THE SCIENCE OF A MEANINGFUL LIFE

Greater Good



Who do you TRUST?

Why we take chances on each other

Pamela Paxton and **Jeremy Adam Smith** on how to restore trust in America

Paul Ekman on when to trust your kids

Steven Pinker on why we trust science

PLUS:

Daniel Goleman on mindfulness
The emotions behind global warming
Post-war forgiveness

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"Most of the time, risk is not a statistic. Risk is a feeling."

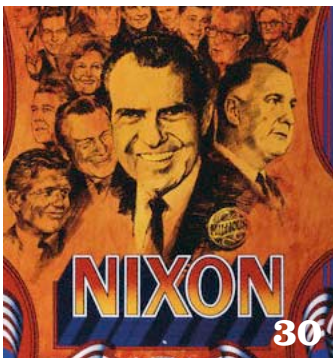
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Greater Good

MAGAZINE OF THE GREATER GOOD SCIENCE CENTER AT UC BERKELEY

Fall 2008 Volume V, Issue 2

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from the editors

AFTER THE LONGEST AND MOST EXPENSIVE presidential campaign in the history of our country, on Election Day this year American voters will return to a simple question: Whom do you trust?

Indeed, as Anna Abramson suggests in her article on page 30 of this issue, political campaigns are fundamentally battles to win voters' trust, and that has no doubt been the case this year. At a time of economic crisis and widespread political scandal, Senators John McCain and Barack Obama have explicitly tried to position themselves as the candidate capable of restoring Americans' confidence in their leaders.

But this election year has also underscored the primacy of trust in most every aspect of our lives. It's trust that keeps our marriages stable, our government functioning, and our money safe in the bank. It's trust that nurtures the bond between parents and children. As researcher Michael Kosfeld explains in his essay, biological mechanisms like oxytocin prime human beings to trust each other; in laboratory experiments, says Kosfeld, trust is the norm, not the exception. Knowing that humans are, in effect, wired to trust one another helps explain why we so often go out on a limb to trust friends, colleagues, and even strangers.

Unfortunately, that natural state of trust can be undermined and even destroyed. Studies show that for decades, long before the current round of fiscal and political debacles, Americans' trust in their institutions and each other has been wavering, often with good reason. In their essay, sociologist Pamela Paxton and *Greater Good* Senior Editor Jeremy Adam Smith catalogue these declines in trust, trace their origins, and reveal the potentially devastating effects they can have.

But Paxton, Smith, and other contributors to this issue do more than highlight the importance of trust and the harm that can come from its decay. They offer concrete prescriptions for building trust in our relationships and our country as a whole.

Drawing on years of clinical experience, psychologist Joshua Coleman outlines steps couples can take to re-establish trust after one partner has betrayed the other. In a candid, probing conversation with his daughter Eve, world-renowned psychologist (and *Greater Good* editorial board member) Paul Ekman, a leading expert on lying and deception, explains how to raise children who are both trusting and trustworthy. In this issue's Q&A, noted cognitive scientist and author Steven Pinker discusses how the scientific community can preserve its credibility, despite recent political attacks.

And in their lead essay, Paxton and Smith describe how we can restore trust in some of this country's most discredited institutions—from the banking industry to the White House—and how restoring trust in these institutions can promote trust between individuals and across social groups.

This is not to overlook the limits of trust. In fact, essays in this issue note that a healthy dose of skepticism often serves to keep others honest and protect ourselves from harm. But these essays also recognize the corrosive powers of distrust. For too long, we've witnessed a vicious cycle of selfishness, distrust, greed, and cynicism in this country, with distrust actually serving to normalize and perpetuate untrustworthy behavior. As our nation sets its path for the next four years, this issue of *Greater Good* makes clear that it's within our power to break this cycle and give one another good reason to trust again.



Jonathan Payne

Dacher Keltner



Christine Carter

Jason Marsh

Coming up in *Greater Good*:

Arts and Smarts (Winter 2008-09)
New research suggests the arts may boost students' academic performance, but many scientists aren't convinced. So what are the arts good for these days? We'll consider therapeutic, emotional, cognitive, and other benefits of the arts.

Beyond Happiness (Spring 2009)
Happiness is often framed as an individual quest for meaning and pleasure. Yet a growing body of research suggests that our relationships with other people and our service to society might be more critical to happiness than fulfilling our personal needs. This issue will explore the new science of happiness, and what skills we need for true happiness in our lives.

Greater Good
Magazine of the Greater Good Science Center at UC Berkeley

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Greater Good (ISSN 1553-3239) collects, synthesizes, and interprets groundbreaking scientific research into the roots of compassion, altruism, and peaceful human relationships. It fuses this cutting edge science with inspiring stories, promoting dialogue between social scientists and parents, educators, community leaders, and policy makers.

Subscriptions: Subscriptions to *Greater Good* are $24 for one year (four issues) and $43 for two years (eight issues). Subscribe online at www.greatergoodmag.org or mail a check, made payable to UC Regents, to *Greater Good*, 2425 Atherton St., #6070, UC Berkeley, Berkeley, CA, 94720-6070, USA. Orders outside the U.S. should add $14 for foreign postage ($10 for Canada). Questions? Please email Greater@berkeley.edu or call 510-642-2490.

Greater Good is published by the Greater Good Science Center at UC Berkeley, an interdisciplinary research center that promotes the study of human happiness, compassion, and altruism. Funding comes from Tom & Ruth Ann Hornaday, the Herb Alpert Foundation, and other individual donors.

Greater Good
SCIENCE CENTER



The positive in the ordinary

Your writers identify the way we humans are, not the way our culture often imagines and projects us to be—filled with uncaring, savage hurtfulness.

Take, for example, "The Mist of Panic" (Summer 2008), by Lee Clarke. I felt such great relief to learn that "people rarely respond to disaster with extreme panic, recklessness, and selfishness." Or the fascinating article on multiculturalism by Rebecca Walker, "Double Blood," which made me think about my double language skill as compared with the experience of people with "two bloods."

This kind of writing has helped and encouraged me to be more compassionate, understanding, and kind. Thanks to *Greater Good* for recognizing the positive in the ordinary, and backing it up with science!

Michael Olwyler
North Fork, CA

Forgive us?

I enjoy *Greater Good* very much. I showed the article "Forgive Me?" by Donna Howe (Summer 2008) to a colleague, and her immediate question was, "How do the researchers define forgiveness?" Sure enough, nothing in the article defines forgiveness. I looked online and found many definitions of forgiveness from different perspectives. I think some kind of definition should have been included in the article.

Shirley D. Keen
Los Angeles, CA

Praise for *Greater Good*

I am not a regular subscriber to *Greater Good*, although I am thrilled you are publishing such an important magazine. I'm particularly fascinated by brain research in early childhood and how stress affects mental and psychological growth. As an advocate for early education, this is a crucial aspect of the argument for universal preschool. Just having a place where current research along these lines can be focused is a true gift to the human condition. Thanks to all for your superb work.

Tedi Crawford
Berkeley, CA

I recently picked up my first copy of *Greater Good*. What an awesome magazine! It's full of interesting articles, creative and thoughtful but firmly rooted in real-world experiences. It looks great, too. Excellent work!

Christopher Pepper
San Francisco, CA

The postpartum brain

I just read Anna J. Abramson's article in *Greater Good* about postpartum depression ("The Postpartum Brain," Spring 2008) and wanted to congratulate you on presenting a well-balanced and realistic description of this illness. Too often articles sensationalize postpartum depression, but this article was factual and well-researched. The quotes from the medical experts supported the facts and added a new depth of understanding. Great job!

Adrienne Griffen
Mid-Atlantic Coordinator,
Postpartum Support International
Arlington, VA

The virtue of sadness

Allan V. Horwitz and Jerome C. Wakefield's article, "The Virtue of Sadness," (Winter 2007-08) made me rethink a conversation I overheard recently between two teenagers at a skating rink. It went something like this:

Boy: Where's the locker key?

Girl: Yo, are you A.D.D. or something? I just told you, it's in my backpack!

This bit of banter seemed to confirm what Horwitz and Wakefield were saying about our society: We are over-diagnosed. Apparently, we have not only replaced Sadness with Depression, but we have also replaced Not Paying Attention with Attention Deficit Disorder.

Daniel Morgenroth
Brooklyn, NY



From the Blogosphere

What our readers are saying online

In its current issue, *Greater Good* magazine ponders "Are we born racist?" and in the article "Look Twice," Susan T. Fiske … offers some bad news and good news. … From Dr. Fiske's report, it seems we are hardwired to disdain what we perceive as different. So, what do we do? More importantly, how can we ensure that future generations learn to judge others by the content of their character and not the color of their skin, or their accent, or their economic status, or their sexuality, or their ability? The *Greater Good* article offers hope. … It seems as if the solution may be togetherness: living together, working together, playing together, etc. It is a pity that most of our lives remain so racially segregated.

Posted by Tami Winfrey Harris
at Anti-Racist Parent:
www.antiracistparent.com

Greater Good welcomes reader feedback on the current issue of the magazine, as well as on past issues. Please write to us at GGLetters@berkeley.edu or *Greater Good*, 2425 Atherton Street, #6070, UC Berkeley, Berkeley, CA, 94720-6070.



AP Photo/Daniel Hulshizer



Spent

New research explores why misery is not miserly.

BY JASON MARSH

ONE DAY THIS PAST SPRING, Harvard University psychologist Jennifer Lerner discovered that a student of hers had suffered a relapse of a severe form of cancer. The news made her terribly upset; as she was walking home at the end of the day, she felt overcome by a wave of sadness.

But just beneath that sadness was another feeling, an urge that crept up on her as she was thinking about her student.

"I wanted to stop off at stores and buy things for my house," she says. "It was so bizarre, but it was very hard to overcome—the urge to go shopping right then and there."

The urge may have seemed odd, but it's not uncommon. In fact, a recent line of research has uncovered a strong connection between feelings of sadness and a willingness to spend money on stuff—more money than people would pay for the same stuff if they weren't sad. It seems that when we're feeling down, our purse strings become a lot looser.

Lerner has been at the fore of this research. In a study published earlier this year in *Psychological Science*, she and her colleagues gave participants $10 and showed some of them a sad movie clip—a scene from the 1979 Ricky Schroder-Jon Voight tear-jerker, *The Champ*. Then the researchers had those participants describe how they'd feel if they found themselves in a situation like the one depicted in the clip. The rest of the participants watched a video about the Great Barrier Reef and wrote about their daily activities. Then all the participants were given the chance to buy a "sporty" water bottle.

The group that watched *The Champ* reported feeling significantly sadder than the other group—and they were willing to spend roughly four times as much for the bottle, $2.11 vs. $0.56.

The results corroborate findings from an earlier *Psychological Science* paper, on which Lerner served as lead author. In that 2004 study, participants were willing to spend more when they were feeling sad, but not when they were feeling disgusted. Both studies' results are consistent with research from the 1990s that linked depression with compulsive shopping.

"It seems as though, somehow, there are some profound, deep connections in the human mind, such that sadness makes us want to acquire new things," says Lerner.

But the latest study, titled "Misery is Not Miserly," distinguishes itself from earlier research by suggesting *why* sadness may induce excessive spending. The authors found that in order to affect spending habits, it wasn't

enough for people just to feel sad. They also had to be thinking about themselves more, experiencing what the authors call "self-focus," something that's usually, though not always, triggered by sadness. In the study, people were deemed high in self-focus if they frequently used pronouns like "me," "myself," and "I" in their writing assignment.

The authors hypothesize that the combination of sadness and self-focus makes people dwell on their shortcomings—on some unconscious level, they feel "devalued," says Cynthia Cryder, a professor of psychology at Carnegie Mellon University and the study's lead author. In response, they have an unconscious desire to acquire things—including material goods—that they hope will increase their self-worth.

"It could be that sadness is defined by a sense of loss," says Lerner, "and it triggers this implicit goal to replace loss."

The authors stress that this is different from the idea of "retail therapy," a *Sex in the City*-style shopping spree intended to cheer oneself up from some misfortune. Rather, the connection they've uncovered between sadness and spending operates on an unconscious level.

Research has yet to determine whether this process actually works—that is, whether spending effectively reduces feelings of sadness. But even if it does, feeling better about oneself could come at a hefty price.

"At a macro level, the amount of money implicated in the effect is not trivial," says Lerner. "This is not just sort of an 'Oh, isn't that interesting?' finding. There are potentially massive potential implications of this."

Lerner points out that Americans currently spend 70 percent of their national income on consumer goods and services, up from 63 percent in 1980. Rates of consumer spending have increased steadily over the past 25 years, according to the Bureau of Labor Statistics, and consumer debt in the United States now tops two-and-a-half trillion dollars, more than three times as much as it was 15 years ago, according to the Federal Reserve.

Of course, says Lerner, "many factors influence consumer spending"—including the availability of credit and increasingly savvy and pervasive marketing—but sadness might be one of them. She adds that this could be especially true for certain groups of people, such as widows who have to make huge financial decisions while they're still grieving.

Ronald Dahl, one of Lerner's co-authors on the "Misery is Not Miserly" study, suggests that sadness could also be easily exploited by marketers to the disadvantage of many consumers, especially because the effects of sadness can snowball.

"Imagine some advertiser has somehow conveyed to you that getting certain products may make you feel better," he says. "Then the bills come due and you actually don't feel better about yourself. You actually feel worse, because now you're further in debt. That sadness then makes you willing to pay more."

Dahl, the Staunton Professor of Psychiatry and Pediatrics at the University of Pittsburgh, speculates that this "negative spiral" originates in a cultural myth that buying things for oneself will make one happy—a lesson reinforced in media images and other cultural representations of wealth and success. But he points to research, such as a study published this past March in *Science*, showing that when people spend money on others, they actually feel happier than after spending it on themselves.



Damian King

When people spend money on others, they actually feel happier than after spending it on themselves.

So perhaps the best way to address the sadness-spending effect, suggests Dahl, is to teach people, from a young age, that the path to personal fulfillment lies in generosity and altruism, not "selfish consumerism." That way, the feelings of loss brought on by sadness might spur a desire to give to others, avoiding the negative spiral brought on by indulging oneself.

"It's basically a new pattern of thoughts, feelings, and actions together in the brain," he says. "It means shifting away from self-focus toward being generous, giving to others—and discovering the rewards, in real emotional terms."

Jason Marsh is the editor in chief of *Greater Good*.

BY THE NUMBERS

Staying Single, Staying Healthy

MARRIED PEOPLE ARE healthier—that's been the conclusion among social scientists for years. But according to a new study, the health gap between married and never-married people—especially men—has narrowed substantially over the past three decades.

In the study, which appears in the September issue of *The Journal of Health and Social Behavior*, researchers analyzed health trends between 1972 and 2003 among more than one million Americans. They found that the probability of reporting good health increased drastically during this period for never-married men and, to a lesser extent, for never-married women as well. Because the health of married women also improved, overall health disparities between married and never-married women remained relatively stable. But married men were in no better health in 2003 than they were 30 years earlier, so the health gap between married and never-married men narrowed considerably.

Cathy Hui Liu, an assistant professor of sociology at Michigan State University and an author on the study, says that one possible explanation for the improved health among never-married Americans could be that people are staying single longer, and being single has become more socially acceptable. This means that there's probably less stigma attached to not being married, she says, which would in turn reduce stress and boost health among singles.

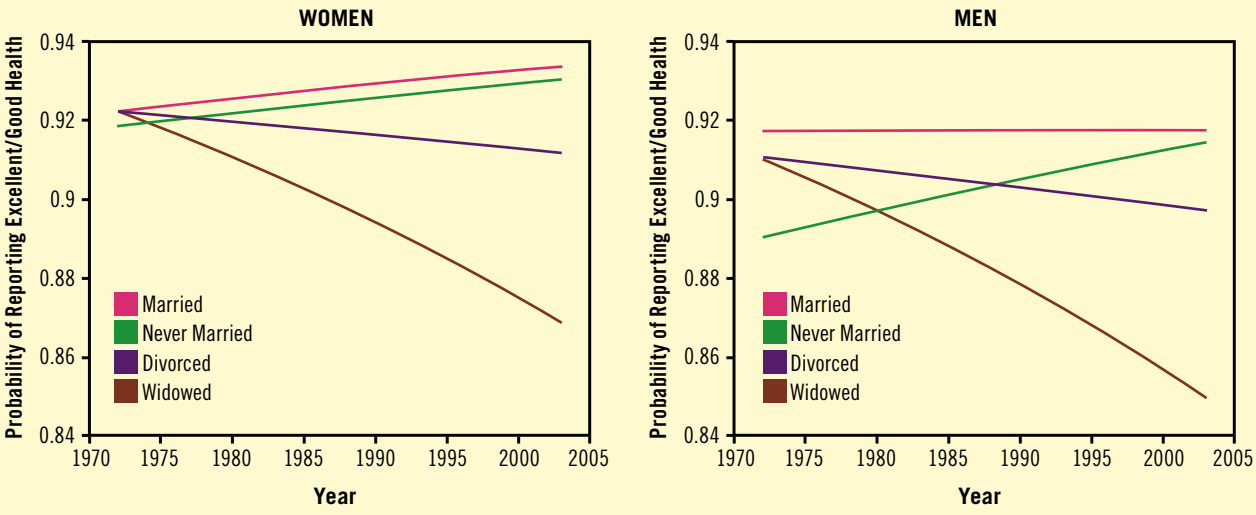
In the past, researchers have found unmarried men to be more socially isolated than unmarried women, which meant that men benefited more from the social and psychological resources that came with marriage.

But Liu speculates that a greater number of single people in the population means larger social networks for unmarried individuals. As a result, unmarried people today may enjoy more kinds of social support than they had 30 years ago, which would reduce the relative benefits of marriage, particularly for men. Outside of the formal institution of marriage, people are likely finding "increasing friendship networks, social resources, and connections," says Liu, "and these things are good for health." Similarly, alternatives to marriage—such as co-habitation and same-sex unions—may provide the same health benefits that traditional marriage provides.

However, the study also reveals that health gaps between married and previously married—divorced or widowed—people has actually *widened* over the past three decades. According to the authors, that could be because widows with chronic health problems are living longer these days, increasing the number of years in which they report being in poor health, or it could mean that the stress of marital dissolution is particularly acute today.

Liu suggests that these new findings challenge deeply ingrained beliefs about marriage and could potentially help inform social policy discussions in the future. "Politicians and researchers often promote policies to encourage marriage," she says. "But this study highlights the complexity of that issue." **—Anna J. Abramson**

AMERICANS' HEALTH BY MARITAL STATUS AND GENDER, 1972-2003



Love's a funny thing

ASK ALMOST ANYONE what they're looking for in a romantic partner, and "a sense of humor" is bound to be toward the top of their list. But how important is humor when it comes to a strong relationship? And does the type of humor matter?

Researchers at the University of Western Ontario recently tried to find out. They studied nearly 100 couples, focusing on the role of two forms of humor in their relationship: affiliative humor (using comments, jokes, or witty banter to make someone laugh or feel better when they're down) and aggressive humor (using sarcasm or ridicule to criticize or put someone down without regard for their feelings).

All couples in the study had been dating for at least three months. The researchers gave study participants a questionnaire measuring their own and their partner's style of humor, as well as their satisfaction with their relationship. Two weeks later, the couples returned to the researchers' lab and were asked to discuss an unresolved conflict that had arisen over those previous 14 days. The researchers observed the couples during their discussion in the lab and analyzed how they used affiliative and aggressive humor. They also filmed the discussions and later had a team of observers watch the tapes to rate how funny each partner was during the conversation.

The results, recently published in the journal *Personal Relationships*, showed that people who used affiliative humor were rated just as funny as people who used aggressive humor. But people who reported greater satisfaction with their relationship had partners who used more affiliative humor and less aggressive humor while resolving their conflict. What's more, when people used affiliative humor while discussing their problem, their partners reported feeling closer to them afterwards; when people used more aggressive humor, their partners reported feeling less close to them. The researchers also found that while men and women used the same amount of aggressive humor during the discussions, men tended to use more affiliative humor than women while resolving their problems.

The researchers caution that they don't yet know whether affiliative humor leads to satisfying relationships, or the other way around. "When people feel happy with their relationship, they are more likely to engage in pro-relationship behaviors, such as affiliative humor," says Loren Campbell, the study's lead author. "On the other hand, people who use affiliative humor more often are probably more likely to have partners who appreciate their humor and thus feel more positively about the relationship."

—Koko Nishi



Brad Aldridge

How was your day?

IT'S A COMMON, EVEN BANAL question, often asked and answered without much thought: "How was your day?" But a new study suggests that this simple question carries significant emotional benefits for both partners in a romantic relationship. Getting your partner to talk about his or her day, it seems, will not only make him or her feel better, but it will give you an emotional boost as well.

Researchers at the University of Utah asked 48 cohabiting romantic couples to report and rate the best event and the most stressful event of their day for 21 days straight. They also asked whether each partner told the other about these events.



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Participants reported better moods at the end of the days on which they had told their partner about a positive event. But on days when they disclosed stressful events, there was no significant increase in their levels of negative emotion, unless the event involved their partner.

What's more, the researchers found that on days when participants asked and were told about their partner's day, their moods improved when they learned of positive events, especially if they were involved in their partner's good piece of news. There were no significant increases in negative emotion after hearing about stressful events, unless the event involved the listener.

"Both positive and negative disclosures should be encouraged," says Angela Hicks, one of the study's authors, "as the negative disclosures do not seem to cause emotional harm, and both types of disclosures are likely to lead to greater feelings of intimacy and connectedness between relationship partners over time."

—Tanya Vacharkulksemsuk

The Altruistic Advantage

IF CHARACTER IS WHAT WE DO when no one's watching, a new study suggests that only some of us truly have enough character to be labeled altruists. What's more, altruism may bring unexpected rewards down the line.

In the study, published in the June issue of *Social Psychology Quarterly*, researchers first gave participants a survey to assess whether they were an "egoist" or an "altruist." The researchers define egoists as people who only give to others when they expect a reward for their generosity, or where giving won't hurt them. Altruists, on the other hand, give because they want to help others, even at a cost to themselves.

Next, the researchers gave the participants $8, telling them they could keep all of it or give some away to another participant. Before they made their decision, they were also told it would be kept private. No one would know how much they chose to give or keep.

Then came a second round. This time, participants were told a third party would learn how much of their $8 they shared. What's more, the third party was going to give some money to the participants in a subsequent round. This created an incentive for the participants to establish a reputation for being generous, in the hope that their generosity would be reciprocated.





Robert Bilensky

The results showed that, on average, egoists gave away 46 percent of their money when they thought the third party was watching them, but they gave only 22 percent in private. Altruists gave away 51 percent in the public situation and 40 percent in the private situation—almost twice as much as the egoists.

The findings suggest some generosity, or "prosocial" behavior, may be motivated by pure altruism, not self-interest. It also raises the question of whether altruists lose a competitive edge in the real world, since they're less strategic about how and when they're kind to others.

But another dimension to the study suggests altruists may ultimately gain from giving more. In a final stage, the researchers asked the participants to give money to a person who had demonstrated generosity while playing a similar game. Some participants were told this person knew his generosity would be reported to the participants. Others were told this person didn't know that anyone would learn of his generosity.

The altruists gave almost the same amount of money to the person in either case. But the egoists gave substantially less to the person when they had reason to believe that person was only trying to boost his reputation. They seemed to reward true altruistic behavior, even if they weren't altruists themselves.

"If private prosocial acts are found out—as they often are—altruists will receive more rewards than would egoists," says Brent Simpson, a sociology professor at the University of South Carolina and the study's lead author. "Similarly, to the extent that people punish others who fail to act prosocially, altruists do not bear the costs of being punished when ostensibly private acts become public." **—Alex Dixon**



Ramiro M. Joly-Mascheroni

Empathy's for the Dogs

LAUGH AND THE WHOLE WORLD laughs with you. Yawn, and so will your dog.

A recent study published in the journal *Biology Letters* found dogs yawn when humans do, suggesting that canines may have the capacity for empathy.

In their experiment, researchers from the University of London yawned at 29 dogs. Seventy-two percent yawned back—a higher frequency than humans, who typically yawn back 45 to 60 percent of the time.

When the researchers simply opened their mouths wide, no dogs yawned.

The researchers speculate that this kind of "contagious yawning" may be a rudimentary form of empathy. Atsushi Senju, one of the study's authors, notes that humans who are more susceptible to contagious yawning score higher on tests that measure empathy. What's more, people diagnosed with forms of autism, a disorder characterized in part by difficulty empathizing with others, don't demonstrate contagious yawning.

Previous research has documented contagious yawning in humans and chimpanzees, but this is the first study to observe contagious yawning among non-primate species and between different species. Senju says their results might suggest that "the capacity for empathy is widespread throughout various mammal species." **—Alex Dixon**



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Sharp and Social

WITH THE NUMBER OF AMERICANS SUFFERING from Alzheimer's disease expected to quadruple by 2050, researchers have been searching for ways to combat the disease. A recent study sponsored by the health maintenance organization Kaiser Permanente may offer one important clue, highlighting the benefits of frequent visits from friends and family members.

The study, published in the July issue of the *American Journal of Public Health*, examined the relationship between social contact and symptoms of dementia among roughly 2,250 women over the age of 78. All were members of Kaiser, which allowed the researchers to access the women's medical records.

The researchers phoned the participants periodically over four years and asked them questions about their social life. How many friends and family members did they see regularly? How frequently did they see them? Could they call on them for help? Could they confide in them?

Researchers also assessed the participants' mental condition over the phone, asking them to count backwards from 20, to offer antonyms for certain words, and to name the president and vice president. If they had difficulty, the researchers reviewed their medical records to see if they'd been diagnosed with dementia.

They found that participants who socialized the least were far more likely to develop dementia. Women in the bottom 20 percent in terms of social activity were almost twice as likely to suffer dementia over those four years.

The researchers cited two factors as key: the number of friends and family the women saw in a month, and how often they saw them. Daily visits appear to help the most, cutting the likelihood of dementia by half.

But could having dementia simply make women less likely to be social, instead of the other way around?

"That's the magic question you want to ask with any study like this," says Valerie Crooks, a researcher at Kaiser Permanente of Southern California and the study's lead author.

Crooks says her study addressed this "chicken-or-egg" phenomenon by determining that the women in question were cognitively fit when the study began. Still, "it's not inevitable that having a large social network will prevent you from developing dementia," adds Crooks. "But it does seem to provide some added protection." **—Alex Dixon**

BRAIN TEASER



Brad Aldridge

BY EMILIANA R. SIMON-THOMAS

Q: Do the shorter days of winter really make us depressed?

A: In 1984, a team of scientists at the National Institute of Mental Health published the first criteria for diagnosing a unique condition called Seasonal Affective Disorder, or SAD. The people they diagnosed with SAD experienced major depressive episodes during the fall and winter months. Those episodes went away in the spring and summer, then returned the next fall and winter.

Researchers have offered a biological explanation for SAD, proposing that less daylight causes shifts in the body's internal clock. Normally, light particles enter the eye and stimulate vision cells, which transmit information to the parts of the brain that process what we see. Along the way, these vision cells tell a gland in the brain, called the pineal gland, how much light is out in the world. Under dim light conditions, the pineal converts serotonin—the chemical in the brain boosted by antidepressant drugs—into melatonin, which induces sleep.

The theory for SAD is that fall/winter darkness depletes the brain's stores of serotonin by making the pineal gland convert too much of it into sleep-inducing melatonin. Supporting this theory, studies both of light therapy, a medically prescribed treatment mandating 30 minutes per day in front of a light, and of drugs that increase serotonin levels in the brain have reported reduced SAD symptoms.

There is, however, controversy over this biological explanation for SAD. Some cases of SAD have been reported in the spring and summer months, calling into question the role of fall/winter darkness. Furthermore, a study published earlier this year by scientists from Norway, where the sun shines for just two hours during winter months, reported no greater incidence of SAD over Norwegian winters than over the much brighter American winters. If darkness was the cause of SAD, it should be more common in places with darker winters.

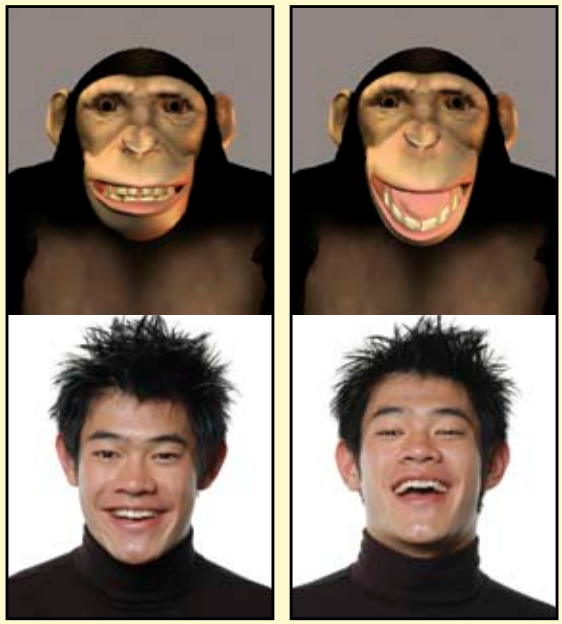
The Norwegian scientists conclude that SAD should actually be regarded as a form of depression with seasonal triggers, which could include anything from less light to colder temperatures to fewer opportunities to be outdoors, socialize, or exercise.

So the jury's still out on whether SAD is a unique, light-controlled psychological disorder. But it does seem likely that we are exquisitely sensitive to changes that come with the seasons, and that for some, these changes can trigger episodes of depression.

Emiliana R. Simon-Thomas, Ph.D., is a neuroscientist at the University of California, Berkeley. Her Brain Teaser column addresses popular questions, myths, and misconceptions about the neurobiological roots of human behavior and emotion. Email questions to brainteaser@berkeley.edu.

BODY LANGUAGE

DACHER KELTNER REVEALS THE SCIENCE BEHIND EVERYDAY GESTURES



Lisa Parr/Emory University

A RECENT STUDY, published in the journal *Emotion*, finds that chimpanzees are capable of making some nuanced distinctions between facial expressions. The study is notable not only for what it reveals about chimps' social intelligence—it's pretty sophisticated, it turns out—but for what it suggests about the evolution of human emotion.

In the study, led by Lisa Parr of Emory University, researchers showed chimpanzees a series of computer-generated faces. The chimps had the chance to match each face either to an identical image or to an image of a similar but different emotional expression, characterized by slightly different facial muscle movements. If they chose correctly, the chimps were rewarded with food; if their choice was wrong, they got nothing.

Some scientists would have been skeptical that chimps could make these kinds of distinctions. They assume humans' emotional categories are really just products of the language we use to describe emotions—human constructions that don't really represent the true nature of our emotional world.

However, the chimps in this study proved adept at recognizing the subtle distinctions between facial expressions; for the most part, their selections were accurate enough to indicate that they weren't just getting lucky. This suggests chimps don't only make broad, simplistic distinctions between positive and negative displays of emotion. Instead, they seem to interpret facial muscle movements with enough accuracy to differentiate between similar emotional states, like how we distinguish between different colors, foods, or scents.

The fact that chimps make these emotional distinctions suggests these distinctions are probably deeply rooted in human nature, stretching back to at least seven million years ago, when humans and chimps split off from one another on the evolutionary line.

Consider one kind of distinction the chimps were asked to make: between a laugh-like "play" face and a bared-teeth smile. These two expressions are represented in the images above (two of the actual computerized images the researchers used in their study). The bared-teeth expression, on the left, is a predecessor to the human smile. The zygomatic major, the risorius, and the buccinator muscles around the upper and lower lip all contract to reveal the teeth. Chimps usually make this expression as a sign that they're submitting or cowering before a dominant other.

The other image depicts a different expression that also resembles a smile; the researchers call it a play face. Chimps, especially adolescent chimps, make this expression in different contexts from the bared-teeth expression—when they're playing, when they're tickling, when they're feeding, or just goofing off. This expression is more relaxed: their jaw drops and their mouth is open, so there's no tension in the muscles that reveal the teeth.

We can see similar differences in the accompanying human faces, which are from a set of photos I've taken in my lab. The first photo is very close to the bare teeth display of the chimp—it's more of a deferential smile—and the second shows a jaw drop and open mouth, roughly equivalent to a chimp's play face.

It's one thing to observe that humans and chimps share certain differences between these kinds of positive emotional displays. But it's even more profound to recognize that these differences have deep significance in the mind of the chimpanzee. It suggests that primates, including humans, are intrinsically attuned to these nuances in emotional expression. Part of our evolutionary legacy, it seems, is our capacity to express and interpret a variety of cooperative, positive signals.

Dacher Keltner, Ph.D., executive editor of *Greater Good*, is expertly trained at decoding the emotional messages conveyed by facial expressions and body language. Body Language offers tips on how to identify and empathize with other people's emotions, and how to understand our own emotions.

Windows of Opportunity

A new book and CD help students build emotional intelligence.

BY DANIEL GOLEMAN



Frank Ward

THE SCENE: A first-grade classroom in a Manhattan school. Not just any classroom—this one has lots of Special Ed students, who are very hyperactive. So the room is a whirlpool of frenzied activity. The teacher tells the kids that they're going to listen to a CD. The kids quiet down a bit.

Then they get pretty still as the CD starts, and a man's voice asks the kids to lie down on their backs, arms at their sides, and get a "breathing buddy," like a stuffed animal, who will sit on their stomachs and help them be aware of their breathing. The voice takes the children through a series of breathing and body awareness exercises, and the kids manage to calm down and stay focused through the entire six minutes, which ends with them wiggling their toes.

"You've just learned how to make your body feel calm and relaxed," says the voice. "And you can do this again any time you want."

The voice on the CD is mine, though I'm reading the words of Linda Lantieri, who has pioneered public school programs in social and emotional learning that have been adopted worldwide.

Her newest program adds an important tool to the emotional intelligence kit: mindfulness, a moment-by-moment awareness of one's internal state and external environment. In a new book, *Building Emotional Intelligence*, which comes with the CD, Lantieri uses mindfulness training to enhance concentration and attention among kids, and to help them learn to better calm themselves. *Building Emotional Intelligence* comes with instructions that explain how teachers and parents can adapt Latieri's exercises to kids at different age levels (five to seven, eight to 11, or 12 and up) and provides detailed explanations of each exercise.

Lantieri's project exemplifies the ways we can build on scientific insights to help children master the skills of emotional intelligence. As Richard Davidson, founder of the Laboratory for Affective Neuroscience at the University of Wisconsin, explained to me in a recent conversation, this kind of instruction takes advantage of a natural neural window of opportunity during childhood. The neural circuitry that allows us to pay attention, calm ourselves, and attune to others' feelings all takes shape in the first two decades of life. And yet kids today face a range of social conditions—primarily stress caused by school and peer pressures, unstable home lives, and hectic schedules—that foil the healthy development of this circuitry.



Timothy Wheeler

"It is essential for children to learn new ways to have their human spirits uplifted and their inner lives nourished."

"We often mistake the symptoms of unmanaged stress in our children as inappropriate behavior that needs to be stopped," writes Lantieri in *Building Emotional Intelligence*. "Children are reprimanded by teachers and parents for actions that are really stress reactions, rather than intentional misbehavior. The situation becomes a downward spiral of one stress reaction after another, and both adult and child are caught in it."

As a result, kids can grow up with a range of deficiencies in these key life skills—deficiencies that can trouble them throughout life, in their relationships, and at work. For 20 years, writes Lantieri, schools have waged "prevention wars," like the "war on drugs," to reduce antisocial and self-destructive behavior. In *Building Emotional Intelligence*, she argues that we must instead focus on building resilience and self-knowledge. By offering kids a systematic education in social and emotional intelligence, we can help counteract the negative forces in their lives, and they can take these skills with them as they mature.

Parents and teachers tell kids countless times to "calm down" or "pay attention." But the natural course of a child's development means that the brain's circuitry for calming and focusing is a work in progress. Those neural systems are still growing. They will be shaped by the experiences kids have, so the lessons Lantieri offers are invaluable. In the Manhattan schools I visited, teachers played the CD for kids right before tests, to help them get in the best brain state for learning and remembering. Lantieri has created a great assistant for teachers, a way to help kids be better students—not just for better learning, but for better behavior, too.

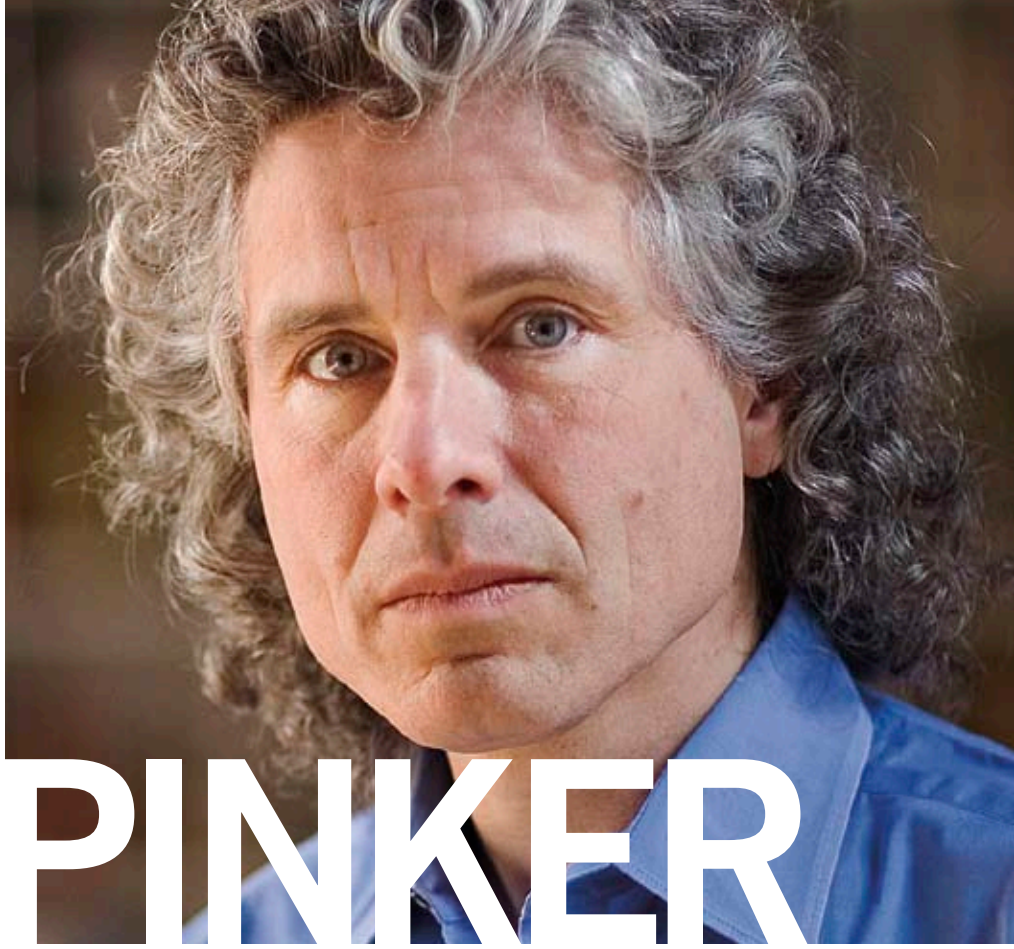
"A window of opportunity exists right now in our society for these kinds of approaches to make their way into our homes and our schools," writes Lantieri. "It is essential for children to learn new ways to have their human spirits uplifted and their inner lives nourished as a normal, natural part of their childhood experience. Far from being marginal or irrelevant, attention to building our children's emotional intelligence and inner lives will help us achieve the equilibrium we all need in this chaotic world."

Daniel Goleman, Ph.D., is the author of the best-sellers *Emotional Intelligence* and *Social Intelligence*. His website is www.danielgoleman.info.

Goleman's full conversations with Richard Davidson, "Training the Brain," can be heard as part of the audio series *Wired to Connect: Dialogues on Social Intelligence*, available through More than Sound Productions (www.morethansound.net).

Truth in the Balance

AN INTERVIEW WITH PSYCHOLOGIST AND AUTHOR STEVEN PINKER



BY JEREMY ADAM SMITH

AMERICANS' TRUST IN THE MEDIA, their government, and each other has declined over the past four decades. And yet, according to many national surveys, trust in science and scientists remains high. In a 2006 Harris poll, for example, 77 percent of respondents said they trust scientists to tell the truth—roughly 60 percent more than the number who trusted the president.

In recent years, however, several areas of scientific research—from global warming to stem cell research to evolution—have become highly politicized, in ways that threaten the credibility of prominent scientists and their findings.

In one notorious instance, the Bush administration fired cell biologist Elizabeth Blackburn and medical ethicist William May from the President's Council on Bioethics, a decision that many critics alleged was part of an effort to purge the Council of dissenting scientific voices. Janet Rowley, professor of molecular genetics at the University of Chicago and a member of the Bioethics Council, later described the dismissals as "an important example of the absolutely destructive practices of the Bush administration" when it comes to science and scientific issues.

Cognitive psychologist Steven Pinker is no stranger to these debates. In a recent essay for *The New Republic*, for example, Pinker argues that the work of the President's Council on Bioethics "springs from a movement to impose a radical political agenda, fed by fervent religious impulses, onto American biomedicine."

Pinker is Harvard College Professor and Johnstone Family Professor in Harvard University's psychology department. He is famed for his research on language acquisition, and has published extensively on the idea that both language and moral intuitions are biological adaptations that arose from a process of natural selection.

In addition to being a working scientist, Pinker is a leading public intellectual, consistently offering an informed perspective on scientific debates. As one of America's most popular science writers, his articles have appeared in *The New York Times*, *Time*, and *The Atlantic Monthly*, and he is the author of seven books, two of which were finalists for the Pulitzer Prize. Pinker was named one of *Time* magazine's 100 most influential people in the world in 2004 and one of *Foreign Policy*'s 100 top public intellectuals in 2005. His most recent book is *The Stuff of Thought: Language as a Window into Human Nature*, a *New York Times* bestseller.

While on a 10-city tour to support the paperback release of *The Stuff of Thought*, Pinker talked with *Greater Good* about science, politics, and trust.

Greater Good: Americans seem to hold science and scientists in high esteem. Do you think this trust is justified?

Steven Pinker: I think it is. Not because scientists are necessarily trustworthy people, any more so than anyone else, but because the institutions of science are set up to reward finding the truth and to punish hiding it. So, as a matter of self-interest, scientists are nudged toward the truth. They suffer a loss of prestige and esteem if someone else fails to replicate an experiment they have used to back up a claim.

Likewise, if there is some obvious flaw in an experiment or in an argument, the mechanisms of peer review will ensure that they don't get their next grant or don't get their next paper published. And they will be humiliated if the paper does come out and the flaw is exposed afterwards. If they say something patently false during a public meeting, there will be consequences.

In contrast, I think politicians have low credibility because our institutions at present don't reward truth-telling among them. Quite the contrary. It's easy to get away with blatant lies and misleading euphemism and doublespeak. So the incentive structure favors bending the truth among politicians, more so than one finds in the institutions of science.

GG: Quite a few people argue that the Bush administration has been especially meddlesome in distorting the truth about scientific research, suppressing evidence in favor of a political agenda. Do you think it's true that the Bush administration is more anti-science than previous administrations, or do some of these problems stretch back even farther?

SP: To some extent they go back further. To be honest, I was skeptical of claims that the Bush administration is worse than previous ones. But I have now been turned around, and I see that the accusations are correct, that there is a Republican war on science, and that it does seem unprecedented. I see that in the areas with which I have first-hand familiarity. For issues like sex education and climate, I have had to take the word of the scientists who have been directly involved.

GG: What changed your mind?

SP: I've been personally involved in three issues, and in each case, intervention from the Bush administration has gone against scientific consensus.

The first involved bioethics, where the President's Council on Bioethics has been packed with cultural conservatives and opponents of biomedical research, with a concerted effort to exaggerate the downside of biomedical research and to play up the fears.

The second is evolution, where Bush himself called for the so-called "controversy" between intelligent design and evolution to be taught in schools, whereas virtually every intelligent scientist believes that there is no such controversy.

As a matter of self-interest, scientists are nudged toward the truth.

The third involves regulation of language on the airwaves, where my book *The Stuff of Thought* was cited by the Solicitor General in a brief to a U.S. Appeals Court on whether the Federal Communications Commission has the authority to sanction the networks for failing to bleep out fleeting expletives—that is, celebrities such as Cher or Bono or Nicole Richie saying "fucking brilliant" or "they can fuck themselves" during live television broadcasts. And the government cited what I think are bogus considerations about protecting the mental health of children as a rationale for restricting speech on the airwaves. They used my writing to support their case in a way that I felt was deceptive.

GG: Do you believe that the Bush administration's actions will have any lasting impact on Americans' levels of trust in science and scientific institutions?

SP: Yes. For example, the Religious Right and their supporters in the Bush administration argue that scientists are suppressing debate about evolution. Having long ago lost the legal battle to have intelligent design taught in the classrooms, they are now framing the issue as an attempt to "teach the controversy," therefore putting scientists on the side of appearing to want to suppress controversy.

To the extent that they succeed in framing the debate that way, it would look as if scientists are pushing their own dogma. And that is simply dishonest. Scientists would have no interest in a debate between astronomy and astrology or chemistry and alchemy, simply because you have to draw the line somewhere and impose some barrier to entry of basic scientific credibility before you engage in a debate. But that can be distorted into making it seem as if scientists are as dogmatic as the defenders of religious fundamentalism.

GG: You mentioned taking the word of climate scientists about debates in global warming because you have no expertise in that area—something you have in common with me and a majority of Americans. What red flags should ordinary citizens watch out for when it comes to political debates about science and scientific issues?

SP: Certainly they should be curious about the degree of scientific consensus, which is what I sought to understand in forming an opinion about climate change. And science journalism has a responsibility to report the current degree of consensus, rather than taking a "he said-she said" approach.

Secondly, people should be curious about the state of the evidence, which means that there is a parallel obligation on the part of scientists to lay out the evidence. Scientists should resist any temptation to pronounce what might look like dogma. They should be prepared to explain, in intelligent layperson's language, what compelled them to a particular position, in terms of the available evidence, and be prepared to articulate that background in publicly accessible articles. Conversely, the public should insist on being persuaded by seeing the evidence stated as clearly as possible.

GG: What, in your opinion, does the next presidential administration need to do in order to repair the damage done by the Bush administration?

SP: At the very least, the next administration needs to renew a commitment to the de-politicization of science. Both presidential candidates have acknowledged that there has been a politicization of science in the Bush administration and have vowed to reverse it. So that's somewhat reassuring.

But then McCain selected Sarah Palin as his running mate. That is a disturbing turn. He has committed himself to a running mate who has questioned evolution, who has appealed to God rather than a cost-benefit analysis in justifying a gas pipeline, who may have meddled with reports on the endangered status of species affected by global warming. So now I am worried.

In the long term, this underscores the need not just for better science education, but for the attitudes of science at its best to be applied throughout the public sphere—a demand for evidence and logical consistency rather than dogma, and an emphasis on understanding rather than sloganeering.

Jeremy Adam Smith is the senior editor of *Greater Good*.

Rebecca Goldstein



Danny Hellman

AMERICA'S TRUST FALL

Trust is essential to strong relationships and a healthy society, but it has been declining for decades, report Pamela Paxton and Jeremy Adam Smith. How can America learn to trust again?

"TRUST NO ONE."

That was the slogan of the TV series *The X-Files*, which followed two FBI agents in their quest to uncover "the truth" about a government conspiracy. Perhaps the most defining series of the 1990s, *The X-Files* touched a cultural nerve and captured a mood of growing distrust in America.

In the six years since the series ended, however, our trust in each other has declined even further, despite a brief rebound after September 11. The mood of cynicism and distrust captured by *The X-Files* in the '90s seems just as relevant today—indeed, a new *X-Files* movie was released this past summer. The decline or absence of trust also figures prominently in more recent hit TV series like *Mad Men, Survivor,* and *The Sopranos.*

In fact, "trust no one" has essentially served as Americans' motto over the last two generations. For 40 years—the years of Vietnam, Watergate, junk bonds, Monica Lewinsky, Enron, the Catholic Church sex scandals, and the Iraq war—our trust in each other has been dropping steadily, while trust in many institutions has been seriously shaken in response to scandals.

This trend is documented in a variety of national surveys. The General Social Survey, a periodic assessment of Americans' moods and values, shows a 10-point decline from 1976 to 2006 in the number of Americans who believe other people can generally be trusted. The General Social Survey also shows declines in trust in our institutions, although these declines are often closely

linked to specific events. From the 1970s to today, trust has declined in the press (24 to 11 percent), education (36 to 28 percent), banks (35 percent to 31 percent), corporations (26 to 17 percent), and even organized religion (35 to 25 percent). And Gallup's annual Governance survey shows that trust in the government is even lower today than it was during the Watergate era, when the Nixon administration had been caught engaging in criminal acts. It's no wonder popular culture is so preoccupied with questions of trust.

But research on trust isn't all doom and gloom; it also offers reason for hope. A growing body of research hints that humans are hardwired to trust. Indeed, a closer examination of surveys shows that trust is resilient: Major events can stoke our trust in institutions, just as other events can inhibit it. The science of trust suggests that humans want to trust, even need to trust, but they won't trust blindly or foolishly. They need solid evidence that their trust is warranted. Using this research as a guide, we can begin to understand why trust has been declining, and how we might rebuild it.

Why trust matters

Trust is an intrinsic part of human nature—the foundation of healthy psychological development, established in the bond between infant and caregiver, a process facilitated by the hormone oxytocin. (For more on the biological and psychological bases of trust, see Michael Kosfeld's essay on page 18 and the dialogue between Paul and Eve Ekman on page 20.)

Trust is most simply defined as the expectation that other people's future actions will safeguard our interests. It is the magic ingredient that makes social life possible. We trust others when we take a chance, yielding them some control over our money, secrets, safety, or other things we value.

People trust other people when they hire a babysitter, drive their cars, or leave their house unarmed. And we must also trust large organizations, like schools and businesses, for modern society to function. People trust institutions when they dial 911, take prescription medicines, and deposit money in the bank. Without trust, we would be paralyzed, and social life would grind to a halt.

When honored, trust promotes feelings of goodwill between individuals, which in turn benefits community. Researchers Robert Sampson, Steve Raudenbush, and Felton Earls have shown, in a study based on interviews with thousands of people across hundreds of Chicago neighborhoods, that, other things being equal, neighborhoods where residents trust one another have less violence than those where neighbors are suspicious of one another. A 2008 Pew Research Center study discovered that in nations where "trust is high, crime and corruption are low."

Trust helps the economy. Economists Armin Falk and Michael Kosfeld have shown that, when performing tasks for others, an atmosphere of distrust reduces individuals' motivation and accomplishments, and probably increases the cost of doing business. Other research by Stephen Knack and Philip Keefer has found that countries whose citizens trust each other experience stronger economic growth.

Trust in each other has declined much more steadily and consistently than our trust in institutions.

Trust is also essential to democracy, where people must be willing to place political power in the hands of their elected representatives and fellow citizens. Without trust, individuals would be unwilling to relinquish political power to those with opposing viewpoints, even for a short time. They would not believe that others will follow the rules and procedures of governance, or voluntarily hand over power after losing an election. If that trust declines, so does democracy.

Community, economy, democracy—once we recognize the role of trust in each of them, we can appreciate why declines in trust can be so damaging to society.

What drives distrust?

From that perspective, falling levels of trust are an ominous sign for American society. But why has trust been declining in the U.S. for so long?

Some researchers, such as *Bowling Alone* author Robert Putnam, have argued that this rise of distrust reflects profound generational shifts. Americans born roughly between 1910 and 1940 were a particularly civic and trusting generation, these researchers claim, forged in the crises of the Great Depression and World War II—crises that required people to rely on one another and band together. Government dealt with these crises effectively through New Deal programs and military victory over the Axis powers, winning the confidence of its citizens.

That generation is now dying out, replaced by younger people who, according to this theory, are progressively less trusting (starting with Baby Boomers, whose slogan allegedly was, "Don't trust anyone over 30"). In fact, a series of focus groups, conducted in 2001 by Harvard University's GoodWork Project, revealed an "overwhelming" distrust of politicians, the political process, and the media among the teenagers they interviewed. This generational decline implies that America's waning trust in others will not easily recover.

But why have succeeding generations become progressively less trusting? There are a number of possible explanations, none of them definitive.

For starters, trust in others depends on how much contact people have with other people—and Americans today are measurably more isolated than previous generations. They have fewer close friends, for example, and are less likely to join voluntary associations such as bird-watching groups and church choirs.

This is important, because people who belong to such associations tend to become more trusting as a consequence. Experiments, as well as experience, show that people trust people they know before they trust strangers—and so the more people you know, the more you trust. Researchers Nancy Buchan, Rachel Croson, and Robyn Dawes found that even when they created pseudo-groups by randomly giving study participants instructions on differently colored pieces of paper, the participants trusted members of their color "group" more than the others. The more memberships we have in groups—almost any group—the more trust we have in our lives.

The rise of television and electronic media as a major source of entertainment and news may exacerbate isolation, and thus play a role in the decline of trust. When the GoodWork Project ran another series of focus groups with adults in 2004, researchers "found that individuals typically blame the media for loss of trust."

Again, the effect appears to be generational. "Most of the young people we interviewed have a default stance of distrust towards the media," says Carrie James, research director of GoodWork. According to James, young people simply feel less


AP Photo/Henri Huet


© Aaron M. Sprecher/epa/Corbis


AP Photo/Denis Poroy

For 40 years—the years of Vietnam (far left), Watergate, junk bonds, Monica Lewinsky, Enron (center), the Catholic Church sex scandals, and the Iraq war (far right)—Americans have trusted each other less and less.

tied to larger institutions and American culture—they might trust family and close friends, but "they don't have good mental models" of how to trust more distant figures.

Of course, the most civic and trusting generation that survived the Depression and World War II grew up without TV or the Internet. Successive generations have watched more TV, in different ways, and with different program content than the older generation. Today's young people also spend a great deal of time surfing the Internet. Both media have the effect of isolating us during leisure time and repetitively highlighting the most dangerous and corrupt aspects of our society. For better and for worse, the seemingly boundless supply and demand for voracious media coverage of scandals means that Americans are painfully aware of our shortcomings and the shortcomings of our leaders.

It's also likely that growing economic inequality is contributing to our crisis of trust. Inequality in America declined during the mid-20th century, when our most trusting generation came of age, but the gap between rich and poor has widened dramatically since then: Since 1979, for example, the after-tax income of the richest one percent of Americans increased by 176 percent, but it only increased by about 20 percent for everyone else, with the poorest Americans earning just six percent more than they did at the end of the 1970s. As many studies and surveys reveal, most recently a 2007 report from the Pew Research Center, people feel more vulnerable when they're at a social disadvantage, making it more risky to trust others. Thus, those of lower income and racial minorities tend to answer more often that people will "take advantage" of them.

It may also be true that America's growing diversity hurts social trust. Many researchers have found that diverse neighborhoods and nations are less trusting than homogenous ones, though diversity is also linked to a high degree of economic vitality and cultural creativity. When Robert Putnam analyzed data from his Social Capital Community Benchmark Survey—which covered 41 communities across the United States—he found that cross-group trust was high in rural, homogeneous South Dakota and relatively low in heterogeneous urban areas like San Francisco. As America urbanizes and diversifies, trust is declining—at least in the short run.

"Trust no one" has essentially served as Americans' motto over the last two generations.

Falling and rising

The news is not all bad. Trust in institutions hasn't fallen in a straight line; instead, it rises and falls in response to specific events.

Consider how people answered the question about their confidence in religion between 1987 and 2006. In early 1987, 30 percent of the population said they had a "great deal" of confidence in organized religion. In 1987, however, several televangelist scandals erupted, including that of Jim Bakker. By 1988, confidence in organized religion had dropped to 21 percent. Americans' confidence then rebounded from 1988 to 2000, eventually climbing back to pre-scandal levels. Then in 2002, as a result of the Catholic Church's sex scandals, confidence in religious institutions dropped dramatically again, to 19 percent. Since 2002, confidence in organized religion has again rebounded—to 25 percent in 2006.

Similarly, the stock market crash of 1987 and the S&L bailout of 1989 hurt trust in banks and financial institutions. But public trust in finance gradually recovered (helped along by the boom years of the '90s) until it received another shock, the accounting scandals of 2002. We see a similar dip in Americans' trust in business: In 2000, 29 percent of respondents said they had a great deal of confidence in major companies. In 2002 (after the Firestone tires recall, Enron, and the wider accounting scandals), that number had dropped to 18 percent. It is too early to say what precise effect the current financial crisis will have on trust in banks and business, but, based on past patterns, we can predict that trust in these institutions will decline significantly.

So the pattern with institutions is less of general decline than of negative responses to scandals, followed by gradual recoveries. These scandals often focus public attention on a few fallible individuals—the embezzlers or child molesters. But once the shock of the scandal fades, the public returns to trusting the institution as a whole, rather than judging it by its most untrustworthy members.

Unfortunately, Americans' trust in one another does not generally react to historical events the way their trust in institutions does. In fact, according to the General Social Survey, trust in each other has declined much more steadily and consistently than has our trust in institutions. Since there are few, if any, scandals that seem to impugn the "average person," it takes a major event to influence America's trust in individuals in the way that their trust in institutions is routinely influenced.

We want to believe

While it may be difficult, if not impossible, to control interpersonal trust—you cannot *tell* people to trust each other—we can take steps to make our institutions more trustworthy. Indeed, it may be Americans'

more resilient trust in institutions that is our best hope of restoring mutual trust. Institutions help facilitate social, political, and economic transactions of all kinds by reducing uncertainty for individuals. Experiments show that when individuals successfully engage in an exchange that involves trust, it creates more trust and positive emotions.

For instance, at the end of a series of lab experiments involving trusting exchanges, sociologist Peter Kollock reports that study participants who trusted and had that trust reciprocated sought each other out, greeted each other as old friends, and, in one case, made plans to meet for lunch the next day. Since many of our daily transactions with one another—for example, in church or at work—are mediated by larger institutions, making these institutions more trustworthy seems like a vital first step toward cultivating trust in society at large.

Research has identified steps institutions can take to promote trust and help reduce distrust. For example, by protecting minority rights (through voting protections and antidiscrimination policies), a government can facilitate trust and cooperation among individuals who might otherwise be wary of each other. Indeed, looking at 46 countries over a 10-year period, one of us (Pamela Paxton) found that more democratic countries—countries that safeguard these kinds of rights—produce more trusting citizens.

This result is echoed in other studies. For example, a team of researchers led by University of Michigan political scientist Ronald Inglehart found that countries that had embraced democracy, gender equality, multiculturalism, and tolerance for gays and lesbians saw big jumps in happiness over a 17-year period. And, according to Robert Putnam, we can build cross-group trust by promoting meaningful interaction across ethnic lines and expanding social support for new immigrants.

Part of our effort to rebuild trust should involve providing a quality education to all Americans, for study after study shows that people with more education express more trust. Working toward equality is another possible step. Several studies have found that citizens of the most egalitarian societies are most likely to trust each other and their institutions.

There may be little that the government or other institutions can do to increase individual sociability, but individual citizens can help rebuild trust by joining community groups, connecting with neighbors, and talking to others about important issues in their lives. And if the leaders of national and local voluntary associations work to build better connections across different groups, they will help to rebuild community and a sense of trust.

Of course, we cannot *blindly* trust institutions, or each other. While America may want to be a trusting nation, it certainly doesn't want to be a nation of chumps. In an age when institutions have frequently betrayed our trust—and those betrayals are amplified over and over through the media—many more people might logically and understandably see *The X-Files* slogan—"trust no one"—as good advice.

This is why vague, unsupported calls for increased trust in institutions like banks or the office of the President are not viable solutions to the decline in trust. Instead, Americans need to see concrete steps to improve institutional transparency and accountability, and to reduce fraud.

The exact steps vary from institution to institution, but all must be supported by an underlying commitment to honesty and reliability. Banks, for example, should implement policies to prevent the kind of deceptive lending practices that contributed to the current mortgage meltdown. Government should open records, investigate abuses of power, and hew to constitutional principles. For institutions to be able to promote interpersonal trust, Americans must be able to trust that leaders and institutions will do what they say they are going to do—keep our money safe, protect our freedoms, advance our health, and so on—even when we are disappointed by particular individuals.

In the end, it is our natural drive to trust that offers our best hope of rebuilding trust in America. That drive was summed up by the tagline for a recent summer film: "I want to believe." Which film? The new *X-Files* movie. As the switch suggests, even in the worst of times, lurking under our suspicious gaze lies a need to trust in each other.

Jeremy Adam Smith is the senior editor of *Greater Good* magazine and author of *The Daddy Shift*, forthcoming in 2009. **Pamela Paxton, Ph.D.**, is an associate professor of sociology at Ohio State University and the co-author (with Melanie Hughes) of *Women, Politics, and Power*. Parts of this essay are drawn from her 2005 essay for the journal *Contexts*, "Trust in Decline?" published by the American Sociological Association.

Five Ways to Rebuild Trust

BY JEREMY ADAM SMITH

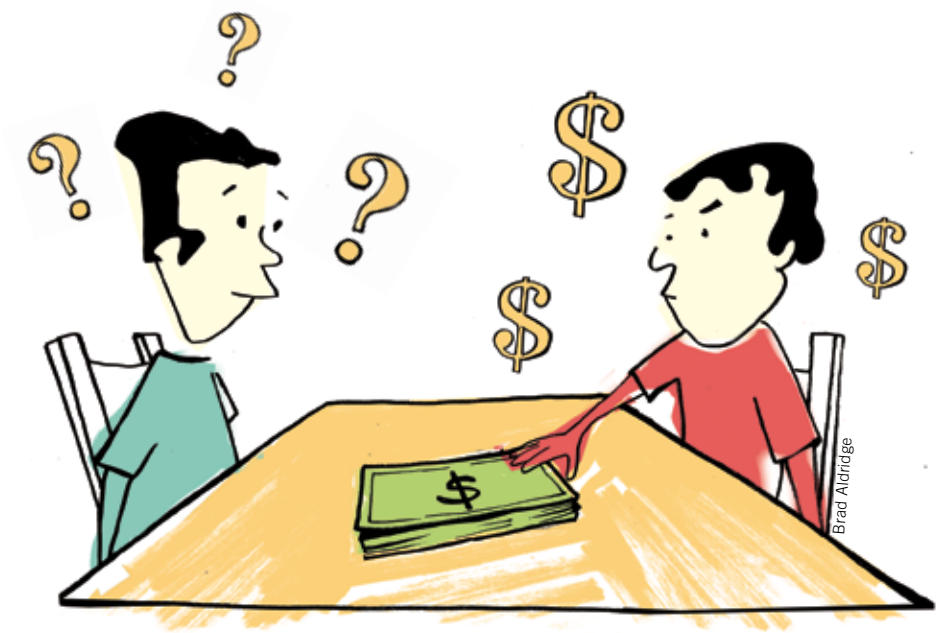
1. **Meet the neighbors.** According to many studies, meeting neighbors is one of the surest ways to build social trust, especially if you live in a culturally or economically diverse neighborhood. Consider organizing block parties or potlucks, or just saying "hello" to people in the morning.

2. **Join a group.** Nations with vibrant membership organizations, from bowling leagues to environmental advocacy groups, have higher levels of social trust. Getting involved with local, state, and national organizations—and signing up friends, family, and neighbors—fosters social networks as well as trust.

3. **Build bridges between groups.** In comparisons of 31 countries, Pamela Paxton found that membership organizations that wall themselves off from others actually diminish trust in their societies. By contrast, nations with many kinds of membership organizations that work together to reach common goals or bridge social divides show higher levels of general trust among citizens.

4. **Turn off the TV.** Television can isolate us from each other, highlight the worst aspects of our society, and privilege one-dimensional images over deliberation or dialogue—all of which harms trust in each other and our institutions. We can build trust by getting news from other media and discussing the issues with other people.

5. **Support minority protections, public education, and economic equality.** This sounds political—and, in many ways, it is—but studies by Robert Putnam and others reveal that implementing these policies leads to more trusting societies. "In the short run, there is a tradeoff between diversity and community, but … wise policies (public and private) can ameliorate that tradeoff," writes Putnam in a 2007 article in the journal *Scandinavian Political Studies*. "Community centers, athletic fields, and schools were among the most efficacious instruments for incorporating new immigrants a century ago, and we need to reinvest in such places and activities once again, enabling us all to become comfortable with diversity."



Brain Trust

Trust is not irrational or illusory, explains Michael Kosfeld. It's a biologically-based part of human nature.

IMAGINE A BARE ROOM AND TWO PLAYERS sitting face to face, about to play a game. The first player is the "investor"; the second player is the "trustee."

At the outset of the game, both players are endowed with a set number of points—say, 12 each—with each point equivalent to real money.

The investor can transfer any amount to the trustee. On the way to the trustee, the investor's transfer is tripled. So if the investor decides to transfer eight points, the trustee receives 24 points on top of her original 12, for a total of 36.

The trustee can then return any amount of her points back to the investor. After she has made her transfer back, that's it. The game is over. Each player tallies her points and the money she'll receive.

The investor's decision in this game is a decision of trust, which is why social scientists refer to this as the "trust game" and use it to test trusting behavior in different situations. The more the investor transfers to the trustee, the more she stands to profit in the end. But she must trust that the trustee will return a sufficiently large amount—at least as large as the original transfer—for the game to be profitable for her. And what if the trustee returns nothing?

The game nicely captures the fundamental dilemma of trust in human society. The decision to trust always entails the risk of being exploited or betrayed. Yet if people trust and the trust is rewarded, everyone is typically better off. To gain the benefits that come with trust, the trusting person must always overcome her natural aversion to the risk of betrayal.

Conventional economic theory maintains that people will always behave in a purely self-interested manner. According to this worldview, it makes no sense to trust, whether in a trust game or in real life, as any trust will be exploited. The trustee will always keep her entire windfall for herself, so the investor would be better off not transferring any money in the first place.

And yet when researchers like Joyce Berg and others have had people play the trust game with real monetary stakes, they have repeatedly found that the average investor will transfer half of her initial endowment and receive similar amounts in return. Through the trust game, researchers have also discovered a number of factors that seem to drive levels of trust. Familiarity breeds trust—players tend to trust each other more with each new game. So does introducing punishments for untrustworthy behavior, or even just reminding players of their obligations to each other.

These studies have demonstrated the strength of human trust, and that humans are truly worthy of this trust from one another. They have also improved our understanding of the social factors that determine trust. But two important questions remain: Is trust truly a biologically based part of human nature, and if so, what is it in the brain that makes humans trust each other?

Biology of trust

This question might sound complex, but there is a simple hypothesis about what steers the human brain to trust another human: a hormone called oxytocin.

Oxytocin is produced in the brain's hypothalamus and stored in the posterior pituitary gland. We know that it helps smooth muscle contractions in childbirth and in breastfeeding mothers. But recently we've discovered that its applications go beyond the maternal. It turns out that oxytocin also reduces social anxiety and helps people meet and bond with each other. A man and woman involved in the mating dance are releasing oxytocin; so are friends having a good time at dinner.

Forming relationships like these involves trust, but is there a direct connection between trust and oxytocin?

To find out, my colleagues and I conducted an experiment in which participants took either oxytocin or a placebo. Fifty minutes later, participants played the trust game against four different anonymous partners. They played with real money, with each point worth almost half a Swiss franc.

The results revealed that oxytocin does indeed seem to grease the wheels of trust. Of the 29 investors who had taken oxytocin, 45 percent transferred the maximum amount of 12 points in each interaction. By contrast, only 21 percent of the placebo-group investors did so. The average transfer made by the oxytocin-group investors was 9.6 points, compared with 8.1 points by the placebo-group investors.

Interestingly, the investors' expectations about the back-transfer from the trustee did not differ between the oxytocin and placebo recipients. Oxytocin increased the participants' willingness to trust others, but

it did not make them more optimistic about another person's trustworthiness.

The results indicate that oxytocin does indeed help humans overcome distrust. But does oxytocin really increase trust, or does it merely make us feel so good that we lose our aversion to risk and betrayal?

To figure that one out, we conducted a second experiment, in which investors faced the same choices as in the trust game. The investors in this experiment were again in a risky situation, but this time there was no human being on the other side of the table; instead, investors faced a computer that generated random numbers of points. Everything else in the "risk experiment" was identical to the trust experiment.

The result? Investors who'd received oxytocin behaved no differently than those in the placebo groups. We therefore concluded that the effect of oxytocin is, indeed, specific to trusting other people and the willingness to take risks in social situations. Oxytocin does not affect human attitudes toward risk and uncertainty in situations where there are no other human beings involved.

In short, trust is very much a biologically-based part of the human condition. It is, in fact, one of the distinguishing features of the human species. An element of trust characterizes almost all human social interactions. When trust is absent, we are, in a sense, dehumanized.

Applied trust

The discovery that oxytocin increases trust in humans is likely to have important clinical applications for patients suffering from mental disorders like social phobia or autism. Social phobia ranks as the third most common mental health disorder after depression and alcoholism; sufferers are severely impaired during social interactions, and are often unable to show even basic forms of trust toward others.

Given the results of our trust studies, the administration of oxytocin, in combination with behavioral therapy, might yield positive effects for the treatment of these patients, particularly in light of its relaxing effects in social situations.

At the same time, however, the results from these experiments raise fears of abuse. Some might suppose that unscrupulous employers or insurance companies could use oxytocin to induce trusting behavior in their employees or clients. Dishonest car salesmen might spray customers with the hormone before steering them toward a lemon.

Fortunately, most of these fears are baseless: The surreptitious administration of a substantial dose of oxytocin—for example, through air conditioning, food, or drinks—is technically impossible. Of course, one could always force the spray up another's nose. But it's safe to say that this would alarm recipients enough to override any glow they might get from the oxytocin.

It is more likely that advertisers might find ways to cleverly design stimuli to trigger the release of oxytocin in consumers through, for example, strategically placed smiling faces or warm handshakes, or perhaps even by measuring people's oxytocin levels in focus groups. All this might make these consumers more inclined to trust the claims made by the advertisers. Of course, advertisers (and most socially-intelligent humans) have always intuitively understood ways to manipulate perception and build trust; this just gives them one more tool for their kit. However, knowledge can cut both ways: By better understanding the underlying biological mechanisms of these stimuli, research into oxytocin could be even more useful for protecting consumers from the manipulative strategies of marketing departments.

To some people, these findings about oxytocin might raise another concern: that trust is not subject to rational control—that it's "all hormones." This seems to stand in stark contrast to the traditional idea of trust being the outcome of a cognitive, rational process.

In my view, trust is both, just like other human social behaviors. We cannot deny that many of our decisions are governed by cognitive processes, which in the case of trust take into account the available information about the trustee's motivation, the likelihood of a repeated interaction, and so on.

Nevertheless, research like this shows that our behavior is also influenced by a large number of very complex, yet identifiable, biological processes. Future research should help us understand how cognitive and biological processes interact in shaping our decisions about whom to trust.

But there's no denying the important role trust plays in cooperative behaviors, or that humans have a deeply rooted ability to trust. It's up to us to earn that trust from one another.

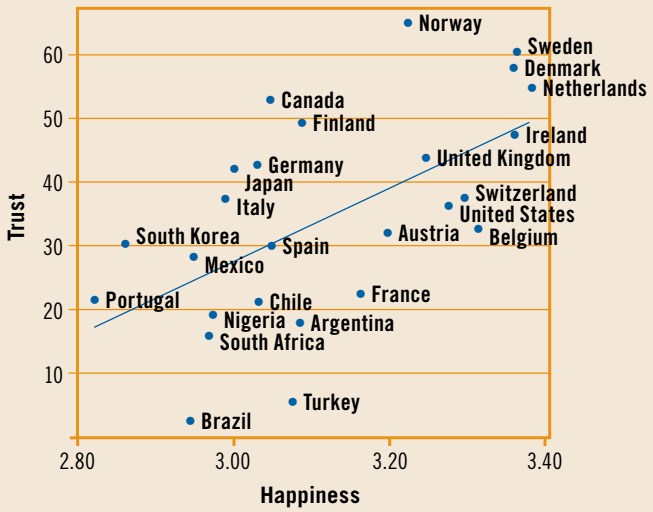
Michael Kosfeld, Ph.D., is a professor of business administration at the University of Frankfurt, Germany. This essay is based upon a 2007 report to the European Molecular Biology Organization.

Trust for Happiness

BY JEREMY ADAM SMITH

When Paul Zak, founding director of the Center for Neuroeconomics Studies at Claremont Graduate University, compared levels of trust and self-reported happiness in 25 countries (see graph below), he discovered that the two were closely related: The more trusting people are, the happier they are, and vice versa.

Noting the relationship between the hormone oxytocin, trust, and warm, happy feelings, Zak writes in a 2007 paper, "Nature has designed us to be conditional cooperators because it literally feels good."



Source: "The Neuroeconomics of Trust," Paul J. Zak, in *Two Minds: Intuition and Analysis in the History of Economic Thought*, Roger Frantz, editor (London: Springer, 2005).

A conversation between world-renowned psychologist Paul Ekman and his daughter Eve, with Jason Marsh



Mary Ann Mason

What's it like to be raised by a leading expert on trust and deception? Psychologist Paul Ekman and his wife Mary Ann Mason (a professor and former dean at the University of California, Berkeley), have extended a great deal of trust to their now-28-year-old daughter, Eve.

GROWING UP IN SAN FRANCISCO, a city renowned for its hedonism, Eve Ekman faced more than her fair share of temptations, especially when she got involved in the local punk scene as a teenager. Like most adolescents, she felt the urge to do some things she knew her parents wouldn't approve of—go to clubs on weeknights, dabble with alcohol and marijuana—and which would require lying about where she was going and what she planned to do once she got there.

But unlike those other kids, Eve has a father who is one of the world's leading experts on detecting lies. Paul Ekman, a professor emeritus at the University of California, San Francisco, pioneered the scientific study of facial expressions and body language. For more than 50 years, his research has identified how emotions are subtly expressed through nonverbal cues; for much of that time, he has devoted special attention to how and why people tell lies, and how others can catch those lies. His work has been used by police departments, teachers, and even the U.S. Department of Homeland Security. In 2001, the American Psychological Association named Ekman one of the most influential psychologists of the 20th century.

It sounds like every kid's worst nightmare: the parent who always knows whether you're telling the truth. But when it came down to it, Paul Ekman's scientific expertise on lying was of limited usefulness to Paul Ekman the parent.

"I have been studying lying professionally for more than 20 years, but it was not easy to deal with it as a parent," he writes in his 1989 book, *Why Kids Lie: How Parents Can Encourage Truthfulness*, which includes chapters by his wife, Mary Ann Mason, a professor and former dean at the University of California, Berkeley, and his son Tom, Eve's older brother. Indeed, as that book makes clear, it is one thing to be able to catch a kid in a lie; it's something very different to be able to raise a trustworthy child.

So how does an expert on lying, deception, and truthfulness try to foster trust and trustworthiness? Paul and Eve, who is now 28, recently sat down with *Greater Good*'s editor in chief, Jason Marsh, to discuss the benefits of trusting your kids (even when it's nerve-wracking to do so), how to encourage trustworthy behavior, and what it takes to build trust between parents and children.

* * *

Eve Ekman: Do you ever remember catching me for anything when I broke your trust, or a time you caught me dead in a lie?

Paul Ekman: Nope. When I suspected that you had done something wrong, I went to some length to avoid putting you in a position where you would have to lie. Instead, when I was worried about you, I would ask leading questions like, "Is there something on your mind? Is there something you want to talk about?"

In that way, you had the opportunity to disclose on your own. I did not want to ask you every day if you had gotten into trouble, but there was a rule of disclosure. There were very few things I expected, but if you did not tell me, it was a lie.

I remember once, when I had heard you come in after curfew, I asked you, "What happened the other night? I heard you come in late." So I was already telling you, "I know you did that," without trying to catch you in a lie.

The issue clearly arises in every generation. I lied to my parents all the time. They were very restrictive, invading my privacy continuously. The challenge of my adolescence was learning how to outwit them, which I did. I had an entirely secret life.

Eve: So you are saying it is the nature of the relationship with the child that determines the role of trust and lying?

Paul: Yes, certainly so. The role of the parent is an extremely difficult one because you have to keep moving backwards. When parents start out, they are completely responsible for their child, who is totally helpless. As that child grows, you have to roll back, you have to grant control; otherwise, your child can't grow. You have to be able to live with the fact that as you grant the child more autonomy, they will get into all sorts of trouble. But you ultimately have to leave it up to them.

Jason Marsh: It seems like this could be difficult advice to follow, to trust that much. What was it from your research, or personal experience, that motivated you to take this approach?

Paul: It wasn't based on research, mine or anyone else's. It was based on my own experience with parents who did just the opposite. They did everything they could to try to interfere with my life, and they were the last people I would have ever turned to when I was a child. I wanted to be the first person my kids would turn to.

It took some restraint, because worry was my middle name, way before I ever had a child. But I think, for children, the most important thing is to feel they can trust that their parents, whether they approve or disapprove, will always be available for help and support. If that's not the case, then I think you've really failed as a parent.

LIFE STAGES OF TRUST

Infancy

Learning how to trust begins at birth: Babies are born completely dependent on caregivers to fulfill their basic needs for food, shelter, comfort, and love. If caregivers react to babies' cries and body language in an attentive, consistent, and nurturing manner, those babies will feel safe and learn to trust their world, says researcher Danielle Kassow at Thrive By Five Washington, which champions early learning opportunities for children up to age five. "The parent-child relationship is the first social relationship," says Kassow. "It teaches the child that he can communicate in order to get his needs met, which transfers to forming relationships later in life." **—Jill Suttie**

Ekman family photo



Eve Ekman as an infant, with her parents.

> **"If you are not trusted, it makes all intimate relationships impossible."**

Jason Marsh: Eve, what kind of effect do you think this kind of parenting style had on your behavior growing up, and on your feelings of trust toward your parents?

Eve: I was not your conventional good girl. But I definitely did not want to disappoint the trust they gave me, because I thought they were cool, and I liked them. They weren't just authority figures; they were very open and available and accessible. And if I challenged what they did, they would explain it to me. It wasn't like, "Because I said so." There was always an explanation of why, and I guess that helped build trust. I always felt like, even in the worst case scenarios, they would be the first people I would call. Still, to this day, I call them first when I have trouble.

Paul: I remember the call from jail.

Eve: That was when I was arrested for protesting the war in Iraq.

Jason Marsh: Paul, do you think that by being so trusting, you not only earned the trust of your kids but also actually helped make them more trustworthy?

Paul: Yes. I didn't want them to get started on my path of lying to my parents. Because I do believe that it's a slippery slope: You start lying once, you lie another time, you lie about more things, and you've crossed the threshold. And I didn't want to put them in a position where they would cross that threshold.

Eve: What kinds of difficulties do parents encounter even when they want to put this kind of trust in their kids?

Paul: A major difficulty is that so much changes from generation to generation. What was normative in one generation can shift greatly—changing sexual morality, recreational drugs. Parents have a hard time trusting that their kids are prepared to deal with these things that are so new to the parents.

Beyond that, there is the difficulty of giving up control. Many parents are control freaks, and that is in part because they do not want to worry. And in ways they are right to worry—adolescents take risks that are very dangerous.

Eve: But it starts before adolescence, right?

Paul: It starts at three to five years of age, and it gets really strong in adolescence.

The Ekman family in 1986: Paul, Eve (at six years old), Mary Ann Mason, and Tom.



Ekman family photo

LIFE STAGES OF TRUST

Childhood

From an early age, children begin to differentiate between people who are trustworthy and those who aren't. In an experiment conducted by researchers Melissa Koenig and Paul Harris, three- and four-year-old children were confronted with adults who presented conflicting names for objects the children had never seen before. Some of these names were accurate; others were not. The four year olds could tell the accurate adults from the ones who were making names up, and later sought out the truthful adults, identifying them as trustworthy to the researchers.

In other research, Ken Rotenberg of Keele University in the United Kingdom has found that children develop trust in response to specific interactions they have with others; it is not something they apply universally. "Trust is dyadic and reciprocal, and children must learn unique patterns of trusting for each person they encounter," says Rotenberg. "Being too trusting can be a deficit." Instead of encouraging blind trust in children, Rotenberg argues that parents should focus on raising children who are worthy of trust. "Kids who are trustworthy have more friends and are better adjusted in school," he says. **—JS**

The Dalai Lama asked me once, "What is destructive compassion?" And I said that destructive compassion is when you are so worried about your child that you overcontrol them.

Since I work in this area and think about this area, I try to be very explicit and never put anyone in the position where they feel they have to lie to me. If they think that I am going to be a strict disciplinarian, that will change the relationship as well. The major research I have done shows that the main reason people lie is to avoid being punished.

Jason Marsh: But it seems that a lot of parents feel caught in a Catch-22. They may understand why it's important to trust their kids, but they may not feel that their kid is worthy of that trust. What can parents do to help encourage the kind of truthfulness in their kids that makes them more comfortable trusting those kids?

Paul: They can do things all the time—over the dining room table, with stories, when they're playing Chutes and Ladders and kids get tempted to cheat in the game. I really think up to the age of 10 or 11, children are zealots for the truth—they really don't want to mislead or be mislead. So you can build on that.

> "I really think up to the age of 10 or 11, children are zealots for the truth."

You can do it by example. When Eve was born, I quit smoking after I had smoked for 30 years. And I also decided I was going to try to see if I could lead my life without lying to anyone about anything. It was much harder to do that—to figure out ways to be truthful without being harmful or insulting, to stay polite but be truthful. And it became a real challenge. But I also thought, "I'm going to try to do this because that's the example I want to be showing." I want my kids to see that there's a way to be truthful. It was very deliberate.

Parents also need to establish the rules of disclosure and the obligations that come with their trust. For instance, we always made very clear to both of our kids that if they got into trouble in school, they were obliged to tell us. So if they didn't tell us, then they were lying to us. That meant we had to define "trouble." Trouble meant they were held after school, or called to the principal's office. That's a rule of disclosure.

We need to spell out these rules and obligations in any relationship. In the business world, do you have to tell your employer if you're looking for another job? Does your employer need to tell you if they're thinking of cutting your position? What are the rules of disclosure? They're never revealed. They're kept ambiguous. That just makes for a lot of distrust and bad work relationships. Same in marriages. I have one colleague who told me, "My rule is that anything I do out of town is OK." I said, "Does your spouse know that?" He never felt he needed to tell his spouse about it. There was no disclosure. It's just the basis for misunderstanding and distrust.

Jason Marsh: Eve, do you think that growing up with those rules has affected your relationships with others, outside of your family?

Eve: It's funny because as my dad was speaking, I was thinking about how I really do respect authority. Even though I think I'm a dissenter at heart, I definitely respect authority. You know, I'm afraid of getting caught, and that helps me not do things wrong. I was arrested once, but that was

simply because I was protesting. Other than that, I've never broken the law. I've only gotten one ticket.

In general, I hope that when punishment is exacted, it's fair and just, and I do think that was modeled to me from my family relationships. I think if there's an inconsistent message, I could imagine feeling like, "Well, those laws don't apply to me."

And in my personal relationships with friends, as well as romantic relationships, I definitely think trust is core. I definitely know I'm someone people depend on. I'm a social worker, that's my profession, but I also feel I'm the person who people call when things are really hard and they need someone they can trust. And I feel really respectful of that role, and I appreciate it.

I think you experience people's family life through how they interact with you, and I feel like I've been the beneficiary of a great deal of trust, and I myself am trusting. But I've been burned. I remember talking with my dad about it at one point, like, "Why do I feel disappointed? I feel like I'm trusting, and I'm not sure that's always met." Like, in my early 20s, when I first started to have really meaningful and important relationships outside of family, I found there were some people for whom family wasn't a model of trust and for whom learning trust was new. And so they would maybe play people off each other, do those kinds of things that ultimately will burn you.

Jason Marsh: So Paul, when you hear Eve talk about her ability to trust others and instill trust in others toward her, I wonder if you could step back and, putting on your psychologist's hat, draw on some research to explain why that may be. How might the particular parenting style that you've practiced foster that trustworthiness over time? And perhaps even more importantly, what could be the negative consequences of not fostering that sense of trust and trustworthiness?

Paul: There are a lot of clinical reports of people who are commitment adverse and can't trust others. Based on their reports of their childhood, it seems that this is often a result of how they were brought up. They found they couldn't trust their parents because their parents broke their promises or their commitments. And unreliability can be very damaging.

When I was 13, I spent five weeks rehearsing to play a role in a Gilbert & Sullivan show, *The Mikado*, for one performance, which my parents missed by two hours. I never forgave them for that. That was very decisive for me, that unreliability. Something like that can make it quite a struggle for you to trust others. Quite a struggle.

But there's been much less scientific attention given to the positive side: What does positive parental behavior that earns trust look like? What are its benefits? Psychologists study problems; we don't study success. But I would expect just the reverse—that people who were trusting as children grow up being able to be trustworthy.

Jason Marsh: Some parents might try to earn their kids' trust, but they might not exhibit trust toward their kids in return. What could be the consequences of not demonstrating trust toward your kids?

Paul: You have children who are either crippled by the over-controlling, micromanaging parent, or who become devious in order to get their freedom. They've got to grow, and they are increasingly capable of acting independently. So they're going to find a way to do so, or you're going to destroy them.

If they find a way to gain autonomy through deviousness, through gaming the system, that's really a bad way to learn



Ekman family photo

The Ekmans in 1997, when Eve was 17.

LIFE STAGES OF TRUST

Adolescence

In their teens, kids learn to take on new roles and develop a solid, consistent self-image. As they seek greater independence from their parents, they are more susceptible to pressure from friends, and may begin experimenting with risky behaviors like alcohol and drug use. Parents may try to limit their children's autonomy in an attempt to protect them, but experts say this can cause teens to become withdrawn or hide their activities from their parents, further weakening trust bonds.

According to child psychologist Russell Barkley, parents need to avoid this cycle of mistrust by communicating expectations for their teens in a clear, consistent manner, then following through with appropriate consequences. "Trust must be earned," says Barkley. "Parents need to do spot checks on their teens' activities, to make sure they are doing what they said they would do. If they are, they should be rewarded with more autonomy; if not, there needs to be appropriate punishment." Barkley believes that calm, consistent parenting creates an atmosphere of respect and trust in the family. "Teens count on their parents to be there for them," he says, "even when setting up disciplinary consequences." **—JS**

LIFE STAGES OF TRUST

Adulthood

In young adulthood, developing bonds of intimacy becomes paramount. We form intimate bonds by learning how to trust another person to treat us fairly and protect our emotional safety.

According to psychologist Joshua Coleman, the capacity to develop intimacy is highly influenced by what kind of relationships you had early in life. "Parents who are largely loving, interested, and caring toward their children will make it easier for those children to develop intimate bonds later in life," says Coleman, whose essay on betrayals of trust appears on page 26. "But if the parents were rejecting, the children may carry a sense of shame and inadequacy into their adult relationships."

Still, says Coleman, it's not all about parental relationships. Other relationships can influence trust, too. "Trust is about transparency, about learning that it's safe to let another person know who you are and what you feel, and it's basically trial and error," he says. "You pay attention to your instincts about whom to trust, and you try it out." **—JS**



independence because once you learn how to deceive your parents, there's a lot of temptation to do it with everybody else. That brings short-term gains and long-term losses. But if you're the type who just goes from one relationship to another, then you may never realize what you're losing—until you get late in your life and you feel you haven't built anything.

Jason Marsh: Based on research and your own experience, is it possible for you to sum up what you believe is most important to raising kids who are both trusting and trustworthy?

Paul: The two are related. People who are distrustful are usually not very trustworthy themselves, and difficult to deal with.

You have a fundamental choice to make about how you're going to lead your life: Are you going to be suspicious and risk disbelieving people who are truthful? Or are you going to be trusting and risk being misled? As a parent, you always need to be trusting and risk being mislead. Being wrongly accused is terrible. And it is less pleasant to live your life being suspicious all the time, unless you are a police investigator. And you do not need to be an investigator in your home.

As a parent, you always need to be trusting and risk being mislead.

Eve: Is there such as thing as too much trust?

Paul: No.

Eve: Really? Even when your kids are lying to you, and you know they're lying to you?

Paul: There is no general rule.

Eve: I imagine people who read your book *Why Kids Lie* would want to be able to better catch their kids in lies.

Paul: But that absolutely was not my intention; my intention was to explain to parents why kids lie, not how to catch them in lies. There is nothing in the book that teaches how to detect lies. That is not your job as a parent to be the cop, to be the interrogator. You must be the teacher, or the model. You want to talk to your kids about the real costs of lying. The real cost is not being trusted. If you are not trusted, it makes all intimate relationships impossible.

Eve: I did trust you and always felt you had my best intentions in mind. I sometimes felt that I knew how to take care of myself more than you could give me credit for, but I think that is a pretty natural part of growing up and wanting full freedom.

To this day, I think that trust is present in my everyday thinking. When I am making a hard or risky decision, I think, "What would my parents think?"

Paul: Having had parents who made every mistake you could make—they were good models of what not to do.

Eve: So, do you trust me?

Paul: Of course.

Eve Ekman, MSW, is a San Francisco-based social worker, writer, artist, and editor of the interdisciplinary magazine *Eth6: Social Work, Journalism, and Art from the Invisible City* (www.ethsix.com). **Paul Ekman, Ph.D.**, is the world's foremost expert on facial expressions and a professor emeritus of psychology at the University of California Medical School in San Francisco. He is the author of 15 books, including, most recently, *Emotional Awareness*, a conversation between himself and the Dalai Lama (reviewed on page 46). He is also a member of *Greater Good's* editorial board.



Mary Ann Mason

LIFE STAGES OF TRUST

Old Age

For seniors, trust is a factor in maintaining health and longevity, says John Barefoot, a professor of medical psychology at Duke University. In a 1998 study, he and his colleagues surveyed 100 men and women between 55 and 80 years of age and found that high levels of trust were associated with better self-rated health and greater life satisfaction.

Others studies on the elderly have shown that trust is correlated with better health habits and lower blood pressure, findings that may explain Barefoot's results. "People with low levels of trust tend to be more vigilant and wary during social interactions, and are thus more likely to interpret other people's behavior as negative or threatening," says Barefoot. "If they act on these suspicions, it can elicit negative responses from others, making the interaction objectively more stressful." Too much stress, in turn, can harm physical health. It's also true that trust facilitates close relationships, which, Barefoot says, can provide essential physical and emotional support as we near the end of our lives. **—JS**

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www.GreaterGoodParents.org

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Comics from the collection of Jenny Miller (www.jennymiller.com/romancecomics)

Surviving Betrayal

Romantic betrayal is traumatizing, says psychologist Joshua Coleman. But couples can learn to trust again.

JANICE THOUGHT SHE HAD A GOOD marriage. While she and her husband didn't have much of a sex life after they became parents, they enjoyed each other's company and liked parenting their two young children. Janice believed their marriage was grounded in a solid love for one another.

But this all changed when Janice picked up Robert's cell phone and saw a text message saying, "I can't wait to see you again. Last night was amazing."

She read through a series of texts revealing that he had been having an affair with a woman co-worker for at least several months. "I felt like someone hit me in the head with an axe," said Janice, a patient of mine whose name and details have been changed. "Really. I had to lie down on the bed because I felt like the floor was about to drop out below me. Everything I believed to be true was suddenly called into question."

Discovering a partner's affair can be devastating because it strikes at so many aspects of one's identity. It can cause the betrayed person to doubt their own attractiveness or judgment in people, and it can raise fundamental questions about the inherent goodness of the world.

This is because our relationships are built upon the fragile agreement that those about whom we care most deeply will behave, in large part, as they have always behaved. A betrayal can shatter that trust and open the door to the possibility that things in one's small, intimate world may not be as they appear.

The roots of these feelings stretch back to childhood, when we need predictability in the care we receive. A great deal of research suggests that when a baby's need for predictability is not met, that baby can grow into an anxious and distrusting adult. As children, we will even irrationally blame problems on ourselves instead of our parents as a way to make the world feel more orderly and predictable.

And to a degree, trust always entails the suspension of disbelief. This is, in part, why betrayals can be so psychologically traumatizing. It's as if one's entire view of the world has been proven false. In fact, studies show that psychological traumas like discovering an affair have the capacity to affect brain functioning long after the event occurs. One of these changes is the development of a hyper-vigilance to further assaults. This makes sense from an evolutionary perspective, in that the hyper-vigilance may protect us from haplessly wandering into another psychological injury.

Unfortunately, hyper-vigilance is not a great discriminating device. It exists primarily to put the individual on global red alert that danger is afoot. It creates a suspicion of future betrayals and tempts us to look for lies elsewhere—in other family members, co-workers, or spiritual leaders. Indeed, studies reveal that going through a divorce reduces trust in other people as well as institutions.

Yet this distrust is often misplaced. What's more, it limits the strength and the number of our social connections, often leaving us isolated from the rest of the world. This is why it is urgent for us to learn how to trust again, even if one's relationship is destroyed. Trust isn't just essential to relationships; it's necessary for a happy, meaningful life.

I see a lot of couples in my psychotherapy practice whose relationships have been rocked by infidelity or other forms of betrayal. While many of these relationships end, often in bitter divorce, I've learned quite a bit about how people on both sides of a betrayal can work to restore feelings of trust, and so repair their relationship. While this is rarely a quick or simple task, couples who commit to working on their relationships often find they are much stronger as a result. Just as importantly, no matter the outcome of their relationship, I've seen people learn to restore their trust in the world around them.

Rebuilding trust

If you are the person who has been betrayed—whether it's by an affair, losing

savings to your spouse's gambling, or learning that your spouse spoke harshly about you behind your back—rebuilding trust can be staggeringly difficult. But it can also bring several rewards. While not every betrayal is caused by a problem in the marriage, the betrayed person can use the crisis of betrayal to better understand his or her partner, and this understanding can help reduce the probability that the traumatic behavior will occur again—a vital step toward rebuilding trust.

This isn't just about maintaining a romantic tie. It's also about friendship. Marital researcher John Gottman has found that couples who retain a strong friendship throughout their romantic relationship are the ones who have the most lasting partnerships. Friendship demands that partners be willing to understand each other's inner world—their needs, desires, motivations, and sense of well-being.

A key part of marital friendship is taking responsibility when you make mistakes, whether those mistakes are small or huge. As a couples' therapist, I have observed that the most important predictor of rebuilding trust after an affair, other than love, is the capacity for *both* members of the couple to take some responsibility for what happened. This can be a bitter pill to swallow if you are the person who was betrayed. Yet it is a step that must be taken if the relationship is to be saved.

This was illustrated by Janice and Robert's behavior after she discovered his affair. It became clear that it wouldn't be enough for Robert to end the affair with his co-worker, rededicate himself to Janice, and repair how hurt and humiliated she felt. It was also necessary for Janice to admit that she had shut down sexually since she had become a mother and had ignored Robert's complaints about their sex life. Janice had to acknowledge that Robert, in his own way, felt hurt and betrayed by her turning away from him and neglecting what had been an important form of connection with her.

After establishing mutual responsibility, a big part of rebuilding trust is regaining a sense of control. It is based upon the principle that we are not hapless victims of our partner's whims, nor are we victims of our own mistakes; we can actually *do* something to improve the relationship. Thus the betrayer must be willing to give the betrayed a sense of control, while the betrayed person must try to find that control.

Beyond these two key steps—sharing responsibility for what happened and regaining a sense of control—I've also found the following to be essential for the person who was betrayed.

Avoid humiliating your partner. It will be tempting to watch your partner squirm at the end of a hook for making you suffer. However, at some point you have to decide whether you want revenge or a relationship. You can't have both—at least not for very long. If you fail to allow your partner to make sincere amends, there's a greater chance your relationship will end. John Gottman has found that when individuals don't allow their partners to repair the damage caused by marital conflict, they increase the chance of divorce.

Separate out complaints from criticism. Your relationship will heal more quickly if you communicate your complaints in a way that makes your partner motivated to re-establish trust. Shame, humiliation, and criticism are counter-productive because they cause the other to shut down, avoid, and retreat. Researcher Martin Seligman advises that people try to think of their partners' flaws in non-absolute terms. For example, try to see the affair as a terrible mistake, one which you may or may not have had some complicity creating. If, on the other hand, you see the betrayal as evidence

"We are never so defenseless against suffering as when we love."



of a permanent character defect, such as an anti-social personality disorder, you will be less likely to move toward forgiveness. You may be right that your partner is certifiably suffering from a personality disorder, but if that's the case, you may be better off leaving the relationship instead of remaining critical of your partner, and so torturing both of you.

Isolate the times that you talk about the betrayal. It is tempting for a betrayal to become a 24/7 topic of conversation. This can be damaging to both parties. Don't underestimate the power that positive distraction has in creating a happy life and relationship. Agree upon a time to check in on the topic every day for 15-20 minutes. The person who has been betrayed should make the decision about when to reduce the frequency of the conversations.

Evaluate whether you have the capacity to forgive your partner. It is possible that the wound is too deep and that the betrayer too flawed to ever again be worthy of trust. In order to determine whether you should work to restore trust in your partner, ask yourself: Is this a new behavior, or part of an ongoing pattern of untrustworthiness? If it's not part of an ongoing pattern, there may be good reason to take the risk of working with your partner to heal the betrayal.

You should also ask if your partner seems genuinely motivated to change, or just motivated not to feel guilty. Your hurt and angry feelings may make it difficult for you to read him or her correctly. In addition, the fact that your trust was violated may make you less able to take your partner's words at face value.

However, there is nothing more precious to us than our ability to trust our perceptions. You have the right to regain a sense of control, even if it infringes on the usual rules of relationships. After betrayal, it is legitimate to be able to look at phone records, emails, and cell phone logs in order to feel reassured that there is congruence between what your partner says and does.

That may seem radical, but all bets are off after a serious betrayal. I even encourage some of my clients to hire a private investigator if they're truly unsure. Feeling there's consistency between what your partner says and does is critical to rebuilding trust and maintaining your sanity. However, this is a short-term strategy and shouldn't be considered a substitute for the harder part of negotiating true, long-term trust.



Get help. After a romantic betrayal, it is common for people to avoid reaching out to their usual support system because they don't want to share their shame or humiliation. As a result, betrayal begets isolation. This is why most couples aren't able to contain the potential damage of a betrayal without professional help. It's not just about preserving the relationship: If you have been betrayed, you might need help to control the damage caused to your individual identity, your self-esteem, and your feelings of security in the world. A betrayal may be especially damaging if it was preceded by other betrayals over the course of your life. In that case, you may be tempted to experience a recent betrayal as an expression of your fate, instead of plain old bad luck.

Making amends

What if you are the betrayer? Most people who have betrayed someone they love feel plagued by feelings of guilt, sadness, shame, or remorse. Your own capacity to hurt a loved one may also damage your own self-esteem and identity.

If you have betrayed someone you love, the following steps are crucial.

Take complete responsibility for your actions. No matter how driven you felt to have the affair, nobody made you do it. The more you blame your partner, the longer it will take him or her to believe that you are trustworthy and to want to forgive you.

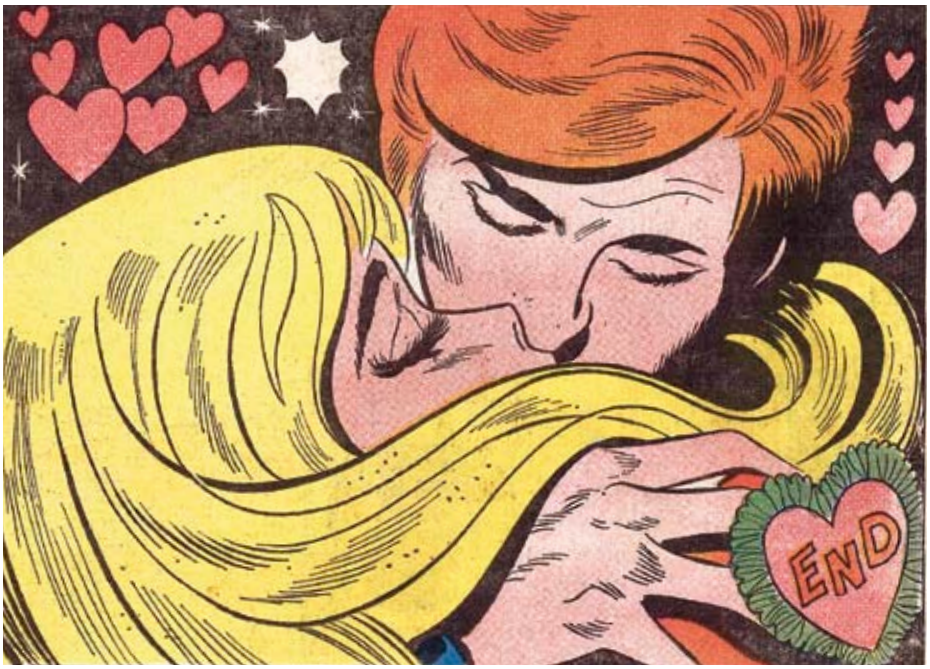
Assume it will take time for your partner to heal. Your feelings of guilt, shame, or humiliation may make you reluctant to raise the topic of the affair or, when raised, cause you to close down the conversation prematurely. Don't. Assume that it will take at least a year for your partner to be able to trust you again. You should be prepared to maintain ongoing, sometimes painful conversations about your betrayal. You may also need support from close friends or a therapist.

Be empathic. Your guilt and shame may make you uncomfortable listening to how badly you've made your partner feel. However, it is critical that you show empathy and make amends for how much hurt you've caused your partner. This is because empathy is an expression of care and concern. Showing that you are willing to bear your feelings of guilt, remorse, or fear of losing

your partner—without blaming back or cutting off the conversation—will go a long way to proving that you are someone worth trusting again.

Respect the need for new limits or rules. Your partner has good reasons to be more suspicious than he or she was prior to the event. Accept that there should now be more transparency around emails, phone logs, and so on. The less defensive you are, the more quickly your relationship will heal as trust is re-established.

Show enthusiasm for change and repair. Your partner may doubt that you want to change. If you really want to show that you are worth trusting, you will have to demonstrate that you are in it for the long haul. It may not be enough just to get into individual therapy or couple's therapy. As psychologist Janis Spring Abrams observes in her 1997 book, *After the Affair,* the person who committed the betrayal may have to change jobs or even move out of the area as a way to show his or her dedication to saving the relationship.



Trust isn't just essential to relationships; it's necessary for a happy, meaningful life.

Who do you love?

Ultimately, we have to take full responsibility for who we choose to love and who we choose to trust. If you frequently fail at finding people worth trusting, it may mean that early in life, your instincts were damaged by those entrusted to make you believe that the world is a safe place. If you come from a family where you were betrayed through incest, abuse, or other serious violations of trust, you may be unconsciously drawn to someone who is more likely to betray you. If that is the case, you may need professional help to understand how to leave your relationship and choose healthier partners.

On the other hand, you may create what you most fear: Your childhood traumas may have damaged your ability to know when to trust and when to be suspicious. Your vigilance against being betrayed may be so high that you are unable to get a clear read on who your partner is and what he or she is up to.

For example, one patient of mine was constantly belittled and rejected by everyone in his family. As a result, he entered his marriage with low self-esteem and an acute fear of abandonment. The weight of these emotions made him overly sensitive and angrily reactive to the slightest criticism or complaint from his wife. His terror that she would replace him resulted in his wife's feeling so burdened by his insecurities that she fulfilled his worst fears and left him for another man.

In other words, just because you *feel* that you were betrayed doesn't mean that you were. You may be tempted to believe that your partner has betrayed you if he or she doesn't live up to your unrealistically high expectations. It isn't your partner's job to repair your childhood traumas, and it is not necessarily a betrayal of you if they fail to do so. In addition, hurting those we love and getting hurt by them is part of the inevitable, even necessary, give and take of intimate relationships.

Gambles worth taking

Trusting our emotional well-being to another is an active process. It is built on a kind of foolish, naïve notion that we can avoid heartache or calamity. As Freud wrote, "We are never so defenseless against suffering as when we love." I have worked with many adults who have been so betrayed by family members or past romantic partners that they wonder if they can ever love or trust again. Yet most are willing to try because they don't want to live their lives filled with fear and guided by the avoidance of risk.

Rebuilding trust after a betrayal is a gamble for both people. For the betrayer, the gamble is that the act of facing both his inadequacies and his capacity to hurt someone he loves will help him regain that person's love. For the betrayed, the gamble is that the act of allowing oneself to forgive, and potentially getting hurt again, is worth the risk of keeping and even improving the relationship.

Quite often, these are gambles worth taking. Rebuilding trust after a betrayal isn't easy and it's rarely fast, with many pitfalls along the way for both people. But most couples who succeed find that their relationships are much stronger for the effort. Janice and Robert used the crisis of the affair to discover what was missing in each of them as individuals, as well as what was missing from their relationship. Years later, they have healed a wound that seemed like it would always be open.

Obviously, not all betrayals end on such a high note. But whether you stay with the betrayer or deem him or her unworthy, it is critical to heal the effects of the betrayal. This is because a happy life requires us to heal the wounds of the past. It also requires a willingness to see that the future may not resemble the past at all.

Joshua Coleman, Ph.D., is a senior fellow with the Council on Contemporary Families and is a psychologist with a private practice in San Francisco and Oakland. He is the author of four books, most recently *When Parents Hurt: Compassionate Strategies When You and Your Grown Child Don't Get Along.*



Chicago Historical Society (AP Photo)



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IN FACES WE TRUST

First impressions can decisively shape political elections, reports Anna J. Abramson. What does that say about democracy?

HIGH-STAKES DEMOCRATIC ELECTIONS often boil down to a matter of trust. In this year's presidential race, for example, junior senator Barack Obama has routinely peppered his speeches with "you can trust me on that," or, "so you can trust me when I say…." Meanwhile, veteran senator John McCain has tried to convince Americans that he has "earned" their trust.

"Trust is uniquely and especially prominent this year because it's an issue that rings so loudly when you talk about experience versus inexperience," says Democratic strategist Jake Maguire, who has worked on campaigns for John Kerry, John Edwards, and Obama.

On the campaign trail, Maguire says, candidates often swap the suits and ties they wear at speeches and debates for rolled up sleeves and jeans. "Out there on the stump, the best way to look trustworthy is to seem like you're 'one of us,'" says Maguire. "The idea is: You can trust them. They're just like your neighbors, the people you know."

Indeed, political operatives have worked since the dawn of democracy to make candidates *look* trustworthy—an effective strategy, according to cutting edge studies that may change the way we view campaigns and elections. In recent years, researchers have found that snap judgments of candidates, based on nothing more than their faces, can reliably and powerfully predict the outcomes of political elections. According to these studies, it only takes a tenth of a second for subjects to decide if a face is trustworthy or not.

That means that despite the many appeals to voters' values, interests, and policy positions, the outcome of this year's historic presidential election may hinge on something that operates under the radar of human consciousness. "We make these rapid judgments from facial appearances whether we like it or not," says Princeton psychologist Alexander Todorov, a pioneer in the study of first impressions. And that, it turns out, may be a serious problem for political elections.

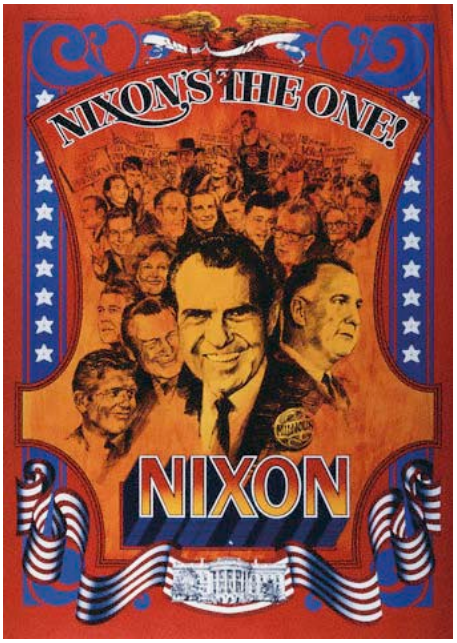
Gut reactions

In a series of experiments, Todorov and his colleagues have revealed the political implications of our gut instincts.

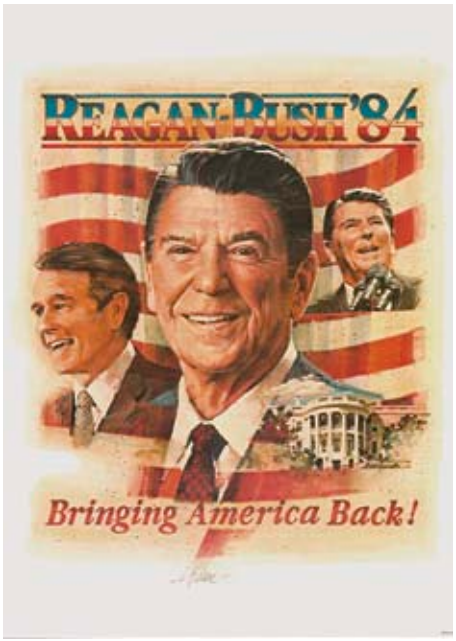
In one 2006 experiment, they gave participants small amounts of time—100 milliseconds, 500 milliseconds, and 1 second—to judge if a face was trustworthy. The researchers discovered that decisions made after 100 milliseconds were highly consistent with decisions made with longer time constraints, suggesting that only a very brief time period is necessary to make a lasting evaluation. In other words, beyond those first 100 milliseconds, additional time for reflection doesn't appear to change first impressions.

Todorov and his colleagues went on to study how these split-second verdicts might inform our political decisions. In several studies in 2007, the investigators presented participants with photographs of the winner and the runner-up of a senatorial or gubernatorial election. The researchers made sure participants didn't recognize the candidates or know which one was the winner, then they posed a simple question, "Who is more competent?"

The results: After only 100 milliseconds of exposure to the faces, participants chose the winning candidate for about 72 percent of the Senate races and 69 percent of the gubernatorial races. In other words, gut instincts were highly consistent with actual votes cast after many months of supposedly rational deliberation. Predictions were as accurate after only 100 milliseconds of exposure as they were after 250 milliseconds and an unlimited amount of time. In fact, when subjects were instructed to take their time and think carefully, their responses were *less* consistent with real electoral outcomes than the snap judgments were. What's more, judgments of competency were highly



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correlated with the margin of victory: the higher the facial competency rating, the higher proportion of votes that candidate received in the real election.

It's as if all the debates, stump speeches, and TV advertising hardly mattered more than the immediate effect of a candidate's physical appearance.

"I was fairly surprised by the initial data," says Todorov. "We used a single slice of information, yet it did pretty well predicting a sizable proportion of the elections." And, he adds, "we replicated the main findings several times before I was sure that the phenomenon was real."

Todorov's results are echoed in other researchers' studies as well. In a 2006 experiment, for example, economists Daniel Benjamin and Jesse Shapiro asked participants to view silent 10-second clips of political debates. Despite not hearing the content of the debate, says Benjamin, "People were remarkably accurate in predicting the election outcome based on just watching these video clips."

Economists have long noted strong correlations between economic conditions and the winners of political elections, with incumbents often benefiting from a solid economy, for instance. But for the first time, this study revealed an even stronger correlation between these rapid judgments and election outcomes. In other words, if you want to predict who's going to win an election, giving people a split second to choose a face will yield an answer at least as accurate as one based on an analysis of the state of the economy.

Other surprising aspects of Benjamin and Shapiro's study also seemed to confirm Todorov's findings. For example, participants' predictions were actually less accurate when the sound was turned on. Benjamin speculates that the audio distracted participants from their first instincts and led them to make decisions based on assumptions about who wins elections. In predicting electoral outcomes, argues Benjamin, "They would have been better served by going with their gut reactions."

The trust reflex

The inclination to make snap judgments almost certainly has deep evolutionary roots. Neuroimaging studies reveal that trust evaluations involve the amygdala, a brain region responsible for tracking potential harm—something that probably came in handy on the prehistoric African savanna, where judging trustworthiness in a split second could well mean the difference between life and death. From an evolutionary standpoint, suggests Todorov, rapid detection of trustworthiness may be essential for survival.

Indeed, a growing body of literature in social psychology reveals that we need only small bits of information—so-called "thin slices"—to effectively navigate a complicated social world. Many of these studies find that with very limited exposure to social cues, subjects are remarkably accurate in a wide variety of judgments and predictions—a useful skill in a crowded urban environment, or one cluttered by the TV, radio, and Internet.

For example, research by social psychologist Dave Kenny has repeatedly found that it takes only a brief period of observation—and absolutely no speech at all—for strangers to accurately gauge the personality traits of one other. Study participants' assessments of strangers, based only on non-verbal cues and facial appearance, are remarkably consistent, and similar to how the individual assesses himself.

But when it comes to rapid judgments of which candidate to trust, it's not clear that our gut reactions effectively steer us toward the person who'd actually do the best job.

To some, this line of research might call the whole democratic process into question. If people are voting based on split-second impressions, what's the point of debates or any deliberative activity designed to appeal to rational decision-making? Why not just cut to the chase and vote for candidates based on their faces instead of their voting records and policy positions?

The best answer might be that rational thoughts and gut feelings exist in a never-ending conversation with each other. Gut reactions are important—but so is political information. Rational and irrational processes likely combine to shape citizens' voting behavior.

Milton Lodge, a political scientist at SUNY Stony Brook, studies "hot cognition"—the idea that all thoughts have an emotional dimension. "The idea of thinking without feeling, making judgments without affect, is essentially impossible," he says.

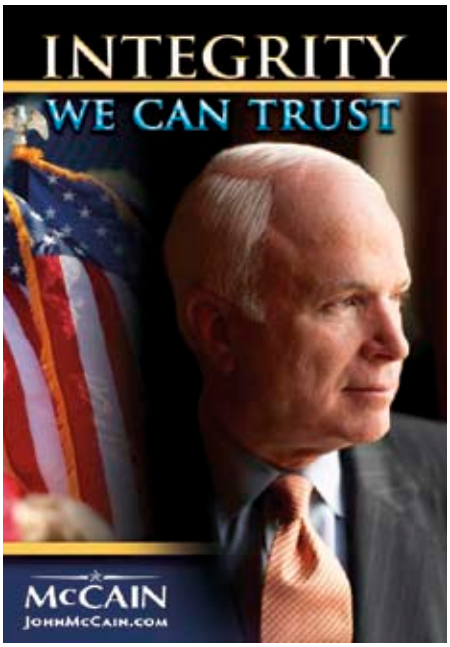
This means that those early impressions probed in Todorov's studies probably influence the way we think about candidates later on—even when we consider our thought processes to be quite rational. According to Todorov, initial impressions of a candidate's face can even color how we perceive that candidate's performance down the line.

But while we can't escape our automatic reactions, there may be ways of moving beyond them. Given enough accurate information, says Todorov, "people will change their minds." In one of the Princeton studies, for instance, subjects made rapid character judgments based on facial appearance, then were given additional information in subsequent phases of the experiment. When participants were told that someone they had initially found trustworthy had robbed someone else, they had no problem changing their minds.

Of course, in the real world, we don't often get such unambiguous information. But these results suggest that we're not entirely locked into our first impressions.



Obama Campaign for President



McCain Campaign for President

"A candidate's face likely affects a small proportion of voters—and these are ultimately the people who decide most of the close elections."

The researchers agree that while snap judgments might bias our evaluations, they don't completely dictate our ultimate decisions. In order to gain more conscious control, "you get people to focus their attention on what's important to them," says Lodge.

How can we focus on what's truly important when automatic reactions appear so hardwired?

Maguire suggests that one way to circumvent the power of first impressions is to think about the issues first and the candidate second. Many Americans learn about relevant social issues from the candidates themselves, he says, and are thus vulnerable to the emotional and visual appeals—or faces—associated with the information's delivery. "If candidates define the issue for you, chances are you'll agree with them," he says. "So a smart way to get around that is to know your issues first, come up with some questions, and go see what the candidates have to say."

Republican strategist Nino Saviano says it's possible to temper emotional impulses through rational processes. "Interaction is key," he says. "When candidates engage voters, they move past initial superficial considerations and voters look deeper into a candidate's other qualities."

Todorov agrees that with deliberate interaction and reflection, we can reign in at least some of our early emotional biases. "When people have opportunities to interact with the person they are judging, it is possible to overcome initial faulty impressions," he says. "It's most problematic in contexts in which people don't have such opportunities." The researchers and strategists agree that in the case of democratic elections, it's often up to the voters themselves to seek out those kinds of opportunities.

Decision 2008

Political strategist Jake Maguire says the research on snap judgments resonates with his experience in the field. "There's no doubt that a candidate's appearance is often a deciding factor in how people come to think of him," he says. And according to Maguire, both the Obama and McCain camps are keenly aware of this issue.

"John McCain has tried to undermine the public trust of Barack Obama by playing on the same concerns members of the public may have when they *look* at Obama," he says. (Indeed, much research suggests that people have automatic, unconscious biases against those of a different race, which could potentially hurt Obama even among voters who wouldn't explicitly consider race a factor in their vote; for more on this subject, see *Greater Good*'s Summer 2008 issue on prejudice.) Similarly, when Obama suggests that McCain has been inside Washington politics for too long, he's playing on the initial impression some voters get from looking at McCain—that he's too old.

Of course, we can't say for sure how the candidates' faces have affected the course of this election. But the importance of gut reactions and trust is clear. "When you look at polls, it's never, 'Who has a better plan on the economy?'" says Maguire. "The word is 'trust.' The question is always: 'Who do you trust more to manage the economy? Who do you trust more to effectively prosecute the war in Iraq? Who do you trust more on health care?'"

So when Americans head to the polls in November, will that trust be rooted in first impressions, or will it instead be tied to something of more substance? Todorov says he doubts that facial appearance affects citizens who identify strongly with a given political party. But, he says, the powerful influence of a candidate's face "likely affects a small proportion of voters who are the fairly uninformed voters, the swing voters, the undecided voters—and these are ultimately the people who decide most close elections."

Economist Daniel Benjamin stresses that first impressions may not, in fact, be a problem at all. It's entirely possible, he says, that people's first impressions pick up on qualities that are important in a leader. "We don't know if it's something we want to overcome," he says. "We don't know if it's good or bad."

So how should voters make sense of this research as they prepare for this or future election days?

"What this line of research ultimately comes down to is that these emotional appeals are very powerful," Milton Lodge says, "but it's not that you can't override them."

Maguire agrees. As one way to temper emotional influences, he recommends reading the news instead of watching it. "We underestimate how much the way a candidate says something affects the way we hear it," he says, "but it's really remarkable."

Ultimately, Maguire suggests, it takes real commitment on the part of the voter to make an informed decision. "It's really about time. It takes more time to read than to watch TV. It takes more time to think about something," he says. "But the truth is that if you want to make a rational decision, you have to come to that yourself. You can't let a campaign give it to you."

Anna J. Abramson is a freelance writer and a former *Greater Good* editorial assistant.

Resources for building trust in America

Research and education

The Trust and Trustworthiness Project, based at Harvard University, is exploring how young people think about issues of trust in a media-drenched world, and how that might compare to earlier times or earlier generations, where findings exist. **www.goodworkproject.org**, 617-495-4342

The Saguaro Seminar is an ongoing initiative by Robert Putnam at Harvard University that focuses on expanding what we know about our levels of trust and community engagement and on developing strategies and efforts to increase this engagement. **www.hks.harvard.edu/saguaro**, 617-495-1148

Corporate watchdogs

Commercial Alert works to keep commercial culture within its proper sphere, and to prevent it from exploiting children and subverting the higher values of family, community, environmental integrity, and democracy. **www.commercialalert.org**, 202-387-8030

The Consumer Federation of America advances the interest of consumers through research, education, and advocacy. **www.consumerfed.org**, 202-387-6121

Corporate Accountability International engages in advocacy, grassroots organizing, research, and education to put an end to irresponsible corporate behavior around the world. **www.stopcorporateabuse.org/cms**, 800-688-8797

CorpWatch investigates and exposes corporate violations of human rights, environmental crimes, fraud, and corruption around the world. **www.corpwatch.org**, 510-271-8080

United for a Fair Economy raises awareness that concentrated wealth and power undermine the economy, corrupt democracy, deepen the racial divide, and tear communities apart. **www.faireconomy.org**, 617-423-2148

Government watchdogs

Common Cause is a nonpartisan citizens' lobbying organization promoting open, honest, and accountable government. **www.commoncause.org**, 202-833-1200

The Freedom of Information Center serves the general public and the media on questions about access to government documents and information. **http://nfoic.org/foi-center**, 573-882-5736

The Center for Responsive Politics is a nonpartisan research group that tracks money in politics and the effect of money on elections and public policy. **www.opensecrets.org**, 202-857-0044

The Project on Government Oversight investigates and exposes corruption and other misconduct to achieve a more honest, open, and accountable federal government. **www.pogo.org**, 202-347-1122

Media watchdogs

The Annenberg Political Fact Check, based at the University of Pennsylvania, monitors the factual accuracy of what is said by major U.S. political players in the form of TV ads, debates, speeches, interviews, and news releases. **www.factcheck.org**, 202-879-6700

Fairness and Accuracy in Reporting works to invigorate the First Amendment by advocating for greater diversity in the press and by scrutinizing media practices that marginalize public interest, minority, and dissenting viewpoints. **www.fair.org**, 212-633-6700

The Freedom Forum is a nonpartisan, international foundation dedicated to free press, free speech, and free spirit for all people. **www.freedomforum.org**, 202-292-6100

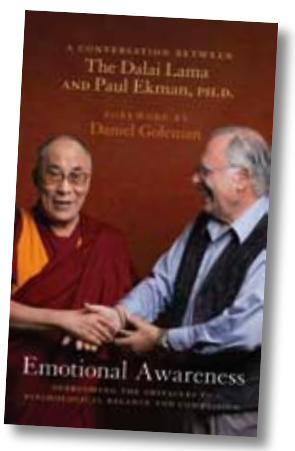
Free Press is a national nonpartisan organization working to increase informed public participation in crucial media policy debates, and to generate policies that will produce a more competitive and public interest-oriented media system with a strong nonprofit and noncommercial sector. **www.freepress.net**, 202-265-1490

The Pew Research Center is a nonpartisan "fact tank" that provides information on the issues, attitudes, and trends shaping America and the world. **http://pewresearch.org**, 202-419-4300

Project Censored is a media research group out of Sonoma State University which compiles an annual list of 25 news stories of social significance that have been overlooked, under-reported, or self-censored by the country's major national news media. **www.projectcensored.org**, 707-664-2500

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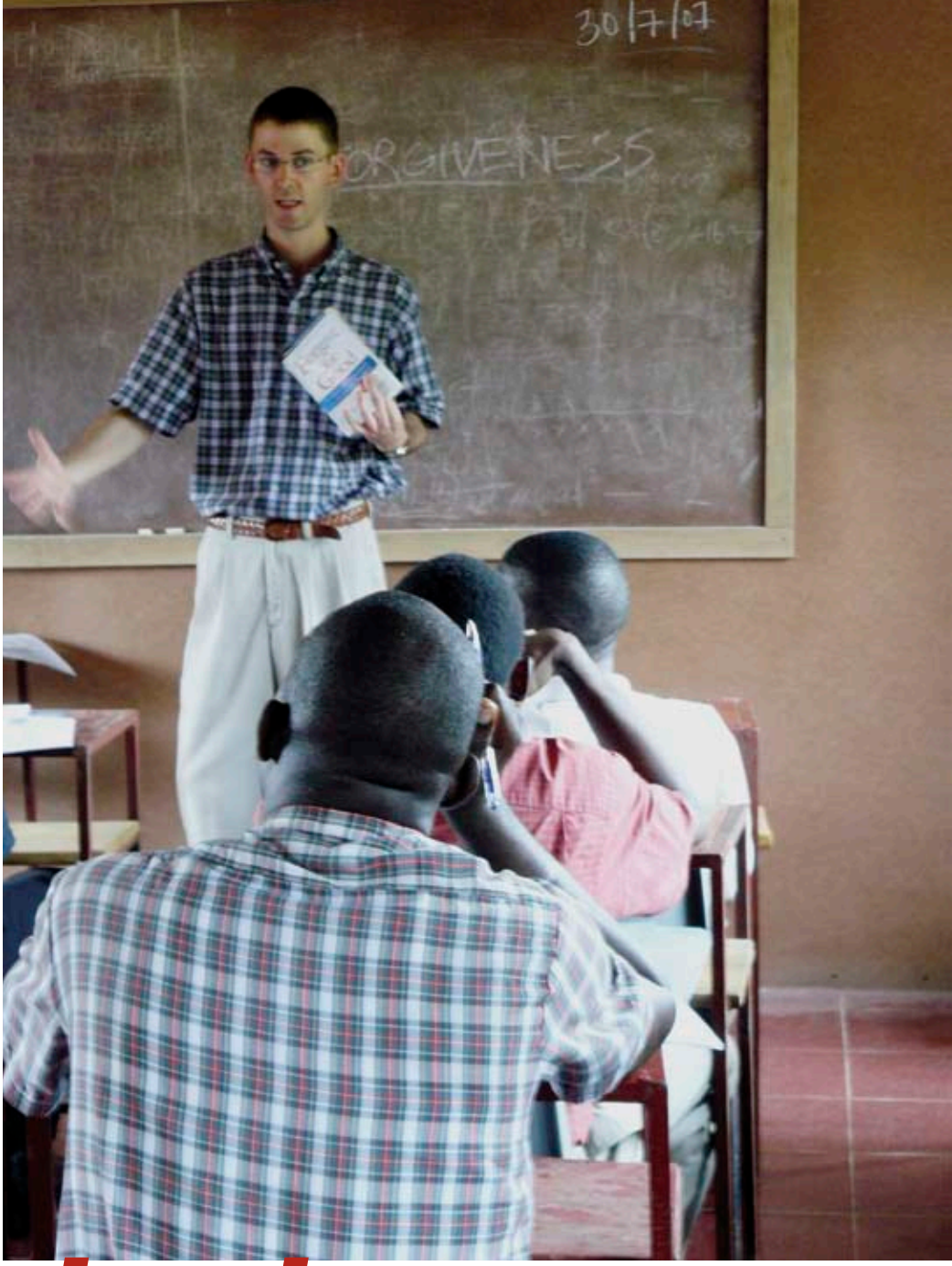
An evening with Paul Ekman, legendary psychologist and *Greater Good* editorial board member, on his new book with the Dalai Lama



When: Wednesday, October 22, 6-7:30pm

Where: North Gate Library, UC Berkeley Graduate School of Journalism

Video of this event will be available afterwards at www.greatergoodmag.org.



While leading forgiveness trainings in Sierra Leone, psychologist Loren Toussaint (standing) says he worked with "the most serious and engaged students I've ever taught."

The Greatest Test

Forgiveness improves health and strengthens relationships. But can it help heal the scars of civil war?

BY EMILIE RAGUSO

All Sierra Leone photos by Alyssa Cheadle

LAST SUMMER, A PROFESSOR AND TWO students from a small Iowa college jammed 200 teddy bears into a duffle bag and flew to Sierra Leone. Armed only with books, laptops, cameras, and the bears—which were gifts for Sierra Leonean children—they were on an ambitious mission: to try to teach forgiveness skills in one of the most war-torn places on Earth.

It was an unlikely project for the group's leader, Loren Toussaint. He had never left North America before.

"I'm kind of your classic Iowa farm boy," says Toussaint, a psychology professor at Luther College, a liberal arts school in northeastern Iowa. "I am not what you would think of as an Indiana Jones academic."

While he may not be an expert traveler, Toussaint is an expert on the psychology of forgiveness, which was the reason for the trip. For years, he has studied the relationship between forgiveness and health, finding that forgiveness generally promotes psychological well-being. His work has added to a growing body of research linking forgiveness to improved mental and physical health and stronger social relationships.

With his trip to Sierra Leone, Toussaint wanted to apply forgiveness research in ways rarely attempted. Accompanied by two Luther students—one American and one Sierra Leonean—he planned to spend two weeks at a school in Freetown, the country's capital, teaching forgiveness skills to two dozen teachers and their students.

Sierra Leone's civil war ended in 2002, leaving tens of thousands dead and displacing two million more, one-third of its population. During the war, rebel raids destroyed families and towns. Civilians became victims of abduction, amputation, and slaughter. Homes were burned with their inhabitants inside.

Poverty, unemployment, and corruption continue to plague Sierra Leone. The United Nations ranks it the world's least developed nation.

Toussaint found the idea of working in Sierra Leone compelling, he says, because much of the country's population has struggled to overcome severe psychological trauma. Other African nations torn by violence, such as South Africa and Rwanda, have initiated nationwide efforts to reconcile their divided populations and facilitate some degree of forgiveness for past crimes. Though starting on a smaller scale, Toussaint's program also aimed to promote forgiveness as a way to improve psychological health and help people let go of some of the anger and resentment that had festered in their country for years.

Scientific programs like Toussaint's have proven effective in dozens of studies, helping people forgive parents who neglected them, lovers who betrayed them, and even strangers who murdered their children. But it was unclear whether such a program could work in a country just a few years removed from civil war. Toussaint says he felt that if he could find positive results in Sierra Leone, he could find them anywhere.

"If you can take these ideas to the very extreme and show that they work with individuals in the worst state of hurt, you would expect them to be even more effective as you get back into the normal realm of hurt and transgression," he says. "This trip would put these forgiveness techniques to what I considered to be their greatest test."

Training the trainers

Toussaint's project got its start in 2006 when he heard, via a colleague, from Nancy Peddle, an American who runs the LemonAid Fund, a nonprofit organization in Freetown that sponsors schools and orphanages. Peddle had read an article Toussaint co-authored about the relationship between forgiveness, gratitude, and well-being. As they began exchanging emails, she suggested that Toussaint's work might play a role in Sierra Leone's healing.

"So many people are still struggling with the aftermath of the war and the effects of trauma," says Peddle. "I thought that this work was a way forward."

Peddle suggested that Toussaint try to teach forgiveness skills at a LemonAid-sponsored school in Freetown. By testing the program on a small scale, she thought Toussaint might create a model that could be applied throughout the country, contributing to efforts to make the next generation of Sierra Leoneans less likely to turn to violence.

Toussaint approached Fred Luskin, a psychologist who led several successful forgiveness studies as the director of the Stanford Forgiveness Projects at Stanford University. Luskin helped the team adapt his teaching model, a nine-step process of forgiveness that he has taught for many years. Luskin's wife, a second-grade teacher, helped develop a children's curriculum based on the program, which the team would share with students at the school.

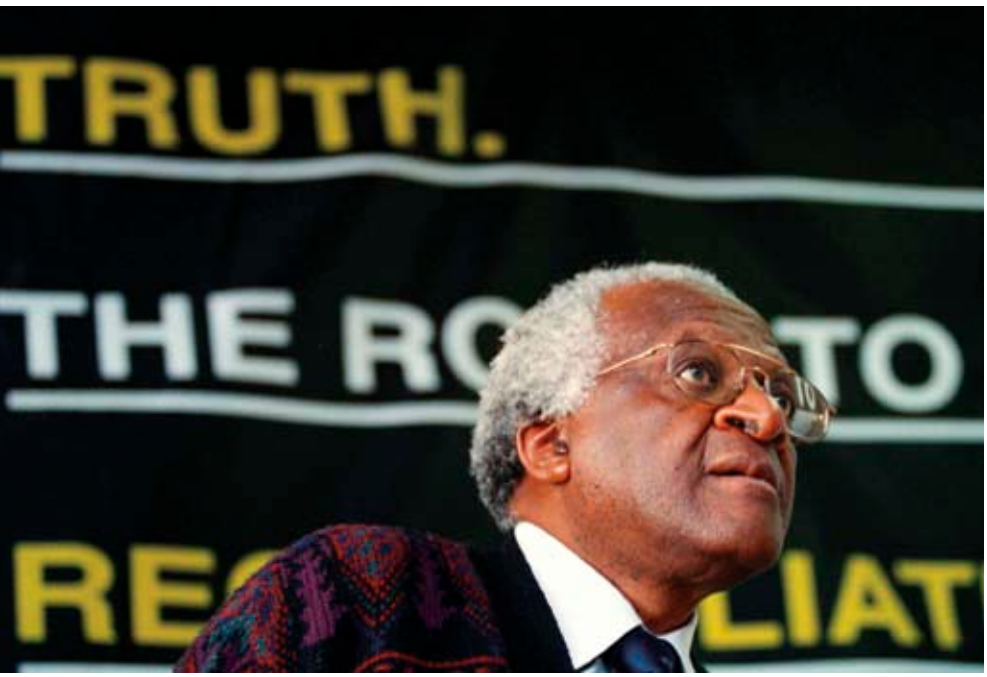
Toussaint and the Luther students, Alyssa Cheadle and Anthony Sellu, read Luskin's book and took his online training course to prepare to teach forgiveness skills in Freetown.

Based on his research, Luskin was confident his training could benefit people in Sierra Leone. In two studies, Luskin had worked with Catholics and Protestants from Northern Ireland who lost family members to that region's political violence. After completing Luskin's program, participants

"After the forgiveness training, I have now developed a way to be at peace with myself whenever I think of my sister's death," wrote one teacher in Sierra Leone.



AP Photo



Reuters

Many African leaders have promoted forgiveness and reconciliation in post-conflict situations. These efforts include (from top) Rwanda's "Gacaca" community courts, established in the wake of the 1994 genocide that killed roughly 800,000 of the minority Tutsi group, and South Africa's post-apartheid Truth and Reconciliation Commission, chaired by Nobel laureate Archbishop Desmond Tutu.

reported feeling healthier, more optimistic, less depressed, and less hurt by their loss.

Though these results were encouraging, Luskin was aware of the challenges Toussaint's group would face.

"Civil war is horrifying and people suffer for a very long time," he says. "It's hard to work with, because both sides have convinced themselves that the other side is their enemy. That makes it really difficult for people to change."

The politics of forgiveness

Many African leaders have promoted forgiveness and reconciliation in post-conflict situations. In addition to the famed example of the South African Truth and Reconciliation Commission, which is widely credited with unearthing human rights abuses and helping the country heal after the end of apartheid, Rwanda struggled to embrace forgiveness after the 1994 genocide that killed roughly 800,000 of the minority Tutsi group. The Rwandan government emphasized justice and reconciliation through "Gacaca" community courts, where killers confessed and apologized to their victims' families.

Archbishop Desmond Tutu, the 1984 Nobel Peace Prize recipient and chairman of South Africa's Truth and Reconciliation Commission, has argued that forgiveness is the path to "true enduring peace." "True reconciliation is based on forgiveness," he writes in his 2004 book, *God Has a Dream*. "Only forgiveness enables us to restore trust and compassion to our relationships. If peace is our goal, there can be no future without forgiveness."

Advocates like Tutu have seen forgiveness as a spiritual and political necessity. But before Toussaint started his project, only a handful of studies, including Luskin's, had tried to scientifically measure the effects of forgiveness training in post-conflict situations.

In one instance, University of Massachusetts, Amherst, psychologist Ervin Staub evaluated a forgiveness training project he first helped bring to Rwanda in the late 1990s. According to a 2005 article Staub published in the *Journal of Social and Clinical Psychology*, his program was associated with reduced trauma and more positive attitudes between Hutus and Tutsis.

Toussaint's project faced some special challenges. Sierra Leone is plagued not only by lingering resentments and hostilities but with severely underdeveloped infrastructure, making it hard to run any program, let alone one with such ambitious goals.

When the group landed at the Freetown airport, no one was there to meet them. Peddle had left the country due to concerns about violence in Sierra Leone's upcoming elections. Their local contact thought they were arriving the next day. The group eventually took a ferry into Freetown, sharing a semi-private area with several Texas oil men, the only other Westerners around.

"We were just thrown into it from the beginning," says Cheadle, 22, a recent Luther graduate who studied psychology and religion, and worked with Toussaint, Luskin, and Sellu on the grant that funded the bulk of the trip. The team arrived during the region's rainy season. Torrential rains and traffic often turned a mile-and-a-half bus trip into a two-hour journey. To complicate matters further, the team learned they'd have no Internet access, no plumbing, and intermittent electricity with which to power their laptops. Toussaint says the humidity, 90-degree weather, and construc-

tion to complete the school made it hard to focus on training.

Despite these obstacles, Cheadle remembers the participants' enthusiasm from the very beginning. "I kind of expected them to be skeptical," she says. "But what struck me was how willing they were to learn and how interested they were in what we had to say."

The trio planned to work with one group of teachers the first week; a second group wouldn't get trained until the next week. The researchers planned to measure the training's effectiveness by comparing the two groups. As they went through the training, the teachers would share what they learned with their students, most of whom were between seven and 13 years old. Sellu, who lived in Sierra Leone until he was 20, served as a translator.

Before starting the training, Toussaint explained to the teachers that forgiveness, according to Luskin's program, does not mean condoning or justifying horrific acts; it's not antithetical to justice. It involves coming to peace with wrongs one has suffered, moving on, and learning to enjoy life.

Each day of the training, teachers read sections of Luskin's book and worked through his methods. They filled out workbooks to practice the skills Luskin describes. They would imagine ways they'd been hurt and create statements about how their future response to that hurt could be different. Or they would imagine a time they had been offended, then work on deep breathing or other stress reduction techniques to let go of the frustration.

Many participants tried to confront traumatic memories.

"Let's say during the war I was a couple years younger, and my parents were killed in front of me, probably by a kid who lives next door or down the road," says Sellu, 22, a physics and math major at Luther. "That's the kind of thing some of the youth grew up with."

In their forgiveness exercises, some children wrote about wanting God to punish rebels who burned down their home. Others were angry about relatives killed in the war. One girl wrote about forgiving a boy who had thrown a stone at her.

Toussaint's team encouraged teachers and students to start by practicing forgiveness toward lesser offenses. Rather than trying to forgive a neighbor for turning in your father as a rebel collaborator, it might be easier, the researchers suggested, to try to forgive the cousin who stole and sold your camera.

"I think it was overwhelming for them to think about forgiving people who had wronged them during the civil war," says Cheadle. "We encouraged them to start small. To go in there and say, 'You need to forgive that a friend of yours was killed or your house was burned'—that's too much."

Some teachers cited anger at relatives for mistreating them, frustration at co-workers for accusing them of misbehavior, or pain over a former spouse who had left them. One woman said she was angry at a family member who got distracted while babysitting the woman's child and let the boy tumble from a window three stories high.



To work with the youngest students, Toussaint's group used activities that translated Luskin's program into language children could understand. For instance, Luskin says one way to let go of a grudge is to "change the channel" and focus on positive aspects of one's life. To explain this, the team had children take Polaroid photographs of things they liked, then practice imagining that picture in their head.

"Both the teachers and the students were the most serious and engaged students I've ever taught," says Toussaint. "There was an incredible fit between their needs and the topic we were bringing."

Getting results

Less than a week into the training, thieves used bolt cutters to break open the steel door of the school's office. They stole one laptop computer, school supplies, and gifts the researchers had brought. They also stole the teachers' salaries for two semesters.

"They took everything they had," says Sellu. "The teachers were supposed to be paid the next day."

In the next day's training, the researchers discussed the theft with the teachers.

"They wanted to know, 'Do we forgive these robbers? What do we do?'" says Cheadle. "Loren told them, 'You have to forgive at the right time.' They couldn't be expected to forgive what had just happened the night before."

The Luther group believes their presence attracted thieves to the school. They left for the United States the next day, concerned for their safety and for the safety of those at the school. They left behind journals in which the teachers could record their reflections about the training, along with surveys to measure the teachers' mental health. The surveys were completed days

> "If peace is our goal, there can be no future without forgiveness."

after Toussaint's group left, about one week after the study began. Peddle carried the surveys back to the U.S. several months later to avoid losing the data in Sierra Leone's notoriously unreliable postal system. Toussaint compared the results against identical surveys the teachers had completed before the training.

Despite the training's challenging conditions and their early departure, the group discovered their work had indeed made a strong impression. Compared to teachers who didn't receive the training and to the initial survey results from before the training, those who learned forgiveness skills reported feeling less depressed, more grateful, more satisfied with life, and less stressed. (Because of language barriers and the fact that many of them were so young, the children in the study could not complete surveys as detailed as the adults'. Still, the team collected baseline information about the children's mental and physical health, and about their feelings toward forgiveness, with an eye toward future work.)



Anthony Sellu (bottom right), a member of Toussaint's research team, lived in Sierra Leone until he was 20 years old.

Thirteen teachers completed the training and eleven, the comparison group, did not, but Toussaint says the differences between the two groups were so great that the results were statistically significant. In others words, despite the small number of people, the results were strong enough for Toussaint to conclude that the training worked. And he learned an important lesson: that it's possible to teach forgiveness with Luskin's curriculum even in such distressed conditions, and even if Luskin himself wasn't teaching it.

Questionnaires the Sierra Leonean teachers filled out after the training offer insight into what they may have gained from the experience. Before the training, many described events from years earlier that continued to haunt and disturb them, often expressing violent feelings. After the training, though some remained unable to forgive, others revealed that they were starting to think differently.

"It was seven years ago during the civil war where my older sister was killed," one teacher writes. "One good thing is that, after the forgiveness, healing, happiness, and health survey training, I have now developed a way to be at peace with myself whenever I think of her death."

Another teacher describes being angry because his younger brother stole his salary, then lied about it.

"That made me so hurt that I nearly break [sic] his head," he writes. "Presently I am no longer disturb [sic] over the issue because I have decided to forgive him for what he did to me."

First steps

Sellu says he initially had his doubts about the project's goals. While he was in Freetown, many teachers expressed frustration to him about the training. They wondered how Luskin's ideas could help them, especially with elections on the horizon.

"Some kept saying, 'We'll be doing this training, but we don't even know the future of the country,'" he says. "Other people said, 'How is this going to help at this point when we've just come out of war and people don't have jobs?'"

Over the course of the trip, he says he came to believe the curriculum could help Sierra Leoneans. But more time and money must be invested, he says.

Luskin and Toussaint say that's their plan. They want to raise money to bring a group of Sierra Leonean teachers to Stanford to participate in forgiveness trainings in a more controlled environment. Those teachers would return to their country to share what they learned. (This is how Luskin ran his Northern Ireland studies.) Over time, Toussaint imagines the curriculum spreading across many countries that are struggling to overcome violent pasts.

Toussaint has no immediate plans to return to Sierra Leone. But Peddle has started to offer the forgiveness training to former war combatants in the country; she has also offered a one-year "refresher course" to teachers and others at the school in Freetown.

Toussaint says he's grateful to have met the teachers and students there, and has no regrets about going. Neither do Sellu or Cheadle.

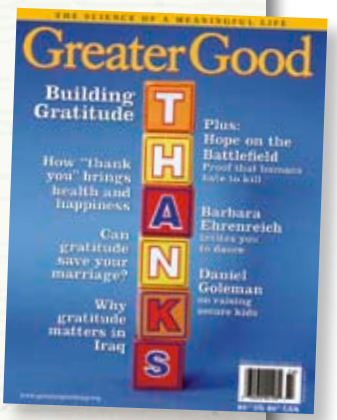
"It's easier to do this kind of thing in the U.S. or in a country that is maybe safer, and there's obviously a need in those countries," says Cheadle. "But the needs in a place like Sierra Leone get met less often. Maybe it wasn't the best country to choose, strategically or practically. But it was a good country to visit to be reminded of the importance of forgiveness."

Emilie Raguso, M.J., is a crime reporter for the *Modesto Bee* newspaper. Her last article for *Greater Good* covered efforts to apply mindfulness meditation to childbirth and parenting.

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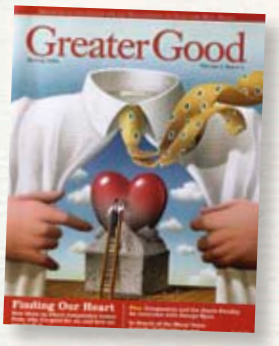
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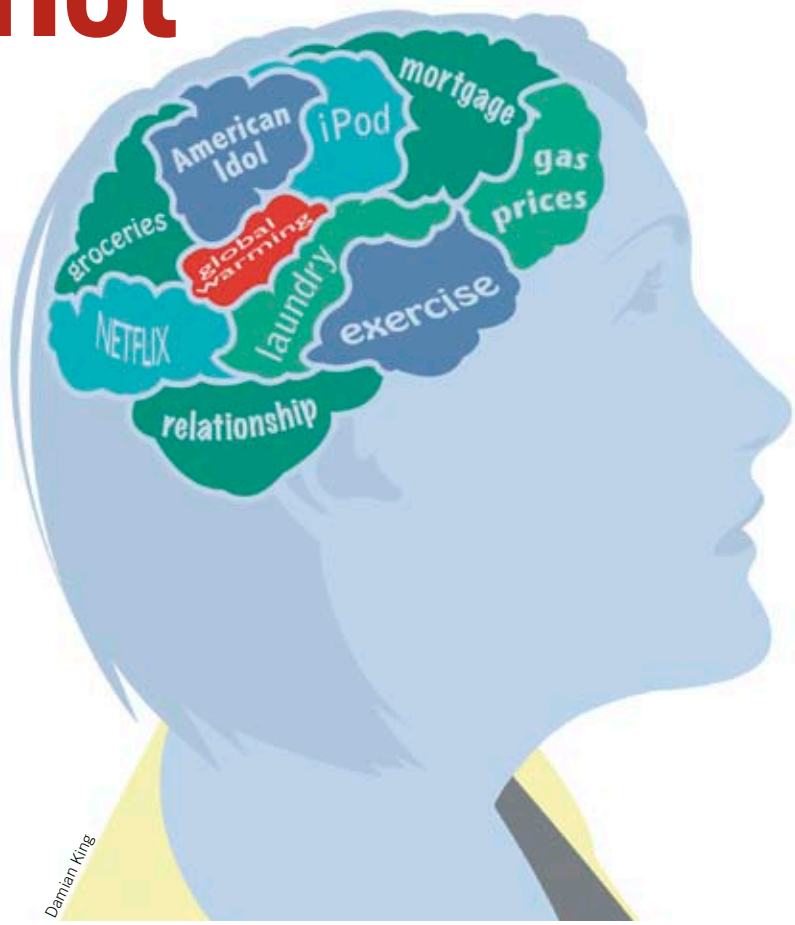
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The Hot Spot



Damian King

Climate scientists wonder why people don't do more about global warming. Social scientists have some troubling answers.

BY LISA BENNETT

THREE YEARS AGO, I BECAME OBSESSED WITH global warming. Practically overnight, my worries about its potential effects outstripped my worries about so many other national and global issues, even personal ones.

Indeed, as the mother of two young boys, I began to think it a bit crazy that I attended to every bump and scrape on my children's little bodies and budding egos, but largely ignored the threat likely to put sizeable areas of the world, including parts of the coastal city where we live, underwater within their lifetime.

That year, 2005, marked a turning point for many people. After decades of observation, speculation, and analysis, the world's climate scientists had reached a consensus, and increasingly the general public was accepting it. As *USA Today* reported, "The Debate is Over: Globe is Warming."

The next step, scientists advised, was action. We needed to take significant and urgent steps to cut our dependence on fossil fuels by 25 percent or more, something NASA's top climate scientist, James Hansen, said we had only a decade to do if we were to avoid the great global warming tipping point—that level at which increased temperatures would unleash unprecedented global disasters.

So how are we doing?

Surely, some things have changed. Sales of the Toyota Prius and other hybrids have skyrocketed. Many of us have converted to the new energy-saving compact fluorescent light bulbs. A flood of books are hitting the market offering tips about how to save the Earth. And there is a frenzy of advertising about everything from "eco-friendly" houses to "green"

hair salons, showing just how widespread Americans' desire is to do the right thing for the environment.

Yet none of this adds up to the significant and urgent action scientists have called for. The question is why: Why don't more of us respond more seriously to the most serious threat to the planet in human history?

"Many climate scientists find the response to global warming completely baffling," says Elke Weber, a Columbia University psychologist and the chair of the Global Roundtable on Climate Change's Public Attitudes/Ethical Issues Working Group. According to Weber, climate scientists just can't understand why government and the public have been so slow to act on the extraordinary information these scientists have provided.

But now a growing number of social scientists are offering their expertise in behavioral decision making, risk analysis, and evolutionary influences on human behavior to explain our limited responses to global warming. Among the most significant factors they point to: The way we're psychologically wired and socially conditioned to respond to crises makes us ill-suited to react to the abstract and seemingly remote threat posed by global warming. Their insights are also leading to some intriguing recommendations about how to get people to take action—including the potentially dangerous prospect of playing on people's fears.

Our misleading emotions

There are a significant number of researchers now devoted to studying how people decide that something is truly bad for them. They are called "risk-analysis scholars," and they believe there are, in general, two ways we may assess a risk such as global warming. One is through our analytic abilities, by which we examine the scientific evidence and make logical decisions about how to respond. This is the process that was used by climate scientists to reach the strong and clear conclusion that the risks of global warming are momentous and require immediate and significant action.

But most of us do not rely on our analytic abilities to evaluate the risk of global warming—or any risk, for that matter. Instead, we rely on the second and more common way of perceiving risk: our emotions.

"For most of us, most of the time, risk is not a statistic. Risk is a feeling," says Weber. We are swayed by our feelings, and those feelings—while an essential part of the decision-making process—can be misleading guides, depending on the type of risk involved.

For example, in a recent paper on how emotion shapes risk perception, Weber cites the growing number of parents who choose to forego having their children vaccinated against diphtheria, tetanus, and pertussis. To most physicians, this is a highly irrational decision, since vaccinations help prevent serious illnesses and pose very slight risks. So why do parents make such decisions? Because when they learn that roughly one child out of 1,000 will suffer from high fever and one out of 14,000 will suffer seizures as a result of vaccinations, their emotions lead them to imagine that *their* child will be the one to suffer.

"If I feel scared," says Weber, "that overshadows any amount of pallid statistical information."

And perhaps most importantly, emotions, more than anything else, are what motivate us to act. As decades of behavioral decision research has shown, most people have to *feel* a risk before they do something about it.

In this way, our limited response to global warming is similar to our limited response to mass murder or genocide, according to Paul Slovic, a professor of psychology at the University of Oregon and the president of Decision Research, a nonprofit that studies human judgment, decision making, and risk.

In a series of research papers, Slovic has explored why reports of genocide so often fail to stir us to action. These reports, he writes, usually stress the thousands or even millions of people who have been killed. In doing so, they speak to our analytic abilities but not our feelings. Slovic has found that people are much more likely to donate money to a cause after reading the story of a single victim than after reading a statistic citing a million victims.

Like genocide, the long-term consequences of global warming are so enormous we can't wrap our heads around them. Scientists predict in 40 years global warming will displace 20 million people from Beijing, 40 million from Shanghai and surrounding areas, and 60 million from Calcutta and Bangladesh. These statistics are daunting, but they're abstract; they don't inspire us to feel for the one individual whose life will be put at risk. As a result, we fail to take appropriate action.

And as with others, so with ourselves: It is emotions, such as fear or worry, that motivate us to protect ourselves from risk. With global warming, this presents an even more challenging situation because, says Weber, our emotions are shaped by two forms of past experience: either direct personal experience or evolutionary experience that still guides human behavior.

We feel the hairs stand up on the back of our necks if someone in a dark alley appears dangerous. This happens because, from an evolutionary perspective, deep in our psyches we know what it feels like to have another human being physically threaten us. There's also the chance that we've been threatened or assaulted personally.

But we have no innate experience of global warming that tells us, from personal or evolutionary experience, that when we burn too many fossil fuels, it causes the build-up of greenhouse gases that trap warm air within the Earth's atmosphere, which, in turn, melts ice caps and glaciers, raises ocean levels, and causes hurricanes to intensify, floods to worsen, droughts to increase, lakes and water supplies to disappear, and, as in any such dire and threatening circumstance, famine and warfare to spread.

Emotions, more than anything else, are what motivate us to act.

"Global warming doesn't make evolutionary sense to us."

As dramatic as these scenarios are, we can't feel them because we haven't experienced them (yet). Human-driven climate change is simply unprecedented.

"Global warming doesn't make evolutionary sense to us," says Weber. "Our minds haven't adjusted to the much more complex technological risks that are removed in space and time."

Timing is everything

Our lack of past experience with global warming is also exacerbated by the fact that global warming is not a clear and present danger but, rather, something that is projected to reveal its most dramatic consequences decades from now.

"It's a very well established fact about human behavior," says Slovic, "that we discount future negative outcomes a great deal, especially if it means having to postpone some immediate positive benefit, such as the convenience of driving our car." He likens our attitudes toward the future risks of global warming to how teenagers discount the risk of smoking, despite abundant evidence of its risks.

"Young people tend not to be quite clear about whether there will be consequences from their smoking, what they would be, and what it would be like for them," he says. "The future risk is not imaginable, and that tends to make people more complacent."

The fact that global warming appears to represent a hazard of nature also leads people to underestimate the risk. "People don't respect nature and what it can do," says Slovic. "They feel nature is benign, even though it really isn't."

Case-in-point: He contrasts the response to Hurricane Katrina with the response to September 11. "After Katrina, people started to pay more attention to strengthening the levies even though the information was available in advance. There was a short period of time when there was a heightened response, then it dampened."

The response to September 11, in contrast, has been far more significant and long-lasting, even though, he says, "from a physical damage standpoint, 9-11 was relatively smaller." The difference was that Katrina, which many scientists believe was fueled by human-driven global warming, seemed like an act of nature, and that failed to trigger our millennia-old fears of having our homes and lives invaded by a stranger—fears evoked by September 11.

Reality vs. worldview

A third obstacle that limits people's response to global warming—and even their willingness to believe in it—is also one of the most intractable. In a series of recent studies, a group of scholars from Yale and other universities have been studying how cultural values shape our perceptions of risk. Based on the premise that Americans are culturally polarized on a range of societal risks, from global warming to gun control, Paul Slovic, Yale Law School professor Dan Kahan, and others analyzed the results of surveys and experiments that matched the risk perceptions of some 5,000 Americans to the worldviews of those Americans. Their finding: People may simply reject evidence that clashes with their worldview.

"To a certain extent our attitude toward risk and behaviors are conditioned not just by the raw facts of the matter, but by the orientation that we have to the world," says Slovic.

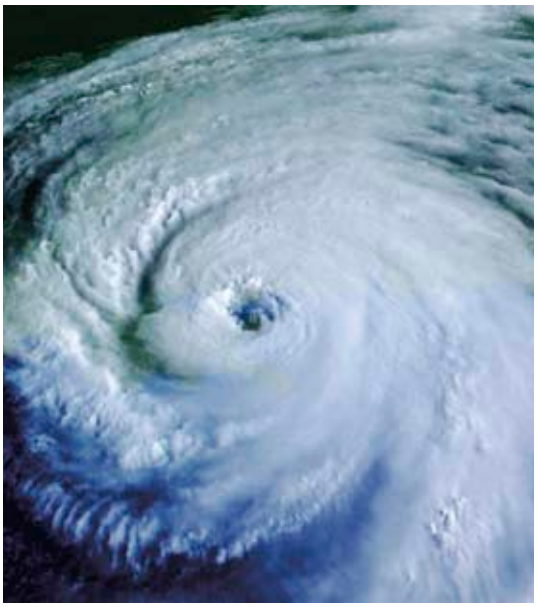
In the case of global warming, researchers found two general worldviews that seemed to have the most significant influence on perception and action. One group consists of egalitarians, or people who prefer a society where wealth, power, and opportunity are broadly distributed. Researchers called the other group the hierarchists, those who prefer a society that is linear in its structure, with leaders on top and followers below.

"What we've seen through this research is that egalitarians are generally more concerned about environmental risks over a range of hazards, including global warming. Hierarchists tend to be less concerned," says Slovic. In fact, he says, when it comes to perceptions of risk, one's worldview is vastly more influential than other individual characteristics, such as race or political ideology.

The researchers also found that when proposed solutions to global warming clash with people's worldviews, those people are more likely to reject evidence of the problem altogether. For example, in one experiment, Kahan and his colleagues gave two groups of people two contrasting newspaper articles about global warming. Both reported the problem in similar terms: temperatures were rising, human behavior was the cause of climate change, and global warming could lead to disastrous environmental and economic consequences if left unaddressed. But the articles then went on to offer different solutions: one called for increased regulation of pollution emissions, while the other called for revitalization of nuclear power.

When people with a hierarchical worldview received the article that called for increased regulation—policies currently associated with a more egalitarian and liberal worldview—they were more likely to reject that global warming was a problem than when they received the article that called for a revitalization of nuclear power.

This research helps explain the attitudes and behaviors of global warming skeptics. Slovic says it also shows how difficult it is to communicate persuasively when people feel their worldview is challenged. "The truly disconcerting thing about this work is that it shows how difficult it is to change people's views and behaviors with factual information," says Slovic. "People spin the information to keep their worldview intact." They do their best to hold onto their worldviews, says Slovic, because so


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Social scientists argue that seemingly natural disasters like Hurricane Katrina (left) don't alarm people as much as man-made threats like the September 11 attacks, which triggered ancient fears of having our homes and lives invaded by a stranger.

much of their personal identity and social networks are tied up in maintaining it.

Fearful futures, hopeful actions

With such significant obstacles to spurring action on global warming, what can social scientists recommend about how to inspire the necessary response?

First, communication about global warming needs to reach people's emotions and trigger fear, and that means emphasizing the dramatic consequences to come. "It is only the potentially catastrophic nature of (rapid) climate change (of the kind graphically depicted in the 2004 film *The Day After Tomorrow*) and the global dimension of adverse effects, which may create hardships for future generations, that have the potential for raising a visceral reaction to the risk," Elke Weber writes in a recent paper on why global warming doesn't scare us yet.

This means making future hardships vivid, imaginable, personalized, and credible, says Slovic. For example, he suggests that people communicating about global warming answer the questions: "How will it change the whole economy and whole quality of life in a particular region? Will the forests die out? Will the summers be so hot and dry that the Earth will be uninhabitable?"

In setting out to evoke fear, however, one must tread judiciously. "If people are being scared without seeing a way out, it makes them dysfunctional and freeze," says Weber. "They will switch channels and watch Britney Spears instead."

And that leads to a second recommendation: People need to be offered a set of actions they can take to combat global warming. "In general, a good guide is: Where does most of our energy get used?" says Susanne C. Moser, co-editor of the 2007 anthology, *Creating a Climate for Change*. The top three categories of energy-consumption for individuals are transportation, home-energy use, and food consumption. Already, plenty of books and websites offer tips on how to reduce energy use in all these areas. (Many are listed in the "Resources for the Greater Good" on page 49.) Reports on global warming need to draw on these resources, so that people feel there is something concrete they can do about it.

Finally, beyond the many small energy-saving solutions people can take, combating global warming will require making people more aware of the large-scale lifestyle changes that will really make a difference. "I don't want to have to make a zillion little decisions," says Baruch Fischoff, a professor at Carnegie Mellon University and the former president of the Society for Risk Analysis. "I'd like to see people working out for me some alternative ways of organizing my life where it will really be a sustainable way to live."

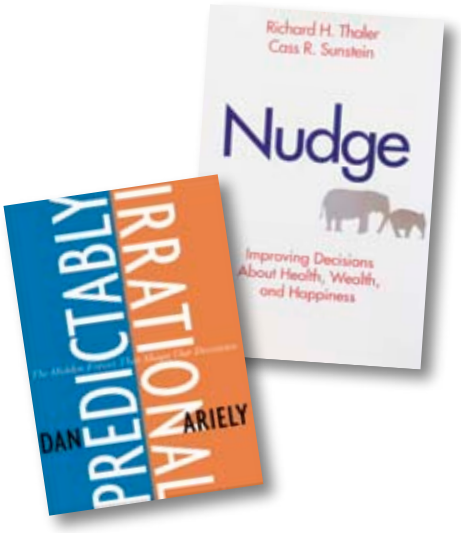
Indeed, figuring out these big lifestyles changes, Fischoff suggests, is the practical work that now lies ahead for climate and social scientists.

As for ordinary Americans like myself, I believe that significant collective action on global warming will come from a very personal place—such as love for our kids, who will, after all, be among those most likely to experience its greatest consequences. But perhaps even more significantly, I'm finding hope in knowing that the drive to protect our children is another universal desire for which most of us are, in fact, hard-wired.

Lisa Bennett is the communications director for the Center for Ecoliteracy, a nonprofit dedicated to education for sustainable living. She is writing a book about parenting in the age of global warming and can be reached at LisaOBennett@gmail.com.



René Magritte, "Le Fils de l'Homme," 1964. Oil on canvas, 116 x 89 cm. Photothèque R. Magritte-ADAGP © ARS, NY



Predictably Irrational: The Hidden Forces That Shape Our Decisions
BY DAN ARIELY
HarperCollins, 2008, 304 pages

Nudge: Improving Decisions About Health, Wealth, and Happiness
BY RICHARD THALER AND CASS SUNSTEIN
Yale University Press, 2008, 304 pages

Head Trips

BY LEIF HASS

A PATIENT SITS IN MY OFFICE. He is 73 years old and suffers from hypertension.

"I have to admit, Doc, I usually only take my blood pressure pills when I feel my pressure is high," he says.

"You know you should take them everyday," I reply.

"I know," he says, and shrugs.

Later that day, I see another patient, a 50-year-old diabetic. "I just can't give up the Pepsi," she says, trying to explain why her blood sugars aren't coming down.

As a physician, much of my work involves helping people make good decisions about their health. This should be a straightforward task. Isn't their health in their self-interest? And yet it can be monumentally challenging. Healthcare providers receive no training into how people make decisions. I've often felt that with some more insight into this process, I might be able to better serve my patients.

I know I'm not alone. Many of us—teachers, parents, police officers, spouses—could benefit from learning more about how the human mind works, if only to help us steer others, and ourselves, toward better choices in life.

Two new books, *Predictably Irrational* by Dan Ariely and *Nudge* by Richard Thaler and Cass Sunstein, provide some help. Both books draw on decades of research into the often baffling world of human decision making in order to argue that we don't act like little calculators, as economist Adam Smith imagined, with each of us intent on maximizing benefit in every situation. Instead, the authors say, we are often completely irrational.

"We are not only irrational, but predictably irrational," writes Ariely. "Our irrationality happens the same way, again and again."

Ariely, a behavioral economist, believes that if we can understand how we are predictably irrational, we can begin to improve our decision making. "We are pawns in a game whose forces we largely fail to comprehend," he writes. Each chapter of his book describes how one of these forces—social norms, emotions, biological drives, and seemingly random numbers—influence our behavior. Even when we recognize these forces, he

argues, we still underestimate their power over us.

For example, in one study, Ariely had young men answer questions about sexual behavior, once while in his lab and again while looking at pornography at home. In the lab, the guys piously insisted on the importance of safe sex. Not so when they were aroused—support for safe sex dropped precipitously. In the biological heat of the moment, argues Ariely, we simply can't expect people to act responsibly, and thus we must learn to plan accordingly.

In another experiment, he asked students to write the last two digits of their social security numbers on a piece of paper and place a dollar sign in front of the number. Then, using that same paper, the students wrote down bids for items in a real auction being conducted in the class. The students with higher social security digits on average bid higher, suggesting that our behavior is subconsciously influenced by completely random numbers. "Our choices are often affected by random initial anchors," writes Ariely. "In many cases we make decisions that may not reflect how we value different items."

He continues: "These forces work on everyone, not only the thoughtless or weak-willed. The resulting mistakes are simply how we go about our lives. They are part of us."

What Ariely stresses is that we know all people have weaknesses, but generally, we don't see ourselves as being as flawed as the people around us—a useful insight when I try to understand my patients. Ariely's research reminds us to be more vigilant, "to force ourselves to think differently to overcome our inherent shortcomings." In some ways, this conclusion is disappointing: It might work to help us avoid paying too much for a product, but it doesn't help us understand specifically how we can summon the willpower to stop eating those potato chips when they are right in front of us.

In other words, Ariely offers insight into the nature of the problem, but not much in the way of solutions. Fortunately, in *Nudge*, Richard Thaler (an economist) and Cass Sunstein (a legal scholar) take the research one step further. By knowing how people think, they argue, we can design environments that nudge people into making good choices, without infringing on their personal liberty or human rights.

Sunstein and Thaler see our brain operating in either one of two modes as we move through life. The Automatic System is fast, reflexive, and associative; it works great for driving, but not so well for taking the SAT. The Reflective System is slow, deductive, and requires work. As a result, we tend to rely on the Automatic System more. One of the main goals of the book, write the authors, "is to show the world might be made easier … if people could rely on their Automatic System more without getting into trouble."

The elementary school cafeteria is a great example they provide of how environmental cues—or "choice architecture," in the authors' words—influence decisions. If french fries are the first thing offered in the cafeteria line, hungry kids will automatically pick them up. Holding out for the carrot sticks further down the line would require a level of reflective thinking that eludes many elementary school students.

Choice architects are just giving people little nudges in the right direction.

Instead of banning the fries, Thaler and Sunstein say it's better to display the food in such a way as to make it easier to choose the carrot sticks. People should be able to choose for themselves, but choice architects (in this case, the cafeteria workers) need to arrange things so that people operating in automatic brain mode make smarter choices—that is, the ones we would make if we were paying full attention, had complete understanding of the pertinent information, and had the self-control to decide rationally. Choice architects aren't controlling people's behavior; instead, they're just giving people little nudges in the right direction.

Who can be a choice architect? Any of us can become one when we do anything to shape another's decision. If you design new forms for employees to fill out or ballots for voters to use, you are a choice architect. The term also describes parents outlining educational options for their child. "There are many parallels between choice architecture and traditional [architecture]," write Sunstein and Thaler. In particular, "there is no such thing as neutral design … everything matters."

Sunstein and Thaler go beyond cafeteria lines to propose choice architecture as an approach to organizing our entire society. They give their approach the grand name of "libertarian paternalism" and see it as a "true third way" between one philosophy that says "anything goes" and another that proposes to ban all the bad stuff. "The libertarian aspect of our strategy lies in the straightforward insistence that, in general, people should be free to do what they like," they write. The paternalistic aspect is that "choice architects should try to influence people's behavior to make their lives longer and healthier."

Thaler and Sunstein suggest many practical applications of their approach. Their best proposal might be that people should have to opt out of retirement plans at work so that inertia won't prevent them from starting to save. They also say people need to be nudged into saving energy because the various costs—from little things like higher bills to big things like global warming—are too far removed in time from the immediate benefit of using the energy.

Unfortunately for me (and my patients), the authors have less to offer with respect to health. For instance, they suggest offering an annual health maintenance deposit of $100, which a patient would get back after going through any tests his or her doctor recommends. This might work for motivated patients, but many of my chronically procrastinating patients aren't there yet, even if it means losing $100.

However, for some patients, a social nudge—that is, the influence of other people's behavior—might work best. For instance, if I could somehow get my diabetic patient's friends and family to rave about Diet Pepsi, she might start preferring it herself. My hypertensive patient needs to move from reflective to automatic thinking when it comes to taking his medication if he is to avoid a stroke. A social nudge could help him, too—perhaps by taking his meds with his wife everyday. As a physician, I can suggest these nudges, but in most cases it's up to my patients to be their own choice architects.

Perhaps I shouldn't expect easy answers to tough problems posed by my most challenging patients. Some drives are too deep to overcome with self-awareness, and for many economically disadvantaged people, there are few structures that might nudge them in healthy directions. To create these structures, health care providers need to work with public health officials and community leaders. But by understanding the research in *Predictably Irrational* and by considering the most practical recommendations in *Nudge,* perhaps we can work together to forge a framework for healthier communities.

Leif Hass, M.D., is a physician practicing in Berkeley, California.

Human: The Science Behind What Makes Us Unique

BY MICHAEL GAZZANIGA

Ecco, 2008, 464 pages



IN *HUMAN*, NOTED cognitive neuroscientist Michael Gazzaniga tackles a big subject: What makes human beings biologically, psychologically, and even spiritually unique among animals?

To answer that question, Gazzaniga's book ranges from the chemical make-up of our brain cells to the evolutionary roots of morality to the latest frontiers in artificial intelligence. It's an ambitious, encyclopedic approach that contains many potential pitfalls, some of which Gazzaniga stumbles into. As a result of its breadth, for example, *Human* is too long by half; the book would have benefited from a more focused, concise argument. Perhaps more critically, it doesn't entirely deliver on the promise of its subtitle. Even Gazzaniga, in the afterword, admits that science isn't yet sure if, or why, humans are unique.

"Maybe those people who see humans as only slightly different from other animals are right," he concludes. "But the ability to wish or imagine that we can be better is notable. No other species aspires to be more than it is. Perhaps we can be." This is mildly inspiring and it's probably true, but it's also disappointingly slight after 400 pages of data followed by 60 pages of endnotes.

Still, I recommend this book to patient lay readers who are interested in learning more about cutting-edge evolutionary psychology and neuroscience research, filtered through Gazzaniga's scientifically grounded optimism. Even if human beings are fundamentally the same as other animals, *Human* reveals us as first among equals when it comes to qualities like hope and compassion. **—Jeremy Adam Smith**

Altruism, Intergroup Apology, Forgiveness, and Reconciliation

BY SAMUEL P. OLINER, ASSISTED BY PIOTR OLAF ZYLICZ

Paragon House, 2008, 328 pages

IN HIS NEW BOOK, HUMBOLDT STATE University sociologist (and *Greater Good* editorial board member) Samuel Oliner argues that apology and forgiveness on a global scale are ideas whose time has come.

Through interviews, surveys, and meditations on the research literature, Oliner and colleague Piotr Zylicz examine the role of apology in post-conflict situations. Their approach blends philosophy with pragmatism: The book addresses deep, abstract questions (e.g., "Does collective guilt exist?"), but also looks at the concrete steps countries like Germany, Japan, and China have taken to address the bitter fallout from political violence.

By pinpointing behaviors that can facilitate or impede the process of reconciliation, Oliner has produced what could almost be considered a workbook for peace. "A harmonious world," the authors write, "is not an impossible dream." **—Meera Lee Sethi**

Spiritual Evolution: A Scientific Defense of Faith

BY GEORGE E. VAILLANT

Broadway Books, 2008, 228 pages

IN *SPIRITUAL EVOLUTION*, PSYCHOANALYST George Vaillant charts the evolutionary trajectory of positive emotions like love, compassion, hope, and forgiveness—all of which he puts under the umbrella of spirituality. Drawing from neuroscience, evolutionary theory, and decades of clinical experience, Vaillant argues that these emotions are both useful and uniquely human.

This ground has been covered before, but Vaillant's passion for his topic is intense, leading him to combine hard science with poetic prose. As a result, *Spiritual Evolution* is beautifully written, but sometimes at the expense of scientific accuracy.

For example, Vaillant repeatedly criticizes Richard Dawkins's "selfish gene" theory in a way that is inconsistent and often misleading. Genes, argues Dawkins, are selfish in their drive to survive and reproduce, but he explicitly rejects applying the idea of the selfish gene to human morality. In the sonorous but vague rhetoric of *Spiritual Evolution*, it's never clear whether Vaillant's criticism of selfish gene theories is simply a moral reaction to the very idea of selfishness in nature, or if he is actually trying to repudiate Dawkins's scientific position. Of course, Dawkins and Vaillant do have one thing in common: Both disdain organized religion, which Vaillant simplistically dismisses as the "bad" half of spirituality.



Ultimately, *Spiritual Evolution* occupies an awkward space between scientific inquiry and poetic meditation. This makes the book frustrating at some points, but inspiring and insightful at others. **—Azim Shariff**

Emotional Awareness

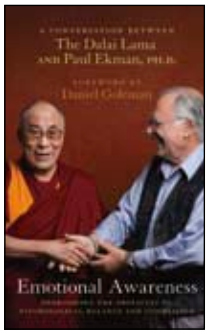
A CONVERSATION BETWEEN THE DALAI LAMA AND PAUL EKMAN

Times Books, 2008, 288 pages

"RELIGIONS OFTEN DIVIDE THE WORLD. What unifies us are our emotions."

This statement, which world-renowned psychologist (and *Greater Good* editorial board member) Paul Ekman recalls hearing from the Dalai Lama at a conference in 2004, could serve as the tagline for *Emotional Awareness*, a compilation of three separate but related conversations between the two men.

Of course, as Ekman points out in the introduction to the book, our emotions can fuel violence and divisions. But it was their shared and profound interest in the nature of emotion that brought together the Dalai Lama, the Nobel Peace Prize-winning spiritual and political leader, and Ekman, a non-practicing Jew who professes skepticism for all religions. They devote much of their dialogue to discussing how people can cultivate compassion, minimize the harmful effects of emotions like anger, and achieve balance in their emotional lives.



Their conversation draws on both Eastern philosophy and Western scientific research, identifying places where the two converge and illuminate one another. There's something incredibly refreshing about the playful and open-minded way the two men go about their discussion, looking for common ground without sacrificing their skepticism or willingness to challenge one another. While they sometimes debate esoteric points, their back-and-forth engages the reader to consider some of the most vital and complex moral issues that confront humanity.

In the end, *Emotional Awareness* is more than a dialogue between two of the world's leading emissaries from the worlds of science and religion. It's a dialogue between two people exploring how their respective expertise on emotion can help reduce suffering and make the world a more just and peaceful place. **—Jason Marsh**



Cheryl Olson and co-author Lawrence Kutner found their research results misrepresented by media coverage.

X-Play

Through the Looking Glass

What happens when media coverage distorts science?

BY CHERYL OLSON

WHEN I STARTED RESEARCHING HOW video games affect adolescents, I didn't realize how polarized opinions were about the issue, or how our results would be distorted in the media. The experience has taught me something about our media culture—and what we can do to improve coverage of scientific research.

For example, on the day that the notoriously violent videogame *Grand Theft Auto IV* was released, two Boston television stations interviewed me. I said pretty much the same things to both stations: Our study of 1,200 junior-high students *did* link violent games to greater risk for common childhood problems, such as fighting and poor grades, but many children play these games, and most of them *do not* have serious problems.

But one station led its report with "critics are doing everything they can to keep the violent game away from children," and then quoted me. The other began with the opposite premise—experts say that parents have nothing to worry about—and then used essentially the same quote from me.

My experience is not unique: Many researchers have seen their results distorted beyond recognition as they filtered through mass media. A decade ago, three medical researchers (Ian J. Deary, Martha C. Whiteman, and F.G.R. Fowkes) published a study about the link between personality and heart disease, finding that "men and women with more submissiveness were less likely to have a myocardial infarction."

The first few stories, in major newspapers, were fairly accurate. But the researchers watched in horror as their results were recast as an anti-feminist message, with headlines such as, "Do what hubby says and you'll live longer; Professors' shock advice to women," and "Put down that rolling pin, darling, it's bad for your heart."

The British medical journal *The Lancet* reported on the media's distortion of this research, quoting one newspaper editor who lauded the "rolling pin" phrase: "How many readers, I wonder, were able to pass that headline without the flicker of a smile?" he said. "For this is what the game is about: stopping readers in their tracks long enough to read the story."

In the 10 years since, the rise of voracious 24-hour news channels and countless bloggers has intensified competition in this "game." One study found that the majority of local news stories on health or social issues are less than a minute long. If your work doesn't neatly fit a simple pro or con position, you may find yourself forced into one—which happened to me many times as I discussed our research with reporters.

Why is this cause for concern?

When data are distorted, there are real-world consequences. For example, worries about violent video games may draw attention and funds away from less-glamorous programs proven to reduce juvenile delinquency. Media-generated myths about medical symptoms or dangers ("No crushing chest pain? It's not a heart attack") can be fatal.

Moreover, the media's focus on contrarian information can provoke a general distrust of scientific research. "First, the scientists say that eggs are bad for me; now they say that they're good. Why should I believe anything they say?"

Fortunately, I believe there are ways researchers and the general public can counter these ill effects.

First of all, researchers must become savvier about shaping messages to the public. They can start by providing perspective to journalists: How does new data add to (or fit with) what we already know? What can be done with this information? What is still unknown, and where might we go from here?

They should also look for ways to add accurate information to the media mix, such as developing their own websites or holding Q&As with friendly bloggers. After that, deciding which distortions to follow-up on and correct is a matter of triage. Researchers have to focus on those most likely to be read or heard, to affect public health or policy, or to damage their reputations or ability to work.

For the rest of us media consumers, we have to remember that new, surprising, or scary reports are designed to attract (and often get) our increasingly fragmented attention. We have to weigh these reports, and put them into context, through a combination of scientific and media literacy: Who conducted the study, why, and with what funding? How many people were studied, for how long, and who and where were they? If the research posits dangers in your coffee or toothpaste, how big are these risks compared to other health risks, or compared to potential benefits of that habit or product?

In the end, all we can do is minimize distortion, not eliminate it. But if we turn off the sensationalist news and reward accurate reporting, we might win better coverage.

Cheryl K. Olson, Sc.D., is the co-founder and co-director of the Center for Mental Health and Media at Massachusetts General Hospital, and the co-author (with Lawrence Kutner) of the 2008 book *Grand Theft Childhood.* Olson, Kutner, and their research on video games were profiled in the Spring 2008 issue of *Greater Good*.

The Compassionate Animal

BY MARC BEKOFF

OUR RELATIONSHIPS WITH NONHUMAN animals range all over the place. They're complicated, frustrating, awkward, loving, and challenging. Around the world we gawk at animals in wonder, experiment on them, eat them, wear them, write about them, draw and paint them, make decisions for them, and move them from here to there as we "redecorate nature." Yet we often ignore who they are and what they want.

In truth, science has discovered a lot about the inner lives of diverse species, more than we often give ourselves credit for. Indeed, animals' lives aren't all that private, hidden, or secret; a flurry of research has offered insight into the emotional lives of animals. We now know that animals have a point of view and that they experience deep feelings.

Two recent discoveries speak to the emotional lives of vastly different species, mice and whales.

In 2006, a Canadian team of neuroscientists showed that mice are empathic beings that feel the pain and suffering of other mice. McGill University's Dale Langford and colleagues injected acetic acid into the paws of one or both members of a pair of adult mice, causing a painful burning sensation. Mice who watched their cage-mates in pain became more sensitive to the same painful stimuli, indicating that they had a notion of what the others were experiencing. A mouse injected with acid writhed more violently if his or her partner had also been injected and was writhing in pain.

Of course, it's ironic that painful experiments like that one are used to uncover animal emotions, when observations of these rodents and many other animals clearly show that they experience empathy and other feelings. These scientific facts haven't yet entered into discussions about the well-being of mice.

Anyone who has worked with whales intuitively knows they're extremely emotional, but only in the past few years have researchers uncovered biological evidence for this fact. They've found that many types of whales have specialized "spindle cells"—cells important in processing emotion and developing intelligent behavior—in brain regions linked to social organization, empathy, intuition about the feelings of others, and rapid gut reactions. Humans have spindle cells in the same brain regions, and previously these cells were thought to exist only in humans and other great apes.



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Animals have a point of view and they experience deep feelings.

The presence of these spindle cells suggests that whales have advanced abilities to experience emotion, and we can find plenty of real-world evidence to back this up. In December of 2005, the *San Francisco Chronicle* reported on a 50-foot, 50-ton female humpback whale who had been caught in a net near the Farallon Islands, off the California coast. After rescuers untangled her, the humpback swam up to each of them and winked before swimming off. According to the story, the rescuers all agreed that she was expressing gratitude.

These discoveries surely make us rethink how we treat animals. But cruelty to animals has serious implications for humans as well.

Studies by Frank Ascione, Phil Arkow, Barbara Boat, and many others show that children who are cruel to animals are significantly more likely to commit violence against humans later in life—the absence of empathy for one indicates lack of empathy for the other. Indeed, studies of prison inmates reveal that as many as 75 percent of violent offenders had early records of animal cruelty.

When we link these studies in cruelty with new discoveries about the inner lives of animals, our relationships with animals take on greater importance: It becomes clear that compassionate relationships with animals are integral to a more compassionate world.

There are two main steps we can take toward fostering these compassionate relationships. First, we must recognize that animals have active minds and deep feelings. Second, we must "mind" them as their caretakers in a human-dominated world, where their interests are continually trumped in deference to ours.

Many programs have tried to make this ideal of minding animals a reality. I serve as a roving ambassador for Jane Goodall's Roots & Shoots Program, which helps kids learn how to care for animals, the earth, and people. The Humane Society of the United States has a program, called "First Strike," devoted to learning more about the connection between cruelty to animals and to humans. The Society & Animals Forum and the Human/Animal Violence Education Network have also launched similar programs that deserve our support.

Ultimately, I believe compassion for animals will make for more compassion among people, weaving more empathy, respect, dignity, and love into all our lives. Animals and future generations of humans will surely thank us for our efforts.

Marc Bekoff, Ph.D., is the author of many books, including *The Emotional Lives of Animals*, *Animals Matter*, and *Wild Justice: Reflections on Empathy, Fair Play, and Morality in Animals* (with Jessica Pierce), and he is the editor of the *Encyclopedia of Human-Animal Relationships*. He and Jane Goodall co-founded Ethologists for the Ethical Treatment of Animals.

Social and emotional learning (pg. 11)

The Inner Resilience Program equips New York City school staff and parents with the tools and skills necessary to build their inner strength, and assists them to model these skills for the young people in their care. **www.innerresilience-tidescenter.org,** 212-509-0022

Sierra Leone (pg. 34)

The LemonAid Fund aids individuals in their efforts to achieve positive and lasting change in the lives of their children, families, and communities, with a focus on Sierra Leone, where the LemonAid Fund supports a network of 10 schools and two orphanages. **www.lemonaidfund.org**

Global warming (pg. 40)

The Alliance for Climate Protection is a nonprofit, nonpartisan effort founded by Nobel laureate and former Vice President Al Gore that seeks to educate people in the United States and around the world that the climate crisis is both urgent and solvable. **www.wecansolveit.org**

The Climate Action Network is a worldwide network of more than 430 NGOs working to promote government and individual action to limit human-induced climate change to ecologically sustainable levels. **www.climatenetwork.org,** 202-609-9846

The Global Roundtable on Climate Change brings together high-level, critical stakeholders from all regions of the world to discuss and explore areas of potential consensus regarding core scientific, technological, and economic issues critical to shaping sound public policies on climate change. **www.earth.columbia.edu/grocc**

The Intergovernmental Panel on Climate Change is a scientific intergovernmental body, set up by the World Meteorological Organization and the United Nations Environment Program, dedicated to providing decision-makers and others interested in climate change with an objective source of information about climate change. **www.ipcc.ch**

The U.S. Department of Energy offers extensive energy-saving tips at home and in the office. **www.energy.gov/energysavingtips.htm**

Animal compassion (pg. 48)

Roots & Shoots engages and inspires youth through community service and service learning. Founded by Jane Goodall, this global program promotes care and concern for animals, the environment, and the human community. **www.rootsandshoots.org,** 800-592-JANE

Humane Society First Strike Campaign raises public and professional awareness about the connection between animal cruelty and other violent crime violence, and helps communities identify some of the origins of violence, predict its patterns, and prevent its escalation. **www.hsus.org/hsus_field,** 202-452-1100

The Society & Animals Forum works with social scientists, mental health providers and other animal protection organizations to reduce the suffering and exploitation of both human and nonhuman animals. **www.psyeta.org,** 301-963-4751

The Human/Animal Violence Education Network is a Massachusetts-based coalition of citizens and professionals who come together to identify the connections between animal cruelty and human violence. **www.havennetwork.org,** 413-447-7878, ext. 40

Additional resources

The Intercultural Communication Institute promotes education and training to help people deal with cultural differences, with the goal of minimizing destructive conflict among national, ethnic, and other cultural groups. **www.intercultural.org,** 503-297-4622

Prison Fellowship International is an association of faith-based organizations active in 112 countries. It has developed internationally recognized expertise in restorative justice, which emphasizes repairing the harm caused or revealed by criminal behavior. **www.pfi.org,** 703-481-0000

UnderstandingPrejudice.org offers educational resources and information on prejudice, discrimination, multiculturalism, and diversity, with the ultimate goal of reducing the level of intolerance and bias in contemporary society. **http://understandingprejudice.org**

The United States Institute of Peace, established and funded by Congress, helps prevent and resolve violent international conflicts, promotes post-conflict stability and development, and increases conflict management capacity, tools, and intellectual capital worldwide. **www.usip.org**, 202-457-1700

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Greater Good is published by the Greater Good Science Center at UC Berkeley, which promotes the study of human happiness, compassion, and altruism. Funding for *Greater Good* comes from the Herb Alpert Foundation and Tom & Ruth Ann Hornaday. If you would like to make a donation, please visit greatergood.berkeley.edu or contact Christine Carter at christinecarter@berkeley.edu.

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