

The Compassionate Instinct



Think humans are born selfish? Think again. **Dacher Keltner** reveals the compassionate side to human nature.

BY DACHER KELTNER | MARCH 1, 2004

Humans are selfish. It's so easy to say. The same goes for so many assertions that follow. Greed is good. Altruism is an illusion. Cooperation is for suckers. Competition is natural, war inevitable. The bad in human nature is stronger than the good.

These kinds of claims reflect age-old assumptions about emotion. For millennia, we have regarded the emotions as the fount of irrationality, baseness, and sin. The idea of the seven deadly sins takes our destructive passions for granted. Plato compared the human soul to a chariot: the intellect is the driver and the emotions are the horses. Life is a continual struggle to keep the emotions under control.



© Jonathan Payne

Even compassion, the concern we feel for another being's welfare, has been treated with downright derision. Kant saw it as a weak and misguided sentiment: "Such benevolence is called soft-heartedness and should not occur at all among human beings," he said of compassion. Many question whether true compassion exists at all—or whether it is inherently motivated by self-interest.

Recent studies of compassion argue persuasively for a different take on human nature, one that rejects the preeminence of self-interest. These studies support a view of the emotions as rational, functional, and adaptive—a view which has its origins in Darwin's *Expression of Emotion in Man and Animals*. Compassion and benevolence, this research suggests, are an evolved part of human nature, rooted in our brain and biology, and ready to be cultivated for the greater good.

The biological basis of compassion

First consider the recent study of the biological basis of compassion. If such a basis exists, we should be wired up, so to speak, to respond to others in need. Recent evidence supports this point convincingly. University of Wisconsin psychologist Jack Nitschke found in an experiment that when mothers looked at pictures of their babies, they not only reported feeling more compassionate love than when they saw other babies; they also demonstrated unique activity in a region of their brains associated with the positive emotions. Nitschke's finding suggests that this region of the brain is attuned to the first objects of our compassion—our offspring.

But this compassionate instinct isn't limited to parents' brains. In a different set of studies, Joshua Greene and Jonathan Cohen of Princeton University found that when subjects contemplated harm being done to others, a similar network of regions in their brains lit up. Our children and victims of violence—two very different subjects, yet united by the similar neurological reactions they provoke. This consistency strongly suggests that compassion isn't simply a fickle or irrational emotion, but rather an innate human response embedded into the folds of our brains.

In other research by Emory University neuroscientists James Rilling and Gregory Berns, participants were given the chance to help someone else while their brain activity was recorded. Helping others triggered activity in the caudate nucleus and anterior cingulate, portions of the brain that turn on when people receive rewards or experience pleasure. This is a rather remarkable finding: helping others brings the same pleasure we get from the gratification of personal desire.

The brain, then, seems wired up to respond to others' suffering—indeed, it makes us feel good when we can alleviate that suffering. But do other parts of the body also suggest a biological basis for compassion?

It seems so. Take the loose association of glands, organs, and cardiovascular and respiratory systems known as the autonomic nervous system (ANS). The ANS plays a primary role in regulating our blood flow and breathing patterns for different kinds of actions. For example, when we feel threatened, our heart and breathing rates usually increase, preparing us either to confront or flee from the threat—the so-called "fight or

flight” response. What is the ANS profile of compassion? As it turns out, when young children and adults feel compassion for others, this emotion is reflected in very real physiological changes: Their heart rate goes down from baseline levels, which prepares them not to fight or flee, but to approach and sooth.

Then there’s oxytocin, a hormone that floats through the bloodstream. Research performed on the small, stocky rodents known as prairie voles indicates that oxytocin promotes long-term bonds and commitments, as well as the kind of nurturing behavior—like care for offspring—that lies at the heart of compassion. It may account for that overwhelming feeling of warmth and connection we feel toward our offspring or loved ones. Indeed, breastfeeding and massages elevate oxytocin levels in the blood (as does eating chocolate). In some recent studies I’ve conducted, we have found that when people perform behaviors associated with compassionate love—warm smiles, friendly hand gestures, affirmative forward leans—their bodies produce more oxytocin. This suggests compassion may be self-perpetuating: Being compassionate causes a chemical reaction in the body that motivates us to be even more compassionate.

Signs of compassion

According to evolutionary theory, if compassion is truly vital to human survival, it would manifest itself through nonverbal signals. Such signals would serve many adaptive functions. Most importantly, a distinct signal of compassion would soothe others in distress, allow people to identify the good-natured individuals with whom they’d want long-term relationships, and help forge bonds between strangers and friends.

Research by Nancy Eisenberg, perhaps the world’s expert on the development of compassion in children, has found that there is a particular facial expression of compassion, characterized by oblique eyebrows and a concerned gaze. When someone shows this expression, they are then more likely to help others. My work has examined another nonverbal cue: touch.

Previous research has already documented the important functions of touch. Primates such as great apes spend hours a day grooming each other, even when there are no lice in their physical environment. They use grooming to resolve conflicts, to reward each other’s generosity, and to form alliances. Human skin has special receptors that transform patterns of tactile stimulation—a mother’s caress or a friend’s pat on the back—into indelible sensations as lasting as childhood smells. Certain touches can trigger the release of oxytocin, bringing feelings of warmth and pleasure. The handling of neglected rat pups can reverse the effects of their previous social isolation, going as far as enhancing their immune systems.

My work set out to document, for the first time, whether compassion can be communicated via touch. Such a finding would have several important implications. It would show that we can communicate this positive emotion with nonverbal displays, whereas previous research has mostly documented the nonverbal expression of negative emotions such as anger and fear. This finding would also shed light on the social functions of compassion—how people might rely on touch to soothe, reward, and bond in daily life.

In my experiment, I put two strangers in a room where they were separated by a barrier. They could not see one another, but they could reach each other through a hole. One person touched the other on the forearm several times, each time trying to convey one of 12 emotions, including love, gratitude, and compassion. After each touch, the person touched had to describe the emotion they thought the toucher was communicating.

Imagine yourself in this experiment. How do you suppose you might do? Remarkably, people in these experiments reliably identified compassion, as well as love and the other ten emotions, from the touches to their forearm. This strongly suggests that compassion is an evolved part of human nature—something we’re universally capable of expressing and understanding.

Motivating altruism

Feeling compassion is one thing; acting on it is another. We still must confront a vital question: Does compassion promote altruistic behavior? In an important line of research, Daniel Batson has made the persuasive case that it does. According to Batson, when we encounter people in need or distress, we often imagine what their experience is like. This is a great developmental milestone—to take the perspective of another. It is not only one of the most human of capacities; it is one of the most important aspects of our ability to make moral judgments and fulfill the social contract. When we take the other’s perspective, we feel an empathic state of concern and are motivated to address that person’s needs and enhance that person’s welfare, sometimes even at our own expense.

In a compelling series of studies, Batson exposed participants to another’s suffering. He then had some participants imagine that person’s pain, but he allowed those participants to act in a self-serving fashion—for example, by leaving the experiment.

Within this series, one study had participants watch another person receive shocks when he failed a memory task. Then they were asked to take shocks on behalf of the participant, who, they were told, had experienced a shock trauma as a child. Those participants who had reported that they felt compassion for the other individual volunteered to take several shocks for that person, even when they were free to leave the experiment.

In another experiment, Batson and colleagues examined whether people feeling compassion would help someone in distress, even when their acts were completely anonymous. In this study female participants exchanged written notes with another person, who quickly expressed feeling lonely and an interest in spending time with the participant. Those participants feeling compassion volunteered to spend significant time with the other person, even when no one else would know about their act of kindness.

Taken together, our strands of evidence suggest the following. Compassion is deeply rooted in human nature; it has a biological basis in the brain and body. Humans can communicate compassion through facial gesture and touch, and these displays of compassion can serve vital social functions, strongly suggesting an evolutionary basis of compassion. And when experienced, compassion overwhelms selfish concerns and motivates altruistic behavior.

Cultivating compassion

We can thus see the great human propensity for compassion and the effects compassion can have on behavior. But can we actually cultivate compassion, or is it all determined by our genes?



Loving-Kindness Meditation

Strengthen feelings of kindness and connection toward others.

Recent neuroscience studies suggest that positive emotions are less heritable—that is, less determined by our DNA—than the negative emotions. Other studies indicate that the brain structures involved in positive emotions like compassion are more “plastic”—subject to changes brought about by environmental input. So we might think about compassion as a biologically based skill or virtue, but not one that we either have or don’t have. Instead, it’s a trait that we can develop in an appropriate context. What might that context look like? For children, we are learning some answers.

Some researchers have observed a group of children as they grew up, looking for family dynamics that might make the children more empathetic, compassionate, or likely to help others. This research points to several key factors.

First, children securely attached to their parents, compared to insecurely attached children, tend to be sympathetic to their peers as early as age three and a half, according to the research of Everett Waters, Judith Wippman, and Alan Sroufe. In contrast, researchers Mary Main and Carol George found that abusive parents who resort to physical violence have less empathetic children.

Developmental psychologists have also been interested in comparing two specific parenting styles. Parents who rely on induction engage their children in reasoning when they have done harm, prompting their child to think about the consequences of their actions and how these actions have harmed others. Parents who rely on power assertion simply declare what is right and wrong, and resort more often to physical punishment or strong emotional responses of anger. Nancy Eisenberg, Richard Fabes, and Martin Hoffman have found that parents who use induction and reasoning raise children who are better adjusted and more likely to help their peers. This style of parenting seems to nurture the basic tools of compassion: an appreciation of others’ suffering and a desire to remedy that suffering.

Parents can also teach compassion by example. A landmark study of altruism by Pearl and Samuel Oliner found that children who have compassionate parents tend to be more altruistic. In the Oliners’ study of Germans who helped rescue Jews during the Nazi Holocaust, one of the strongest predictors of this inspiring behavior was the individual’s memory of growing up in a family that prioritized compassion and altruism.

A more compassionate world

Human communities are only as healthy as our conceptions of human nature. It has long been assumed that selfishness, greed, and competitiveness lie at the core of human behavior, the products of our evolution. It takes little imagination to see how these assumptions have guided most realms of human affairs, from policy making to media portrayals of social life.

But clearly, recent scientific findings forcefully challenge this view of human nature. We see that compassion is deeply rooted in our brains, our bodies, and in the most basic ways we communicate. What’s more, a sense of compassion fosters compassionate behavior and helps shape the

lessons we teach our children.

Of course, simply realizing this is not enough; we must also make room for our compassionate impulses to flourish. In Greater Good magazine, we feature articles that can help us do just that. Our contributors provide ample evidence to show what we can gain from more compassionate marriages, schools, hospitals, workplaces, and other institutions. They do more than make us reconsider our assumptions about human nature. They offer a blueprint for a more compassionate world.

Get the science of a meaningful life delivered to your inbox.

Email Address

Sign Up

About the Author



Dacher Keltner
UC Berkeley

Dacher Keltner, Ph.D., is the founding director of the Greater Good Science Center and a professor of psychology at the University of California, Berkeley. He is the author of *The Power Paradox: How We Gain and Lose Influence* and *Born to Be Good*, and a co-editor of *The Compassionate Instinct*.
