

Everett L. Worthington, Jr. has dedicated his career to the study of forgiveness. He has found that it carries tremendous health and social benefits—and he's taken his research to heart.

The New Science of FORGIVENESS

When Chris Carrier was 10 years old, he was abducted near his Florida home, taken into the swamps, stabbed repeatedly in the chest and abdomen with an ice pick, and then shot through the temple with a handgun. Remarkably, hours after being shot, he awoke with a headache, unable to see out of one eye. He stumbled to the highway and stopped a car, which took him to the hospital.

Years later, a police officer told Chris that the man suspected of his abduction lay close to death. "Confront him," suggested the officer. Chris did more than that. He comforted his attacker during the man's final weeks of life, and ultimately forgave him, bringing peace to them both.

Chris Carrier's act of forgiveness might seem unfathomable to some, an act of extreme charity or even foolishness. Indeed, our culture seems to perceive forgiveness as a sign of weakness, submission, or both. Often we find it easier to stigmatize or denigrate our enemies than to empathize with or forgive them. And in a society as competitive as ours, people may hesitate to forgive because they don't want to relinquish the upper hand in a relationship. "It is much more agreeable to offend and later ask forgiveness than to be offended and grant forgiveness," said the philosopher Friedrich Nietzsche. I think many people today are inclined to agree with him.

Surely now is a time when the world could use some more forgiveness. Americans resent the Muslim world for September 11. Some hold a grudge against President Bush and supporters of the war in Iraq, while oth-

ers begrudge war protestors. Iraqis and much of the Middle East feel humiliated by the United States. Diplomats in the United Nations bicker and insult each other, igniting or re-igniting national rivalries. Still, many people hesitate to ask for or grant forgiveness when they feel they have nothing to gain in return.

But a new line of research suggests something different. This research has shown that Chris Carrier's story isn't an anomaly. Forgiveness isn't just practiced by saints or martyrs, nor does it benefit only its recipients. Instead, studies are finding connections between forgiveness and physical, mental, and spiritual health, and evidence that it plays a key role in the health of families, communities, and nations. Though this research is still young, it has already produced some exciting findings—and raised some important questions.

Forgiveness and health

Perhaps the most basic question to address first is, What is forgiveness? Though most people probably feel they know what forgiveness means, researchers differ about what actually constitutes forgiveness. I've come to believe that how we define forgiveness usually depends on context. In cases where we hope to forgive a person with whom we do not want a continuing relationship, we usually define forgiveness as reducing or eliminating resentment and motivations toward revenge. My colleagues Michael McCullough, Kenneth Rachal, and I have defined forgiveness in close relationships to include more than merely getting rid of the negative. The forgiving person becomes less motivated to retaliate against

someone who offended him or her, and less motivated to remain estranged from that person. Instead, he becomes more motivated by feelings of goodwill, despite the offender's hurtful actions. In a close relationship, we hope, forgiveness will not only move us past negative emotions, but move us toward a net positive feeling. It doesn't mean forgetting or pardoning an offense.

Unforgiveness, by contrast, seems to be a negative emotional state where an offended person maintains feelings of resentment, hostility, anger, and hatred toward the person who offended him. I began with Chris Carrier's story because it is such a clear example of forgiveness. Although he never forgot or condoned what his attacker did to him, he did replace his negative emotions and desire for retribution with feelings of care and compassion, and a drive toward conciliation.

People can deal with injustices in many ways. They don't have to decide to forgive, and they don't necessarily need to change their emotions. But if they don't change their response in some way, unforgiveness can take its toll on physical, mental, relational, and even spiritual health. By contrast, new research suggests that forgiveness can benefit people's health.

In one study, Charlotte vanOyen Witvliet, a psychologist at Hope College, asked people to think about someone who had hurt, mistreated, or offended them. While they thought about this person and his past offense, she monitored their blood pressure, heart rate, facial muscle tension, and sweat gland activity. To ruminate on an old transgression is to practice unforgiveness. Sure enough, in Witvliet's research, when people



Leigh Wells

recalled a grudge, their physical arousal soared. Their blood pressure and heart rate increased, and they sweated more. Ruminating about their grudges was stressful, and subjects found the rumination unpleasant. It made them feel angry, sad, anxious, and less in control. Witvliet also asked her subjects to try to empathize with their offenders or imagine forgiving them. When they practiced forgiveness, their physical arousal coasted downward. They showed no more of a stress reaction than normal wakefulness produces.

In my own lab, we wanted to determine whether people's stress levels are related to their ability to forgive a romantic partner. We measured levels of cortisol in the saliva of 39 people who rated their relationship as either terrific or terrible. Cortisol is a hormone that metabolizes fat for quick response to stress (and after the stress ends, deposits the fat back where it is easily accessible—around the waist). People with poor (or recently failed) relationships tended to have higher baseline levels of cortisol, and they also scored worse on a test that measures their general willingness to forgive. When they were asked to think about their relationship, they had more cortisol reactivity—

that is, their stress hormone jumped. Those jumps in stress were highly correlated with their unforgiving attitudes toward their partner. People with very happy relationships were not without stresses and strains between them. But forgiving their partner's faults seemed to keep their physical stress in the normal range.

The physical benefits of forgiveness seem to increase with age, according to a recent study led by Loren Toussaint, a psychologist at Luther College in Iowa. Toussaint—along with David Williams, Marc Musick, and Susan Everson—conducted a national survey of nearly 1,500 Americans, asking the degree to which each person practiced and experienced forgiveness (of others, of self, and even if they thought they had experienced forgiveness by God). Participants also reported on their physical and mental health. Toussaint and his colleagues found that older and middle-aged people forgave others more often than did young adults and also felt more forgiven by God. What's more, they found a significant relationship between forgiving others and positive health among middle-aged and older Americans. People over 45 years of age who had forgiven others reported greater satisfaction

with their lives and were less likely to report symptoms of psychological distress such as feelings of nervousness, restlessness, and sadness.

Why might that relationship between unforgiveness and negative health symptoms exist? Consider that hostility is a central part of unforgiveness. Hostility also has been found to be the part of Type A behavior that seems to have the most pernicious health effects, such as a heightened risk of cardiovascular disease. Forsaking a grudge may also free a person from hostility and all its unhealthy consequences.

It probably isn't just hostility and stress that link unforgiveness and poor health. According to a recent review of the literature on forgiveness and health that my colleague Michael Scherer and I recently published, unforgiveness might compromise the immune system at many levels. For instance, our review suggests that unforgiveness might throw off the production of important hormones and even disrupt the way our cells fight off infections, bacteria, and other physical insults like mild periodontal disease.

Forgiveness and relationships

Forgiveness has proven beneficial to a range of relationships, whether it's a family, romantic, or professional relationship. Forgiveness within close relationships is not harder or easier than forgiving absent individuals, such as strangers who rob or assault us or people who have moved away or died since hurting us. In ongoing relationships, forgiveness is simply different. A present partner can make things better or worse. An absent person can't be confronted, but also can't reject a confrontation or compound harms with new hurts.

Johan Karremans and Paul Van Lange in the Netherlands and Caryl Rusbult at the University of North Carolina have, in collaboration and separately, investigated forgiveness in close relationships. People are usually more willing to forgive if they sense trust and a willingness to sacrifice from their partner. The authors predicted that forgiving would be associated with greater well-being, especially in relationships of strong rather than weak commitment. They figured that people in highly committed relationships have more to lose if the relationship fails and so would be willing to make certain sacrifices. They used several methods, such as having people fill out questionnaires, recall past relationships, and assess their present relationships. What they found was that if people were unwilling to sacrifice at times—

Life Scienceby **Everett L. Worthington, Jr.**

The phone rang. My brother Mike's voice was shaky on the other end of the line. "Mom's been murdered."

That morning, Mike had found our 78-year-old mother, Frances Worthington, bludgeoned to death in the doorway to her bedroom. She had apparently interrupted burglars in mid-robbery.

Rage grew inside of me during the seven-hour drive to Tennessee. It swelled as my brother, sister, and I talked about the murder scene. That night I was so angry I couldn't sleep. Around 3 a.m., I began to consider the irony of my situation. I had studied forgiveness scientifically for seven years, but all day the word "forgiveness" hadn't even crossed my mind. I wondered, "Could the forgiveness methods I've taught other people actually help me?"

By this time in 1996, colleagues and I had helped about 1,000 people experience emotional forgiveness by replacing negative, unforgiving emotions with positive emotions like empathy, sympathy, compassion, and love. The last thing I wanted to do was feel anything positive about the murder, but I knew that my anger would solve nothing. Healing could only come from changing my emotions.

I systematically imagined who the perpetrator was and what he must have experienced. I tried to understand his fear and shame at being caught by my mother, and I tried to extend compassion toward him. My own rage was gradually replaced by empathy; my resentment gave way to emotional forgiveness.

Forgiveness is seldom a once-and-for-all-time event. My emotions were complicated when, in the following weeks, a youth confessed, then retracted, then was not arraigned after a grand jury determined that the evidence in the case had been contaminated.

I struggled with this news, but forgiveness held as I extended my empathy toward overworked and unappreciated police and courts. I replaced resentment toward the system with compassion. Years later, I learned that the youth had been killed in a fight, and I felt sad. If he had committed the murder but hadn't repented, now he wouldn't have the chance.

if they wanted to exact revenge rather than practice forgiveness—they often suffered conflict, negative emotions, and poor abilities to compromise when inevitable differences arose.

The researchers also found the relationship between forgiveness and well-being in marriages was stronger than in other relationships. Their findings suggest that the more we invest in a relationship, the more we need a repertoire of good strategies to guide it through troubled times—and the more these strategies will prove satisfying and rewarding. Forgiveness is one of those strategies.

Colleagues and I developed a scale to measure forgiveness between people. We asked people to remember a specific offense in which someone harmed them, and then asked about their motives for revenge and for avoiding the perpetrator. People who showed high motivations for revenge and avoidance had lower relationship satisfaction. People who tended to forgive reported greater relationship quality and also greater commitment to relationships.

People who tended to forgive reported greater relationship quality and also greater commitment to relationships.

Frank Fincham and Julie Hall, at the University of Buffalo, and Steven Beach, at the University of Georgia, recently reviewed 17 empirical studies on forgiveness in relationships. By their analysis, the studies suggest that when partners hurt each other, there is often a shift in their goals for their relationship. They might have previously professed undying love and worked hard to cooperate with their partner, but if this partner betrays them, suddenly they become more competitive. They focus on getting even and keeping score instead of enjoying each other. They concentrate on not losing arguments rather than on compromise. They use past transgressions to remind the partner of his or her failings. Forgiveness, assert Fincham and his colleagues, can help restore more benevolent and cooperative goals to relationships.

Learning forgiveness

These findings suggest that forgiveness has benefits like high self-esteem, better moods, and happier relationships. But skeptical scientists will be quick to ask, "Couldn't it simply be that when people feel good about themselves, feel happy, and feel satisfied with their relationships, they'll forgive almost anything? Could it be that happiness drives forgiveness, not the other way around?" Sometimes that might well be the case. But one way to test this idea is to see whether people—cheerful, sad, and everywhere in between—could learn to become more forgiving and, if they do, how that might affect their mental and physical health. This would imply that forgiveness could be possible for almost anyone, not just the perpetually happy and well-adjusted.

Interventions have been designed for partners seeking to make their marriages better, for parents, victims of incest, men offended because their partner aborted a pregnancy, people in recovery for drug and alcohol problems, divorced partners, and love-deprived adolescents.

Through all these interventions, no one has yet found a silver bullet that helps people forgive instantly. But evidence so far suggests that people of various backgrounds and temperaments can learn to forgive. For instance, Robert Enright has developed a specific 20-step intervention that he has tested rigorously, with encouraging results. In one study, men who reported being hurt by their partner's decision to have an abortion went through 12 90-minute weekly sessions designed to help them forgive. These men showed a significant increase in their levels of forgiveness and significant reductions in their levels of anxiety, anger, and grief when compared with a control group. Enright has reported similar results with other populations, including victims of incest.

Not everyone responds equally to these interventions, and a lot of work still must be done to determine exactly what makes forgiveness interventions most effective. British researchers Peter Woodruff and Tom Farrow are doing some of this important work. Their research suggests that the areas in the brain associated with forgiveness are often deep in the emotional centers, in the region known as the limbic system, rather than in the areas of the cortex usually associated with reasoned judgments. In one study, they asked people to judge the fairness of a transgression and then consider whether to forgive it or empathize with the transgressor. Ten indi-

viduals evaluated several social scenarios while the researchers recorded images of their brain activity. Whether people empathized or forgave, similar areas in the emotion centers of the brain lit up. When those same people thought about the fairness of the same transgression, though, the emotion centers stopped being as active. This could be a clue for interventionists. To help people forgive, help them steer clear of dwelling on how fair a transgression was or how just a solution might be. Instead, get people to see things from the other person's perspective.

There are other clues for encouraging forgiveness. Charlotte Witvliet, Nathaniel Wade, Jack Berry, and I have conducted a set of three studies that show that when people feel positive emotions toward transgressors—such as when they receive apologies or restitution for offenses—they experience changes in physiology, including lowered blood pressure, heart rate, and sweat activity, as well as lowered tension in the frown muscles of the face. When they experience positive emotions toward transgressors, they are also more likely to forgive them. Sincere apologies helped people forgive and calm down. Getting fair restitution on top of an apology magnified the effect. Insincere or incomplete apologies actually riled people up more.

It's important to stress again that forgiveness usually takes time. In fact, in a meta-analysis of all research that measured the impact of forgiveness interventions, Nathaniel Wade and I found that a factor as simple as the amount of time someone spent trying to forgive was highly related to the actual degree of forgiveness experienced.

So, the question I posed at the beginning of this section—does forgiveness drive happiness or vice versa?—seems at least in part answerable by saying that forgiveness is not necessarily something that just comes naturally to people with high self-esteem and stable relationships. Instead, it is something all different kinds of people can learn. With the right kind of practice, its benefits can be available to most of us.

Teaching people to forgive raises some important questions. Are some offenses so heinous that they ought never to be forgiven? Are there times when justice should trump forgiveness? (See sidebar.) Justice and forgiveness do clash at times. I do not advocate forgiving under all circumstances (unless a person's religion dictates it). But I know that a sincere apology, restitution, or a punishment imposed by the proper authori-

ties can often make it easier for victims to grant forgiveness. The big transgressions are not necessarily "unforgivable" because they are big. Instead, big transgressions are often the ones that, if they are ever to be surmounted, must be forgiven.

What we don't know

While we have learned a lot over the past few years, we also realize that our knowledge fills only a tea cup when there is a giant swimming pool of unknowns awaiting discovery.

We know little about how children forgive or how they can learn to forgive. We know that not everyone responds equally to the interventions to promote forgiveness. Who does and doesn't benefit by different forgiveness interventions? How long should interventions last?

We still need to discover how forgiveness can be better promoted in society at large. How can schools, parents, and sport coaches work together in communities to foster cooperation and forgiveness instead of violence? Given the role of forgiveness in religious traditions, should youth programs be created to promote forgiveness at churches, mosques, or synagogues? Can the media serve as a tool for effective education, or can forgiveness education work as an adjunct to therapy by mental health professionals?

Conflicts and transgressions seem inevitable as humans rub against each other. The sharp corners of our personalities irritate and scuff against those with whom we interact on a daily basis. But if the new science of forgiveness has proven anything, it's that these offenses don't need to condemn us to a life of hurt and aggravation. For years, political and religious figures, such as Nelson Mandela and Archbishop Desmond Tutu in South Africa, have demonstrated the beauty and effectiveness of forgiveness in action. Through a harmony of research and practice, I trust that we can continue to foster forgiveness—and continue to study the effects scientifically—to bring health to individuals, relationships, and societies as a whole.

Everett L. Worthington, Jr., Ph.D., is a professor and chair in the department of psychology at Virginia Commonwealth University. He acknowledges support from A Campaign for Forgiveness Research, of which he serves as executive director, for funding preparation of this essay.

Is Anything Unforgivable?

by Jason Marsh

Forgiveness may benefit health and relationships, but that doesn't mean people can—or should—forgive all offenses. Some acts, such as the terrorist attacks of September 11, are so vicious that forgiving them seems improbable—and perhaps even immoral.

Judaism, for instance, teaches that God cannot forgive a sin against another person unless the victim grants forgiveness, making it impossible to receive forgiveness for murder. By that reasoning, the September 11 attacks would certainly seem to be unforgivable.

But some researchers, like psychologist Ervin Staub, have suggested that forgiveness is necessary after acts of murder or even genocide in order to promote healing, reconciliation, and psychological well-being. This idea is consistent with new findings by psychologists Loren Toussaint and Jon Webb.

Toussaint and Webb surveyed more than 400 people six to nine months after September 11, asking the respondents how forgiving they felt toward the terrorists, themselves, and toward other people in general. Their results showed that, not surprisingly, people found it significantly more difficult to forgive the terrorists than to forgive themselves or others. Still, Toussaint and Webb found that feelings of forgiveness toward the terrorists were more common than they had expected—42 percent of respondents seemed willing to consider forgiving the terrorists. Those feelings of forgiveness held regardless of whether respondents reported being directly or indirectly affected by the September 11 attacks.

What's more, people who felt more forgiving toward the terrorists in general reported significantly lower levels of depression and anger and fewer symptoms of post-traumatic stress disorder than people who did not. Toussaint said he was "surprised and amazed" by respondents' ability to forgive.

"You can think of forgiveness as a healing ointment for the incredible wounds people suffer from events as heinous as September 11," he said. "I'm not advocating turning around and forgiving on September 12. But six months later, a fair number of people in our survey suggested that that's what they were at least starting to do."