# It's Good to Be Good: Science Says It's So

**Research Demonstrates That People Who Help Others Usually Have Healthier, Happier Lives** 



BY STEPHEN G. POST, Ph.D. Dr. Post is professor and director, Center for Medical Humanities, Compassionate Care, and Bioethics, Stony Brook University, Stony Brook, N.Y.

hilosophers, religious leaders, mystics and poets have for millennia said, in various oft-quoted phrases, that it is good to be good to others. Call it karma, call it the boomerang effect, call it the sea of life; the wisdom of the ages has it that actions on behalf of others have a payback feature: the benefits of unselfish acts revert back to the giver. Virtue, as the saying goes, is its own reward.

Increasingly, during the past few decades, science has been chiming in, putting this ancient wisdom to the test. In study after study, a striking amount of evidence demonstrates that, while we may understand the benefits of benevolence as devolving chiefly to the well-being of its recipients, doing good nourishes the giver as well. Depending on what a given study sets out to measure, the documented benefits may be psychological or physical, or both.

Of course there is more to a healthy life than doing unto others. Many recommendations for staying healthy are sound. For instance, studies show that exercise and diet make a difference, as does a wide circle of friends, a happy marriage and a good night's sleep. But the focus of this article is to demonstrate scientific support for the claim that efforts on behalf of another's wellbeing is an important factor in living both a happier and a healthier life.

The data demonstrating the connection between living a loving and generous life and living a happier and healthier life have enormous implications for how we think about human nature, the moral and spiritual life, and wellbeing in general. The data suggest that the health-promoting benefits of doing good is a truism of human nature — an aspect of what is known as "natural law."

This article will review a sampling of the studies going back several decades that link a person's benevolent actions and his or her personal happiness and health.<sup>1</sup> The studies look at a variety of vehicles for doing good, including participation in informal helping networks or self-help groups; serving others while employed in a helping profession or as a volunteer, and even philanthropy – that is, spending one's money in ways that benefit others. What results show is that the benefits of benevolence accrue to both mind and body, promoting higher levels of both psychological and physical functioning, and often contributing to a longer life.

The article will briefly note, too, a couple of caveats to the thesis that doing good is good for us, such as the potentially negative benefits of overdoing good works, and questions related to causality.

# **'HELPER THERAPY'**

Gen. H. Norman Schwarzkopf, Jr., former Commander of the U.S. Central Command, has been credited with saying, "You can't help someone get up a hill without getting closer to the top yourself." This truism, long understood by people who successfully participate in self-help groups, was first formalized by a psychologist in a widely-cited article by Frank Riessman that appeared in Social Work.2 Riessman, a distinguished social psychologist and founding editor of the journal *Social Policy*, defined the "helper therapy" principle on the basis of his observations of numerous self-help groups, in which helping others is deemed essential to helping oneself. Riessman observed, in fact, that the act of helping another heals the helper more than the person helped. A bit later, in the early 1970s, the "helper therapy" principle was noted in a few premier psychiatry journals, in which professional



researchers reported findings that service to others was beneficial in a variety of contexts.

Today, "helper therapy" is assumed in numerous 12-step programs aimed at helping people recover from addictions that negatively affect their lives. Whether the group is focused on weight loss, smoking cessation, substance abuse, alcoholism, mental illness and recovery, or countless other needs, a defining feature is that people motivated by a desire to heal themselves are engaged in mutual support. The 12-step groups have adopted the view that people who have experienced a problem can help each other more effectively than professionals can.

A study involving participants in the oldest of the 12-step programs, Alcoholics Anonymous, is among those that have examined the relationship between helping other alcoholics to recover and incidences of relapse in the year following treatment - a component so central to the thinking of Bill W., founder of the program, that he summed up the entire 12 steps in terms of surrender to a higher power and service to others. Data derived from a prospective study called Project MATCH, by researchers at Brown University Medical School<sup>3</sup> suggests that Bill W.'s thinking was right. They found that recovering alcoholics engaged in helping other alcoholics achieve sobriety were significantly less likely to relapse in the year following treatment. Among those who helped other alcoholics (8 percent of the study population), 40 percent successfully avoided alcohol in the year following treatment, compared to 22 percent of those unengaged in helping others to recover.

Other researchers have put the principle to the test in studies focusing on illnesses other than addiction. In one, a group of people with multiple sclerosis were trained to provide compassionate support by placing monthly supportive telephone calls, lasting approximately 15 minutes, to other sufferers of the disease. Over two years, the helpers showed "pronounced improvement in self-confidence, self-esteem, depression and role functioning."4 The helpers especially benefited in terms of protection against depression and anxiety. The researchers posit that providing peer support, more than receiving peer support, allows the helpers to break away from patterns of selfreference, thereby producing a shift in quality of life and personal meaning.





Studies of people suffering from cancer, cardiac disease, chronic pain or AIDS produced similar results. One study at Stanford University that impressed the research community randomly assigned women with advanced metastatic breast cancer to either routine care, or routine care plus a cancer patient support group, which provided a safe and caring setting for discussion of issues.<sup>5</sup> Participation in the support group included receiving support as well as listening attentively and demonstrating compassion toward each other. The study's author expected that the support group would enhance patients' mood, but not their survival. As it turned out, the women in the support group survived twice as long (18) months compared with nine months) as the women without support.

As noted, the benefits of helping others may be both psychological and physical – aspects of health for which science is demonstrating links. At the Duke University Heart Center Patient Support Program, researchers concluded that forSeveral studies have demonstrated the long-term health benefits associated with volunteering. Above: two employees at Starwood Hotels move a desk as part of a painting and cleanup project at a Harlem, N.Y., school. Left: a grandparent helps a student at a school in Mankato, Minn. "Not everyone can be Gandhi, but each of us has the power to make sure our own lives count – and it's those millions of lives that will ultimately build a better world ..." JEFFREY SKOLL,

JEFFREY SKOLL, eBAY PRESIDENT mer cardiac patients who make regular visits to support inpatient cardiac patients have a heightened sense of purpose and reduced levels of despair and depression, which are linked to mortality.6 (In yet another study, individuals suffering from chronic pain experienced decreased pain intensity, levels of disability, and depression when they began to serve as peer volunteers for others suffering from chronic pain.<sup>7</sup> In a study that included a religious/spiritual component, researchers at the University of Miami compared the characteristics of long-term survivors with AIDS with a control group and found that the long-term survivors were significantly more likely to be spiritual or religious, as well as more likely to reach out to others with a diagnosis of HIVpositive.8 More recently, the Miami research team has discovered that altruism as a component of personality, as measured by a personality questionnaire given to persons with HIV, is significantly related to lower levels of stress hormones thought to affect progress of the disease.9

Other research builds on the now uncontroversial claim that socially connected people in general outlive those who lead more isolated lives. In a study focusing on informal helping behavior in various areas of life and seeking the basis for an apparent relationship between social networks and longevity, the author concluded that social connectedness results in a 20 percent reduction in risk of death, and that the effects of *giving to* others overwhelm the effects of *receiving help from* others.<sup>10</sup>

# **HEALTH THROUGH SERVICE**

We know from a recent survey by the National Opinion Research Center, in which 27,000 adults were questioned about job satisfaction and general happiness, that those with jobs that involve helping or serving others (along with those involving creative forms of work, such as writing or painting) are more satisfied with their work and express a greater sense of overall happiness than those whose jobs do not permit altruistic gratification.<sup>11</sup> Professions listed among the most gratifying by those engaged in them included clergy, physical therapists, special education teachers and psychologists.

Similarly, research shows that people who serve others as volunteers report greater happiness and better health. In one impressive study that began in 1956, 427 wives and mothers who lived in upstate New York were followed for 30 years by researchers at Cornell University. The researchers were able to conclude that, regardless of number of children, marital status, occupation, education, or social class, those women who engaged in volunteer work to help other people at least once a week lived longer and had better physical functioning, even after adjusting for baseline health status.<sup>12</sup> In another study, older people who volunteered for 100 hours or more in 1998 were approximately 30 percent less likely to experience limitations in physical functioning when compared with non-volunteers or those volunteering fewer hours per year, even after adjusting for smoking, exercise, social connections, paid employment, health status, baseline functional limitations, socioeconomic status, and demographics.13 In a third example, after making similar adjustments, researchers who analyzed data from 1.500 adults between 1986 and 1994 found that volunteering predicted less functional disability three to five years later.14

Altruism is associated with substantial reduction in mortality rates. In a large longitudinal survey of older adults (55 or older at the time of the first interview), researchers from the Buck Center for Research and Aging and Berkeley University tested the hypothesis that volunteerism reduces risk of mortality.15 The median number of hours volunteered per week was four, and participants were divided into those who volunteered less than or more than four hours a week. After adjusting for a variety of health and socioeconomic variables, researchers found a statistically significant association between high volunteerism and decreased mortality rate, which remained after correction for health status, resulting in an overall 44 percent reduction in mortality.

In another study, researchers from the Center for Health Care Evaluation and Stanford University, using a large national sample of older adults from the Longitudinal Study of Aging, found support for their hypothesis that frequent volunteering is associated with decreased mortality risk when the effects of socio-demographics, medical status, physical activity, and social integration are controlled.<sup>16</sup> When health and disability variables were factored in, those who sometimes volunteered had a 25 percent reduction in mortality risk, and those who frequently volun-



# **ABOUT THE AUTHOR**

Stephen Post, Ph.D., is widely recognized as a leader in the study of altruism, love and compassion who integrates scientific research, philosophy and religious thought in his work. In addition to his current responsibilities at Stony Brook University, he is a senior fellow in the Center for the Study of Law and Religion at Emory University, and an elected Hastings Center Fellow – that is, an elected member of an association of leading researchers influential in the fields in which the Hastings Center is engaged.

Post is president of the Institute for Research on Unlimited Love, a not-forprofit organization established in July 2001 with support from the John Templeton Foundation. The Institute



his Ph.D. on the relationship between other-regarding love and happiness at the University of Chicago.

has supported

cal research at

high-level empiri-

more than 50 uni-

versities on topics

related to unself-

worked in biologi-

before completing

ish love and its

effects. Post

cal research

He has more than 150 articles to his credit and has written seven scholarly books on altruism and love. He is the editor of eight other books. His most recent book, co-authored with Jill Neimark, is titled Why Good Things Happen to Good People: How to Live a Longer, Healthier, Happier Life by the Simple Act of Giving. Learn more about the book at www.whygoodthingshappen.com.

In addition to his work in altruism and love, Post has focused on ethical and social issues surrounding persons with developmental cognitive disabilities and dementia. He is an elected member of the medical and scientific advisory panel of Alzheimer's Disease International. He also authored *The Moral Challenge of Alzheimer Disease: Ethical Issues from Diagnosis to Dying* (The Johns Hopkins University Press). Contact the author at post@stephengpost.com.

teered had a 33 percent reduction. When physical activity variables were included, those who sometimes volunteered had a 23 percent reduction in mortality risk, and those who frequently volunteered had a 31 percent reduction. When social functioning and support variables were included, there was a 19 percent reduction in mortality for those who volunteered frequently. The authors concluded, "We found that more frequent volunteering is associated with delayed mortality even when the effects of socio-demographics, medical and disability characteristics, self-ratings of physical activity and social integration and support are controlled. The effect of volunteering on mortality appears to be more than a proxy for the wellknown effects of social support, health, age, and other variables."

Although it may appear from the studies above that the benefits of volunteering are weighted toward older adults, studies of younger people show that benefits accrue to them as well. It has been documented, for instance, that volunteering in adolescence enhances social competence and self-esteem, protects against anti-social behaviors and substance abuse and protects against teen pregnancies and academic failure.<sup>17</sup>

Further, the benefits of starting young appear to bring lifelong benefits. Two studies used longitudinal data to address this question: Do generative qualities in adolescents predict better mental and physical health in adulthood?<sup>18</sup> The authors examined data gathered from two adolescent research cohorts that were first interviewed in California in the 1930s and subsequently interviewed every 10 years until the late 1990s. Generativity, defined as behavior indicative of positive emotions extending to all humanity, was measured in three dimensions: givingness, prosocial competence and social perspective. Study results indicated that generative adolescents indeed do become healthier adults physically and especially psychologically. Despite limitations of the study noted by the authors themselves – that is, the sample size and demographic makeup of relatively homogeneous subjects living in San Francisco's East Bay Area in the 1930s – the study lends crucial support to the notion that it is good to be good across the lifespan.

Philanthropy - using money to help others has been shown in at least one study to produce positive health benefits. Researchers at the National Institute of Neurological Disorders and Stroke have worked with the National Institute on Mental Health and the National Institute on Aging on a collaborative project entitled "Cognitive and Emotional Health Project – The Healthy Brain."19 The goal was to uncover the neurology of unselfish actions that reach out beyond kin to strangers. Researchers have discovered a physiological basis for what has been termed "the helper's high" - the warm glow that seems to accompany giving - even when this occurs only in the form of philanthropy. Nineteen subjects were each given money and a list of causes to which they might contribute. Functional magnetic resonance imaging revealed that



#### It's Good to Be Good: Science Says It's So



This 20-year-old Xavier University student changes a lightbulb as part of an energy-saving program in New Orleans. Volunteering regularly at a young age may offer health benefits in the long run.

making a donation activated the mesolimbic pathway, the brain's reward center that is responsible for dopamine-mediated euphoria. In short, research shows that when people do "unto others" in kindness, it lights up the primitive part of the brain that lets us also experience pleasure through eating and having sex. This is good news: Giving "unto others" goes with, rather than against, the evolved social nature of the human.

It is worth noting, that *just thinking about giving* seems to have a physiological impact. In the 1980s, the renowned Harvard behavioral psychologist David McClelland discovered that Harvard students who were asked to watch a film about Mother Teresa's work tending to orphans in Calcutta showed significant increases in the protective antibody salivary immunoglobulin A (S-IgA) over those watching a neutral film. McClelland termed this the "Mother Teresa Effect." Moreover, S-IgA remained high for an hour after the film in those subjects who were asked to focus their minds on times when they had loved or been loved. Thus, researchers concluded that "dwelling on love" strengthened the immune system.  $^{\scriptscriptstyle 20}$ 

# THE PROTECTIVE FUNCTION

What is it about giving that is so protective? This becomes easier to understand when we acknowledge the destructive effects of negative emotions and self-centeredness on health. In a study that goes back to 1983, researchers at the University of California analyzed the speech patterns of 160 "type A" personality subjects. The study showed that high numbers of self-references in speech significantly correlated with heart disease, after controlling for age, blood pressure, and choles-terol.<sup>21</sup> The researchers suggested that a healthier heart can result when a person is more giving, listens attentively when others talk, and engages in unselfish acts.

Further research on hostility and coronary disease was conducted by Redford B. Williams, the distinguished cardiologist at Duke University.22 Williams used 50 questions pertaining to hostile emotions, attitudes, and actions from the "hostility scale." Colleagues studied 255 doctors who had taken the inventory in the late 1950s while in medical school at the University of North Carolina. As they aged from 25 to 50, the doctors whose hostility scores were in the upper half were four to five times more likely than those with lower scores to develop coronary disease, and nearly seven times more likely to die of any disease. Similar results were found with many others groups, including employees of Western Electric, who showed increased cancer deaths as well. Among a group of law students at University of North Carolina took the Minnesota Multiphasic Personality Inventory in the 1950s, fully 20 percent with hostility scores in the highest quarter of their class had died by age 50, in contrast with only 4 percent of those in the lowest quarter. Roughly the same outcome was found among medical students.

A study at Ohio State University's Institute for Behavioral Medicine Research using the hostility scale with 42 married couples showed that negative emotional states also affect wound healing. Wounds took a day longer to heal after an argument than after supportive discussion, and two days longer in persons demonstrating high levels of hostility when compared to their low hostility counterparts.<sup>23</sup>

Many studies using the hostility scale have con-



cluded that hostility is truly a health-damaging personality trait. Most researchers explain the increased mortality in hostile individuals from coronary disease and cancer on elevated stress hormones cortisol and adrenaline (also known as epinephrine), and a related lowering of the immune response, perhaps mediated by lowered serotonin levels.

Although some studies have shown that certain kinds of stress, at relatively low levels, may be beneficial to human health, the relationship between excessive stress and disease has been well documented. In response to stressful emotions such as rage or anger, the body secretes hormones that prepare it for physical exertion; stress hormones make the heart and lungs work faster, tighten muscles, slow digestion, and elevate blood pressure. Perpetual stressful emotions are like acid searing metal, while positive emotions have a marked physiological impact, if only by virtue of displacing negative ones, that promotes health and healing.

When people reach out to others, negative emotions, such as hostility, rumination, resentment, and fear are displaced by positive emotions in a phenomenon sometimes referred to as the aforementioned "helper's high": a pleasurable and euphoric emotional sensation of energy and warmth. The "helper's high" was first described by Allan Luks,<sup>24</sup> who surveyed thousands of volunteers across the United States and found that people who helped other people consistently stated that their health improved when they started to volunteer. About half reported experiencing a "high" feeling; 43 percent felt stronger and more energetic; 28 percent experienced a sensation of inner warmth; 22 percent felt calmer and less depressed; 21 percent experienced greater feelings of self-worth, and 13 percent experienced fewer aches and pains. A researcher who has studied informal helping behavior in various areas of life argues that giving buffers stress, and involves a brain-emotion-immune nexus and complex hormones, such as oxytoxin and vasopressin.25

Some studies suggest that when volunteering is combined with religious involvement, the beneficial results are enhanced. For instance, a decadelong study that focused on volunteering through a formal organization noted that the benefits of volunteering are consistently complemented by a reframing of life's purposes, and that among people in whom volunteering is combined with religious involvement, a related synergy provides more health benefits than either alone.<sup>26</sup>

# Some Caveats

One significant caveat should be noted in regard to the thesis on which this article is based. While solid evidence exists to show that it's good for us to be good to others – and many other articles beyond those listed here could be cited – it is important to recognize that, just as excessive focus on self may be unhealthy, an excessive focus on others may be unhealthy as well.

# It is important to recognize that, just as excessive focus on self may be unhealthy, an excessive focus on others may be unhealthy as well.

Although just a few hours a week of volunteer work makes a difference in self-reported happiness and mood, "doing unto others" to overwhelming degrees can become stressful in itself and can have adverse health consequences. A problem described by psychologist Martin L. Hoffman as "empathic overarousal" may occur for those locked into situations requiring intense empathy and generous actions: health care workers who interact daily with trauma survivors, Red Cross workers who are involved in helping the victims of major catastrophes, activists who work with the poorest of the poor, and pastors who are providing love and support for needy congregants around the clock.27 Charles Figley termed the phenomenon "compassion fatigue.<sup>28</sup> Results can include severe stress, disrupted cognitive functioning, distancing from close relationships, professional attrition, and depression. When caregivers are dealing with suffering on an ongoing basis, it is essential that they step back for replenishment. Care of self must be managed to assure that we do "unto others" in ways that allow us to flourish over the long run. Balance, rhythm, time away, recreation, and perhaps spiritual practices are vital to keeping one's perspective fresh.

It should be further noted that, based on the data, there is not a linear relationship between the extent of volunteering and health benefits - i.e., more volunteering does not necessarily translate into greater benefits. Rather, there is a "volun-



OUR HANDS

Ν

### It's Good to Be Good: Science Says It's So

teering threshold" that does bring health benefits, and once that threshold is reached (perhaps as little as a couple of hours a week), no additional benefits are acquired.

A second note related to causality must be added. Skeptics will appropriately raise the question of cause and effect - i.e., are psychological and physical benefits produced by doing unto others, or is it rather the case that healthier people are better able to engage in helping behaviors? In partial response, with a nod to the 18th century Scottish philosopher David Hume, it is fair to say that perfect causality can never be proven perfectly.

"Nothing will ever be attempted if all possible objections must first be overcome."

SAMUEL JOHNSON, ENGLISH AUTHOR Nevertheless, we can say with certainty that it is good to be good. Not only ancient wisdom, but also science says it is so. Nobel Peace Prize winner Dr. Albert Schweitzer once said, "The only ones among you who will be really happy are those who have sought and found how to serve." The right dose, method, and context will vary from person to person, but the principle has been scientifically established. The welfare of oneself (self-fulfillment) and of others (self-sacrifice) are inseparable and interrelated components of the healthy human personality in a healthy environment. Or, put another way, we must aim at something higher than happiness in order to receive it.

Comment on this article at www.chausa.org/hp.

## NOTES

- 1. The studies cited in this article are based on U.S. research. It should be noted, however, that the connections between working for the well-being of others and achieving well-being for oneself are capturing attention worldwide. For example, on Oct. 22, 2008, the leading British governmental scientific "think tank," Foresight, headed by the government's chief scientist, Professor John Beddington, and comprised of more than 400 distinguished researchers, issued a major report in which they cited "giving to neighbors and communities" as one of the five key elements of enhanced well-being and prevention of mental illness. See Foresight Project on Mental Capital and Wellbeing, Mental Capital and Wellbeing: Making the Most of Ourselves in the 21st century final project report (London: Government Office of Science, 2008), available online at www.foresight.gov.uk.
- Frank Riessman, "The 'Helper' Therapy Principle," Social Work, 10, no. 2 (1965): 27-32.
- 3. Maria Pagano et al., "Helping Other Alcoholics in

Alcoholics Anonymous and Drinking Outcomes: Findings from Project MATCH," *Journal of Studies on Alcohol*, 65, no. 6 (2004): 766-773.

- 4. Carolyn Schwartz, "Teaching Coping Skills Enhances Quality of Life More Than Peer Support: Results of a Randomized Clinical Trial with Multiple Sclerosis Patients." *Health Psychology*, 18, no. 3 (1999): 211-220.
- David Spiegel et al., "Effect of Psychosocial Treatment on Survival of Cancer Patients with Metastatic Breast Cancer," *Lancet* 2 (1989): 888-890.
- Gwynn Sullivan and Martin Sullivan, "Promoting Wellness in Cardiac Rehabilitation: Exploring the Role of Altruism *Journal of Cardiovascular Nursing*, 11, no. 3 (1997): 43-52.
- Paul Arnstein, et al., "From Chronic Pain Patient to Peer: Benefits and Risks of Volunteering," *Pain Management Nurses*, 3, no. 3 (2002): 94-103.
- Gail Ironson, G. F. Solomon and E.G. Balbin, "Spirituality and Religiousness Are Associated with Long Survival, Health Behaviors, Less Distress, and Lower Cortisol in People Living with HIV/AIDS," Annals of Behavioral Medicine, 24 (2002): 34-40.
- 9. Gail Ironson, "Altruism and Health in HIV," in Altruism and Health: Perspectives from Empirical Research, ed. S.G. Post (New York: Oxford University Press, 2007): 70-81.
- 10. Stephanie Brown et al., "Providing Social Support May Be More Beneficial Than Receiving It: Results from a Prospective Study of Mortality," *Psychological Science*, 14, no. 4 (2003): 320-327.
- 11. Tom Smith, Job Satisfaction in the United States (Chicago: National Opinion Research Center/University of Chicago, 2007). Available online at www.news.uchicago.edu.
- Phyllis Moen et al., "Social Integration and Longevity: An Event History Analysis of Women's Roles and Resilience," *American Sociological Review*, 54, (1989): 635-647.
- 13. Ming-Ching Luoh and A. Regula Herzog, "Individual Consequences of Volunteer and Paid Work in Old Age: Health and Mortality," *Journal of Health and Social Behavior*, 43 (2002): 490-509.
- Nancy Morrow-Howell et al., "Effects of Volunteering on the Well-being of Older Adults," *Journals of Gerontology Series B-Psychological Sciences: Social Sciences*, 58, no. 3 (2003): 137-145.
- 15. Doug Oman, Carl Thoresen and Kay McMahon, "Volunteerism and Mortality among the Communitydwelling Elderly," *Journal of Health Psychology* 4 (1999): 301-316.
- 16. Alex Harris and Carl Thoresen, "Volunteering is Associated with Delayed Mortality in Older People: Analysis of the Longitudinal Study of Aging," *Journal* of Health Psychology, 10, no. 6 (2005).739-752.
- 17. Joseph Allen et al., "Preventing Teen Pregnancy and Academic Failure: Experimental Evaluation of a Developmentally Based Approach," *Child Development* 68, (1997): 729-742.
- Michelle Dillon and Paul Wink, In the Course of a Lifetime: Tracing Religious Belief, Practice, and Change (Berkeley, Calif.: University of California Press, 2007).



- Jorge Moll et al., "Human Fronto-Mesolimbic Networks Guide Decisions about Charitable Donation," Proceedings of the National Academy of Sciences, 103, no. 42 (2006): 15623-15628. For related findings, see Rachel Bachner-Melman et al., "Dopaminergic Polymorphisms Associated with Self-Report Measures of Human Altruism: A Fresh Phenotype for the Dopamine D4 Receptor," Molecular Psychiatry, 10 (2005): 333-335; and William T. Harbaugh et al., "Neural Responses to Taxation and Voluntary Giving Reveal Motives for Charitable Donations," Science, 316, no. 5831, 15 (June 2007): 1622-1625.
- David McClelland and Carol Kirchnit, "The Effect of Motivational Arousal Through Films on Salivary Immunoglobulin A," *Psychology and Health 2* (1988): 31-52.
- Larry Scherwitz et al., "Type A Behavior, Self-Involvement, and Coronary Atherosclerosis," Psychosomatic Medicine, 45, vol. 1 (1983): 47-57.
- 22. Redford Williams and Virginia Williams, Anger Kills: Seventeen Strategies for Controlling the Hostility That Can Harm Your Health (New York: Harper-Perennial, 1994).

- Janice Kiecolt-Glaser et al., "Hostile Marital Interactions, Proinflammatory Cytokine Production, and Wound Healing," Archives of General Psychiatry, 2 (2005): 1377-1384.
- Allan Luks, "Helper's High: Volunteering Makes People Feel Good, Physically and Emotionally," *Psychology Today*, 22, no. 10 (October 1988): 34-42.
- 25. Stephanie Brown et al., "Close Relationships and Health Through the Lens of Selective Investment Theory," in Altruism and Health: Perspectives from Empirical Research, ed. Stephen Post (New York: Oxford University Press, 2007), 299-313.
- Doug Oman, "Does Volunteering Foster Physical Health and Longevity?" in Altruism and Health: Perspectives from Empirical Research, ed. S.G. Post (New York: Oxford University Press, 2007), 15-32.
- Martin Hoffman, "Empathy and Prosocial Behavior," in Handbook of Emotions, 3rd edition, eds. Michael Lewis, Jeannette Haviland-Jones and Lisa Feldman-Barrett (New York: Guilford Press, 2008), 440-455.
- Charles Figley, Compassion Fatigue: Coping with Secondary Traumatic Stress Disorder in Those Who Treat the Traumatized (New York: Brunner/Mazael, 1995).



Reprinted from *Health Progress*, July - August 2009. Copyright © 2009 by The Catholic Health Association of the United States