reduction with physical mobility 30% reduction for exercising 4 times a week 29% reduction for weekly religious service attendance. 49% reduction for not smoking

APPENDIX *(continued)*

Reference/ Author	Study Focus	Key Findings
Krause et al., 1999	Study of older adults in Japan	Those who provided more assistance to others were significantly more likely to indicate that their physical health was better
Ironson et al., 2002	Study of Long Term AIDS survivors	Survivors were significantly more likely to be spiritual or religious This effect was mediated by "helping others with HIV"
Brown et al., 2003	Older couples	Found an association between reduced risk of dying and giving help, but no association between receiving help and reduced death risk "Those who provided no instrumental or emotional support to others were more than twice as likely to die in the five years as people who helped (others)"
	Miscellaneous other studies cited	
Sullivan and Sullivan, 1997	Duke study of post coronary artery disease volunteers (after their heart attacks)	Volunteers reported a heightened sense of purpose and reduced sense of despair or depression that is linked to increased mortality in these patients
Hierholzer, 2004	Older veterans with posttraumatic stress disorder (PTSD)	Showed reduced symptoms after caring for their grandchildren
Luks, 1988	"Helper's high"	Two thirds of helpers report a distinct physical sensation associated with helping: About half report a "high" feeling 43% felt stronger and more energetic 28% felt warm 22% felt calmer and less depressed 21% felt greater self-worth 13% experienced fewer aches and pains
Field et al., 1998	Older adults massaging infants	Lowered stress hormones, including salivary cortisol and plasma norepinephrine and epinephrine
McClelland et al., 1988	Watching a film about Mother Teresa's work, or "dwelling on love"	Significant increase in the protective salivary immunoglobin A (S-IgA)
Commission on Children at Risk, 2003	Adolescents and depression	Helping behavior contributes to diminished depression rates in adolescents (current consensus)