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## **Dacher Keltner**

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## At Davos, psychologist explains machismo that gave rise to #MeToo

By Yasmin Anwar, Media Relations | JANUARY 26, 2018

The lone male voice on a distinguished panel on gender, power and sexual harassment, UC Berkeley psychologist Dacher Keltner this week offered research insights into male sexual aggression and the backlash that has sparked the #MeToo movement.



UC Berkeley psychologist Dacher Keltner with Ad Council chief executive Lisa Sherman (left) and Oxfam International executive director Winnie Byanyima (right) at World Economic Forum panel on power, gender and sexual harassment.

At the World Economic Forum in Davos, Switzerland, Keltner, author of *The Power Paradox*, joined panelists Peggy Johnson, an executive vice president at Microsoft; Maryam Monsef, Canada's minister on the status of women; Winnie Byanyima, executive director of Oxfam International, and Lisa Sherman, chief executive at the Ad Council, whose campaigns include "It's on Us" (to stop sexual assault), and the soon-to-be-launched That's Harassment.

Panelists discussed the challenges that have kept generations of women from speaking out, as well as the cultural and economic changes needed to turn the tide on sexism. Click [here](#) to watch the panel discussion sponsored by *The New York Times*.

Johnson of Microsoft recalled the detours she and her female coworkers took 25 years ago to avoid men who made inappropriate comments.

"I have a daughter who just entered the tech industry, and she said, 'You know mom, when I hear inappropriate jokes, I don't laugh,'" Johnson said. "I thought to myself, I always laughed because I thought I had to ... I don't anymore because I'm in a position of power. Whenever I feel discouraged I just look at her, and I see it's changing."

Reflecting on the #MeToo movement fueled by the behavior of movie mogul Harvey Weinstein and other alleged predators, Keltner described the “sexual overperception” that leads a powerful man to misread social cues and make unwanted advances to a female subordinate.

“If I’m a powerful man and I’m interacting with a woman who is less powerful, I might be feeling more sexually aroused,” he said. “I’ll act on those impulses and encroach on their space. I erroneously believe that the woman is attracted to me when in fact, she’s repulsed, or anxious, and that’s bad news.”



Overall, power changes humans, making them more impulsive and focused on themselves. But men react differently from women, said Keltner, who is co-founder and faculty director of UC Berkeley’s Greater Good Science Center.

“Men tend to take more risks, they tend to be a lot more aggressive and they tend to sexualize things,” he said. By comparison, “women tend to be more collaborative ... with women in power, you don’t see as much corruption, you don’t see abuse.”

Keltner, an expert on the science of emotions who serves as a consultant at Facebook and Google, said that on a positive note, the model of power is changing dramatically.

“We are shifting historically from a top-down Machiavellian style toward a more collaborative model,” he said.

# Sex, Power, and the Systems That Enable Men Like Harvey Weinstein

by Dacher Keltner

OCTOBER 13, 2017

When I first heard accounts of film producer Harvey Weinstein's predatory behavior, my mind devised punishments fitting for Renaissance Europe or the film *A Clockwork Orange*. Cover his face with a shame mask widely used centuries ago in Germany; shock his frontal lobes so that he'd start empathizing with the women he's preyed on. When we learn of injustice, it's only human to focus on how to eliminate or punish the person responsible.



STOCKBYTE/GETTY IMAGES

But my research into the social psychology of power suggests that — without exculpating corrupt individuals — we also need to take a hard look at the social systems in which they commit their abuses.

For 25 years, I and other social scientists have documented how feeling powerful can change how ordinary citizens behave — what might be called the banality of the abuses of power. In experiments in which one group of people is randomly assigned to a condition of power, people in the "powerful" group are prone to two shortcomings: They develop empathy deficits and are less able to read others' emotions and take others' perspectives. And they behave in an impulsive fashion — they violate the ethics of the workplace. In one experiment, participants in power took candy from children without blinking an eye.

Our research also shows that these two tendencies manifest in inappropriate sexual behavior in male-dominated contexts, echoing the accounts of the women assaulted by Weinstein. Powerful men, studies show, overestimate the sexual interest of others and erroneously believe that the women around them are more attracted to them than is actually the case. Powerful men also sexualize their work, looking for opportunities for sexual trysts and affairs, and along the way leer inappropriately, stand too close, and touch for too long on a daily basis, thus crossing the lines of decorum — and worse.

These findings from laboratory studies tell us that abuses of power are predictable and recurring. So too does a quick reflection on history. While I've been studying power, each year there's been a new example of a powerful man sexually abusing others, and in every imaginable context — religious organizations, the military, Capitol Hill, Wall Street, fraternities, sports, the popular media, tech, labs, and universities.

We should also take a lesson from the now-canonical studies of Stanley Milgram on obedience to authority. Those studies, inspired by Milgram's quest to understand the conditions that gave rise to Nazi Germany, showed that authoritarian contexts can prompt ordinary, well-meaning citizens to give near-lethal shocks to strangers off the street. In a similar fashion, contexts of unchecked power make many of us vulnerable to, and complicit in, the abuse of power. We may not like what's going on, but many of us wouldn't do anything to stop it. This doesn't excuse the rest of us any more than it excuses the powerful for their crimes, but it should prevent us from telling ourselves the comforting lie that we'd behave better than the people in The Weinstein Company who reportedly knew what Weinstein was doing and failed to put a stop to it.

The challenge, then, is to change social systems in which the abuses of power arise and continue unchecked. And on this the social psychology of power offers some insights.

First, we need to hear tales from those abused by the powerful, as difficult and unsettling as it can be to share these stories. Kudos to the brave people who are calling out the bullying and sexual abuse of Weinstein and others. These tales galvanize social change. For example, when English citizens started to hear the stories about the treatment of slaves on slave ships in the 1700s, the moral calculus of the slave trade started shifting, and antislavery laws followed. Telling such stories also functions as a means by which those with less power construct the reputations of those in power and constrain their impulsive tendencies.

We are also learning of the many benefits of women rising to positions of power, from lower rates of corruption to more-profitable bottom lines. Hollywood is one of the most male-dominated sectors, where only 4% directors are female; more female directors and producers would change the balance of power in filmmaking. Studies show this kind of systemic change will reduce the likelihood of sexual abuse. For example, ethnic minorities are more likely to be targeted in hate crimes as the numerical advantage enjoyed by whites increases. Greater numerical balance between people of different groups constrains the abuses of power: Those from less powerful groups have more allies, they are more likely to be watchfully present in the contexts in which the powerful abuse power, and they are more likely to feel empowered to speak truth to power.

Finally, we need to take on the myths that sustain the abuses of power. Social scientists have documented how coercive power structures sustain themselves through social myths, which most typically justify the standing and unfettered action of those at the top. We've heard them before: "Women aren't biologically equipped to lead." "African Americans aren't worthy of the vote." "He may scream at people and cross some lines, but he's a genius." And a favorite in Hollywood: "Women are turned on by men with power like Weinstein." Actual scientific studies find something quite different: When women (and men) are placed into positions of less power, their anxiety, self-consciousness, and worry rise dramatically, and their pleasure and delight, including sexual, are turned off.

This moment has the potential to become a tipping point in the fight against systemic sexual assault. For it to live up to the promise of this billing, we have to recognize the banality of Harvey Weinstein, and turn our attention to changing the social context in ways that make the human tendency to abuse power a thing of the past.

May 8, 2016 11:44 pm

## Hollywood's emotion guru takes on Machiavelli

By Susie Measure

Berkeley professor Dacher Keltner's new book claims collaboration beats machination



'Inside Out': Professor Dacher Keltner, below right, advised Pixar on its animation film that explores the conflicting emotions of an 11-year-old ©Disney/Pixar

There cannot be many business school academics with a hotline to Hollywood. But Dacher Keltner, a US psychology professor who lectures senior managers on how to behave at work, has become something of a go-to guy for Tinseltown since advising on *Inside Out*, the Pixar film that laid bare the inner turmoil of Riley, its 11-year-old star.

Prof Keltner is in demand for his work on decoding emotions, which has culminated in a book explaining how people gain and lose power, based

on the studies of executive behaviour he has undertaken over 20 years. After our interview, he is due to fly to Los Angeles to meet the director

behind a reboot of *The Invisible Man*. "He's interested in what happens to somebody when no one else can see their face and their facial expressions, which is a very poignant question. Without our emotions, it's very hard to feel like you're connected to the world," says Prof Keltner.

The academic from the University of California, Berkeley is preoccupied with understanding how people interact and, in particular, how that affects how they gain, or lose, power.

Five centuries after Niccolò Machiavelli shaped our cultural references to how people rise up the ranks, the author has designs on the legacy of the Italian Renaissance writer, aiming to dilute it with a theory of collaborative power trumping coercive power.

"I want to move beyond Machiavellianism, with a message about the power for good," he says, oozing the sort of west coast optimism found at the likes of Facebook and Google (both tech groups have been consulting clients of his, the former seeking advice during an overhaul of its emojis).

The argument of his book, *The Power Paradox*, is that people gain power not through coercion, as in 16th century Florence, but by being socially intelligent and empathetic, or in other words: nice. And yet, having power and privilege, he writes, "leads us to behave, in our worst moments, like impulsive and out-of-control sociopaths".

This is behaviour that Prof Keltner thinks the powerful must change if they want to stay on top. His research — he heads Berkeley's Greater Good Science Center as well as teaching at its Haas School of Business — has found that executives who behave better, treating their teams well and



Dacher Keltner ©Jigar Mehta

respecting those beneath them, make more money. It is that simple. “If leaders stay focused on the people they lead and their interests, then they do well and their bottom line is better.”

What’s more, altruistic executives keep their jobs. “In almost every kind of workplace organisation, if you really have a deep interest in other people, you’ll keep your power.”

He believes women are helping to drive the change. “Women tend to be more interested in collaborative power. There are studies to verify that. I think we will see the nature of power shift as women get into power.”

Like women, older people also tend to value working with others more, “raising this interesting possibility that the people who really like to abuse power are of a certain age, and with experience comes a wiser and more collaborative approach.”

Asked whether women at the top are nicer than their male equivalents, Prof Keltner laughs, but he thinks there is something in it based on the female executives that take his classes — women from the “management bubbles of eBay, and Apple, and construction companies, and hospitals, and parts of government”. Yet this is only true up to a point. He says: “In general, we find that, regrettably, women in power tend to be vulnerable to the same abuses as men. They may not harass somebody sexually, but they will be prone to impulsive behaviour, uncivil behaviour; they’ll stop empathising as much.”

Prof Keltner’s work differs from that of Stanford’s Jeffrey Pfeffer, another California-based academic, who argues, rather more pragmatically, that employees just need to accept that leaders are immodest and prone to lying.

Asked whether he is detached from the real world, Prof Keltner runs through a list of people’s faults once they get a promotion, from swearing more to not respecting anyone beneath them. “When I teach this stuff to leaders, I’m like, ‘This is what power can do.’ They smile, and say, ‘Oh, I did just that the other week! I should have tempered my language!’”

What, they all see the error of their ways, just like that? “Usually, when I teach 40 people, there will be three or four who’ll say, ‘Come on! You don’t gain power by being kind!’ They tend to be more Machiavellian types who think you have to screw people over.”

He cites other business school academics interested in teaching ethics, such as Michael Norton at Harvard, as evidence of “a groundswell of a movement”, triggered, he thinks, by “too much greed” and rampant executive compensation. “We’re moving back a little bit towards an interest in the “common good,” he says.

# How modern power works: less Game of Thrones, more Black Lives Matter

Social psychologist Dacher Keltner, author of *The Power Paradox*, says the key to success is changing. The Machiavellian rule of the Lannisters is less effective than ground-up collaboration



Dacher Keltner, American academic and author. Photograph: Sarah Lee for the Guardian

## Archie Bland

Tuesday 10 May 2016 16.15 BST

If you drive a Prius, Dacher Keltner believes, there is an above-average chance that you are not an especially pleasant person. He explains how he came to this conclusion as congenially as he can. It is not a hunch.

One day, near the Greater Good Science Center that he runs in Berkeley, California, Keltner was riding his bicycle, minding his own business, when a black Mercedes almost hit him. Afterwards, he thought about that moment – the indomitable motorcar paying no heed to the fragile two-wheeler – as a miniature of the power dynamics in daily life, a subject that has occupied his attention for years. “It’s morality and it’s deadly – and there are laws,” he says. “It’s society in play. And I was like: That’s what we’re studying, right there.”

With his colleague, Paul Piff, Keltner organised a study examining the behaviour of drivers at crossings where pedestrians had the right of way. The kind of car a person drives is a reasonable analogue for their place in the world, and Keltner wanted to see whether there was a relationship between power and good road manners.



Cars were coded by their make, prestige and age. One researcher stood at the crossing; another waited out of sight nearby and watched what happened.

Again and again, when drivers in the least prestigious vehicles appeared, they would wait patiently for the pedestrian to cross. Not a single one of the lowest-status cars breached the rules of the road. But at the other end of the spectrum, drivers of BMWs, Mercedes and – yes – electric hybrid Priuses ignored the pedestrian nearly half the time. After the study was published in 2012, Keltner says, “People were writing in and calling up, and there were several calls where people were saying: ‘I drive a Prius. Doesn’t that mean I probably don’t violate the rules of the road?’ But Paul did the analysis and the Prius drivers were the worst ... They’re morally superior, so they blaze through stop signs.”

The results gave Keltner particular satisfaction. “I love teaching executives this finding,” he says. “You know, in a way it was a little bit of speaking truth to power, right? You may be in a Range Rover, but we’re watching you.”

I’m meeting Keltner at the Cinnamon Club, an Indian restaurant in Westminster beloved of politicians and their acolytes. Its lavish dining room in the repurposed Old Westminster Library provides another set of status indicators. Nearby, Lord Puttnam is talking animatedly over a cooked breakfast. Keltner – who may be best known outside psychology circles for his work on Pixar’s *Inside Out*, where he advised the filmmakers on the science behind how emotions work in the human brain – pokes at a rubbery looking omelette and, I surmise, thinks wistfully of Californian avocado and blueberries. With tanned features framed by extravagant curtains of hair that fall either side of his face, his status as an outsider is immediately telegraphed. He looks like the Dude from *The Big Lebowski* – if the Dude had gone into social psychology.

If the Cinnamon Club is suspicious of Keltner, the feeling is probably mutual: if he had his way, the version of power emblematised by places such as this wouldn’t last for long. He has done many studies like the Prius one; put together, they form the basis of his belief in a phenomenon that he would like to illuminate and then undermine. He calls it *The Power Paradox*, which is also the title of his new book. The theory is simple enough, but he believes it could also be radical.

By and large, Keltner says, we have adhered to a model of power that comes straight out of Renaissance political philosopher Niccolò Machiavelli, whose enduring influence causes him no end of frustration. “You cannot believe how fundamental Machiavelli is to the way we understand power,” he says, sunnily. “So I became obsessed with him. When you speak to government leaders, they immediately bring up Machiavelli.”

You cannot believe how fundamental Machiavelli is to the way we understand power

That, Keltner believes, implied an acceptance that power was a basically adversarial, zero-sum construction, a coercive mechanism whose goal was to get other people to do what you want even when their own interests militated against it. This is the version of power we take for granted, the one explored, by means bloodthirsty and conniving, in such current cultural totems as *Game of Thrones* and *House of Cards*. “Machiavellianism makes for the best literature,” Keltner admits, but he doesn’t have a lot of time for such stories as guides to reality. “This guy comes from 16th-century renaissance Italy. There’s a culture of honour, a revenge-based culture, and it’s as violent as any place in human history. Well, when you line up the data and say, ‘OK, let’s find the Machiavellians and see how they do,’ they don’t do well. They don’t do well in organisations and they don’t do well in schoolyards.”

Instead of the Machiavellian definition of power, Keltner – the title of whose previous book, *Born to Be Good*, indicates his prevailing optimism – wants us to think of another one. When you really look closely at how power operates successfully today, he argues, you find that it doesn’t tend to be a tale of Frank Underwoods and Cersei Lannisters exerting their will on the great unwashed, but of collaborators yoking others to their cause by making them stronger. In this analysis, power is not a zero-sum game, but a process of mutual

reinforcement, one that we misunderstand by dint of our tendency to seek out the grand personalities who make a history lesson livelier. For ground-up organisations such as Black Lives Matter or the Tea Party or our own Corbynite Momentum movement, this is good to hear. “Nearly every social movement begins in the absence of might,” Keltner says, “and that’s one view of history: all these great social changes begin with people who have little opportunity. And power exists in the smallest human relations.” The benevolent, consultative Claudio Ranierimight survey his achievements and pizza parties at Leicester City and nod in recognition as well.

Being from Berkeley, Keltner knows a lot of people who are squeamish about power. But, he has concluded, it’s everywhere, like it or not, and it must not be ceded to the self-interested. “It used to be that when I would tell people that I study power, my friends would be like: ‘Euuurgh, I don’t want that stuff.’ And I’d be like: ‘You’d *better* want that stuff.’”

He gestures towards me over his omelette. “It exists between you and me, and around this room, and in families and with kids, and it’s clear that there are many other forms than coercive power. And when you look at decades of data – I cite this one long review that was conducted over 40 years – it’s clear that we’re moving out of coercive power and towards collaborative power. And it’s just this big shift in our world culture.”

So that, Keltner argues, is how we gain power today: by operating on the understanding that its purpose is, as he defines it in the book, about “enhancing the greater good”. This sounds like very good news. But there’s a problem – one neatly encapsulated by the Prius driver who buys his car on the understanding that it is better for the environment and comes to love it as a signal of his wealth and virtue. Keltner quotes Lord Acton, who he trusts more than Machiavelli: “Power corrupts, and absolute power corrupts absolutely.” The results, he writes, are not pretty. “People who enjoy elevated power are more likely to eat impulsively and have sexual affairs, to violate the rules of the road, to lie and cheat, to shoplift, to take candy from children and to communicate in rude, profane and disrespectful ways ... We gain and maintain power through empathy but, in our experience of power, we lose our focus on others.”

Is this corruption inevitable? Keltner thinks not, if only we are more alive to the risks. And when he’s trying to show that the usual conclusion of the power paradox can be avoided, Keltner is his own test case. After all, unassuming as he is, he is an indisputably powerful (white) man, an influential scientist from an intellectual family (his mother is a literature professor; his father an artist) with many young and impressionable people in his charge.

Still, he has more context than many in his position. Lucky though his childhood was, he spent part of it in a poor rural town when his mother got a teaching job nearby; growing up from the age of nine in Penryn, northern California, he became acutely aware of the gap between his status and that of his neighbours, of the terrible physical and psychological costs of powerlessness and, conversely, of what he rhapsodises in his last chapter as the “empathy, kindness, generosity, respect and inclusiveness that the poor live by in response to the harsher material conditions of their lives”. In this section, the book begins to seem like a Trojan horse: a work that pitches itself as a guide to how to get ahead in the office, and winds up as a manifesto for lifting up the dispossessed. And so, now that Keltner’s ideas are gaining traction, he is at pains to avoid the pitfalls that he has articulated – pitfalls (or opportunities) that he sees everywhere.

“When you have a two-year-old, you think it’s all about love, but there’s power,” he says. “Constant power. There is power from the minute the foetus is in the womb trying to maximise its resources to the last moment on your deathbed. That’s just the game. Every interaction has power.” What about this conversation, right now? He looks at me and grins. “You and I are like ... I’m saying: ‘Hey, man, you’re reaching my core constituency, I want you to say good things,’ and you’re trying to get good stuff for your piece. But does it have to be zero sum? Is it win or lose? Or is it non-zero? Can we both gain? So, yeah, there’s gamesmanship and strategy in collaboration, too. And it’s a good thing.”

The whole encounter proceeds in this vein. When I raise caveats to his ideas, he describes them back to me as interesting features, rather than inconvenient challenges; again and again, he smilingly praises my questions and acts as if I am much more expert than I am. He uses my name a lot. “This is a very enlightening conversation!” he says, as if he hasn’t been working on the subject for years and dealt with every objection I might make a dozen times already. It’s implausible, but completely endearing. When he drives, you suspect, he scans the pavement avidly for pedestrians who may wish to cross.

If it wasn’t so charming, it might be unsettling: the one thing he has in common with the Machiavellians is his acute awareness that every interaction is an opportunity to exercise power. As it happens, this is the pursuit of the greater good. It’s lucky that most megalomaniacs and despots are constitutionally incapable of such a generous approach. The monster who understands that cheerful allies are his best weapon would be the most dangerous monster of all.

Not that the traditional model is entirely out of steam. The greatest problems for Keltner’s theory are the real-world counter-examples. Jeremy Corbyn is not your typical self-aggrandising politician, but reading out voters’ questions hasn’t worked out fantastically well so far; David Cameron’s more traditional approach to power, in contrast, looks fairly solid. In America, the man who must be considered the political phenomenon of the moment probably thumbs a gold-jacketed copy of *The Prince* over his Trump Steak dinner. Considering these significant – and by no means isolated – asterisks to the steady march of collaborative power, it’s tempting to see this model not as an analysis, but an aspiration: if everyone defined power as a “means of enhancing the greater good”, that would be lovely, but a great many very powerful people don’t. And if power for them is not a means but an end, how does telling them that they have missed the point get us anywhere?

He cackles in recognition. “I’ve taught this for 15 years,” he says, “and people would always say: “Yeah, this makes sense for my organisation,” or “I can say this about my family – but what about Dick Cheney?” And at the peak of their power it was like, man, they’re running roughshod over everything.”

But history tells a different story. “The Bush administration will go down reputationally as one of the worst presidencies.” This isn’t a question of values, but of irreversible legacy – of doing something that makes a permanent impact. “A lot of data shows that they cost us a lot of esteem on the world stage, and that constrained our influence, and their power. And now the American public is sick of dumb interventions like theirs. So their power didn’t last. Historians have rated the legacies of presidents, and the consensus is that it’s the more collaborative ones who have a legacy. Maybe the coercive stuff gets you short-term gains politically, but in the long term, it’s about who built things.” His team did, inevitably, try to test this for themselves. “We coded the speeches of 150 US senators for whether they showed elements of virtue or Machiavellianism. And the evidence is that it’s the virtuous guys who get stuff done.”

There must still be the fear, then, that he is a classic case of confirmation bias: the idea of power that he espouses hews too closely to his politics to entirely persuade you that it isn’t a call to arms instead of a description. As we finish up, he acknowledges the possibility himself. “That’s really interesting,” he says, true to form. “I always try to stay close to the science, and the answer is that we don’t know.”

It may simply be that the model that works best to gain power for outsiders is not the one that works best for those who already have it. That’s what he intends to study next. Anyway, even if his ideas are shot through with romantic aspiration, they are no less appealing for it. The Westminster old guard sat all around him may not realise it, but Dacher Keltner and his ideas may pose a severe challenge to their way of doing business. And it gets worse: as he and his cohorts render them obsolete, they will rub it in by being *nice* to them.

## An Upbeat Emotion That's Surprisingly Good for You

By GRETCHEN REYNOLDS

MARCH 26, 2015

Dark moods are bad for your health. Scientists have known for decades that a wide variety of unpleasant emotions, like shame, depression and anxiety, are linked to greater rates of ills like heart disease, inflammation, cancer and premature death. Conversely, positive feelings have been shown to be good for you.

Far less is known, however, about the health benefits of specific upbeat moods — whether contentment, say, might promote good health more robustly than joy or pride does. A new study singles out one surprising emotion as a potent medicine: awe. And happily, awe seems to be much easier to come by than many might expect, even for the busy and stressed-out.

For the study, published in January in the journal *Emotion*, researchers from the University of California, Berkeley, and other institutions focused on some particularly moody subjects: college freshmen. Ninety-four Berkeley students were recruited to fill out questionnaires about how frequently during the past month they felt various positive and negative emotions, like hostility, enthusiasm and inspiration. The students then supplied saliva samples, which were analyzed for interleukin-6, a molecule known to promote inflammation throughout the body. Because inflammation is tied to poor health, researchers figured that low levels of IL-6 might signal good health. As anticipated, when students' moods were checked against their IL-6 levels, those who had experienced more positive emotions generally had lower levels of IL-6 than classmates whose moods were more frequently sour.

Researchers next enlisted 119 students to complete more elaborate questionnaires about their normal dispositions and the extent to which they had recently felt seven specific emotions: awe, amusement, compassion, contentment, joy, love and pride. The students also provided a saliva sample. While happy moods were collectively still associated with low IL-6 levels, the strongest correlation was with awe. The more frequently someone reported having felt awe-struck, the lower the IL-6.

“There seems to be something about awe,” says Dacher Keltner, a professor of psychology and the senior author of the study, who is also the faculty director of the Greater Good Science Center at Berkeley. (He has studied laughter, empathy and blushing, too.) “It seems to have a pronounced impact on markers related to inflammation.”

Somewhat surprisingly, awe isn't necessarily a rare occurrence, he adds. On average, the students in the study reported feeling the emotion three or more times a week. “How great is that?” Dr. Keltner says.

While acknowledging that awe is conceptually squishy and subjective, Dr. Keltner says that in general, a primary attribute of an awe-inspiring event is that it “will pass the goose-bumps test.” And he advises that people “seek it often.” He is just not certain what that means for everyone. “Some people feel awe listening to music,” Dr. Keltner says, “others watching a sunset or attending a political rally or seeing kids play.”

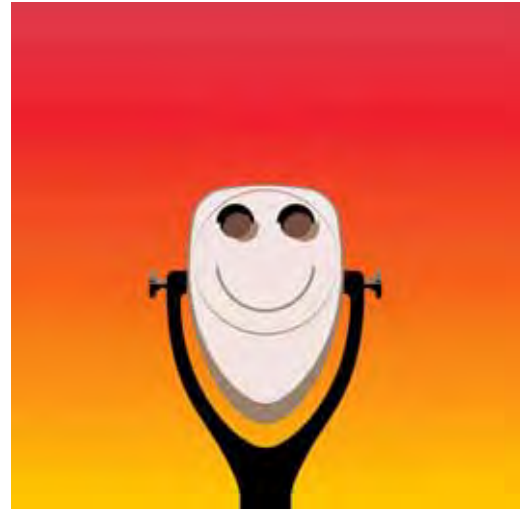


Illustration by Ben Wiseman



## Science Of Sadness And Joy: 'Inside Out' Gets Childhood Emotions Right

June 13, 2015 4:51 AM ET  
Jon Hamilton & Neda Ulaby  
Weekend Edition Saturday



Joy (left, voiced by Amy Poehler) and Sadness (voiced by Phyllis Smith) catch a ride on the Train of Thought in Pixar's *Inside Out*. The movie opens in theaters nationwide June 19. Disney/Pixar

Hollywood's version of science often asks us to believe that dinosaurs can be cloned from ancient DNA (they can't), or that the next ice age could develop in just a few days (it couldn't).

But Pixar's film *Inside Out* is an animated fantasy that remains remarkably true to what scientists have learned about the mind, emotion and memory.

The film is about an 11-year-old girl named Riley who moves from her happy home in Minnesota to the West Coast, where she has no friends and pizza is made with broccoli. Much of the film is spent inside Riley's mind, which features a control center manned by five personified emotions: Joy, Sadness, Fear, Anger and Disgust.

"I think they really nailed it," says Dacher Keltner, a professor of psychology at the University of California, Berkeley who worked as a consultant to the filmmakers.

The movie does a really good job of portraying what it's like to be 11, Keltner says. "It zeroes

It zeroes in on one of the most poignant times in an individual's life, which is the transition to the preteen and early teen years, where kids — and, I think, in particular girls — start to really powerfully feel the loss of childhood.

Dacher Keltner,  
psychologist, University of  
California, Berkeley, and  
consultant to "Inside Out"

in on one of the most poignant times in an individual's life, which is the transition to the preteen and early teen years, where kids — and, I think, in particular girls — start to really powerfully feel the loss of childhood," he says.

As the filmmakers were working, they would fire off emails to Keltner and to Paul Ekman, a pioneer in the study of emotions. The process helped create a movie that's true to the underlying science when it shows things like how emotions tend to color Riley's perception of the world.

"When you are in a fearful state, everything is imbued with threat and uncertainty and peril," Keltner says. And when Riley is sad, he says, even her happy memories take on a bluish hue.

The filmmakers get a lot of other scientific details right. Inside Riley's head, you see memories get locked in during sleep, experiences transformed into abstractions, and guards protecting the subconscious.

There *are* a few departures from the scientific norm. Long-term memories are portrayed as immutable snow globes, though scientists know these memories actually tend to change over time. And Riley gets five basic emotions instead of the six often described in textbooks. ("Surprise," apparently, didn't make the cut.)

Also disgust is present in a pretty mild form — the reaction a child has to eating broccoli. The film plays down a more powerful version of disgust, "like if you suddenly eat a piece of food and it has a worm in it, or it's rotting, Keltner says.

One of the film's high points, though, is its depiction of sadness, Keltner says. In many books and movies for kids, he says, sadness is dismissed as a negative emotion with no important role.

In *Inside Out*, star-shaped Joy gets more screen time. But when the emotions are in danger of getting lost in the endless corridors of long-term memory, it is Sadness, downcast and shaped like a blue teardrop, who emerges as an unlikely heroine.

For kids, Keltner says, that makes "a nice statement about how important sadness is to our understanding of who we are."

# Willamette celebrates Class of 2019 during annual convocation ceremony on Aug. 21

by Erin Dahl, August 24, 2015

Hushed whispers filled the tent on the Quad as people took their seats.

Staff answered questions about the day's itinerary, parents swapped impressions of campus, and students buzzed about class schedules and new roommates.

But when the singing started, all conversations stopped.

Convocation, an annual tradition at Willamette University, celebrates and welcomes the newest class of undergraduates. This year's event, on Friday, Aug. 21, kicked off with a performance by members of the Confederated Tribes of the Grand Ronde, who sang songs passed down from their elders.

Then President Steve Thorsett commiserated with parents about the excitement and anxiety of watching children grow up and leave home, and the university chaplain, Karen Wood, greeted the Class of 2019 with advice and well wishes.

"May we seek the experiences that help us make meaning; may we gain the skills we need to fulfill our purpose. May we embrace both risk and resilience, conflict and compassion, exploration and ease, anxiety and awe," Wood said.



Psychology professor and best-selling author Dacher Keltner discussed keys to happiness during the 2015 convocation address on Aug. 21.

"May our passion be tempered with grace. May our convictions be seasoned with patience. And in all things, may we find in one another good companions, faithful friends, trusted mentors and a community that supports one and all."

This year's guest speaker was Dacher Keltner, a psychology professor, best-selling author of "Born to Be Good," and director of the Berkeley Social Interaction Laboratory. For half an hour, he regaled the packed crowd with insights into his research and offered practical tips on how to become happier.

"Happiness matters enormously," he explained. "Finding happiness adds seven to ten years to your life expectancy."

Yet, in today's stressful, high-pressure world, the pursuit of happiness can seem harder than ever. "This incoming class works harder, knows more and is more perfectionistic than any generation before," he said. "There are costs to that."

To offset the negative aspects of such qualities, Keltner recommended

students try to develop compassion, gratitude, awe and mindfulness – a state of non-judgmental awareness and acceptance of what's happening in our minds and lives.

As Willamette's newest students began an exciting new chapter, Keltner encouraged them to share their personal stories by writing poetry, keeping a journal or confiding in a friend.

"We have a narrative instinct to tell stories," he said. "Your story has characters, settings, conflicts, returning motifs and constant failures. It also has opportunities for redemption. Those stories become the meaning of life."



# The Science of 'Inside Out'

JULY 3, 2015

## Gray Matter

By DACHER KELTNER and PAUL EKMAN

FIVE years ago, the writer and director Pete Docter of Pixar reached out to us to talk over an idea for a film, one that would portray how emotions work inside a person's head and at the same time shape a person's outer life with other people. He wanted to do this all in the mind of an 11-year-old girl as she navigated a few difficult days in her life.

As scientists who have studied emotion for decades, we were delighted to be asked. We ended up serving as scientific consultants for the movie, "Inside Out," which was recently released.

Our conversations with Mr. Docter and his team were generally about the science related to questions at the heart of the film: How do emotions govern the stream of consciousness? How do emotions color our memories of the past? What is the emotional life of an 11-year-old girl like? (Studies find that the experience of positive emotions begins to drop precipitously in frequency and intensity at that age.)

"Inside Out" is about how five emotions — personified as the characters Anger, Disgust, Fear, Sadness and Joy — grapple for control of the mind of an 11-year-old girl named Riley during the tumult of a move from Minnesota to San Francisco. (One of us suggested that the film include the full array of emotions now studied in science, but Mr. Docter rejected this idea for the simple reason that the story could handle only five or six characters.)

Riley's personality is principally defined by Joy, and this is fitting with what we know scientifically. Studies find that our identities are defined by specific emotions, which shape how we perceive the world, how we express ourselves and the responses we evoke in others.

But the real star of the film is Sadness, for "Inside Out" is a film about loss and what people gain when guided by feelings of sadness. Riley loses friends and her home in her move from Minnesota. Even more poignantly, she has entered the preteen years, which entails a loss of childhood.

We do have some quibbles with the portrayal of sadness in "Inside Out." Sadness is seen as a drag, a sluggish character that Joy literally has to drag around through Riley's mind. In fact, studies find that sadness is associated with elevated physiological arousal, activating the body to respond to loss. And in the film, Sadness is frumpy and off-putting. More often in real life, one person's sadness pulls other people in to comfort and help.

Those quibbles aside, however, the movie's portrayal of sadness successfully dramatizes two central insights from the science of emotion.





"Inside Out" features five characters based on human emotions. From left: Anger, Disgust, Joy, Fear and Sadness. Credit Pixar/Disney-Pixar, via Associated Press

First, emotions organize — rather than disrupt — rational thinking. Traditionally, in the history of Western thought, the prevailing view has been that emotions are enemies of rationality and disruptive of cooperative social relations.

But the truth is that emotions guide our perceptions of the world, our memories of the past and even our moral judgments of right and wrong, most typically in ways that enable effective responses to the current situation. For example, studies find that when we are angry we are acutely attuned to what is unfair, which helps animate actions that remedy injustice.

We see this in "Inside Out." Sadness gradually takes control of Riley's thought processes about the changes she is going through. This is most evident when Sadness adds blue hues to the images of Riley's memories of her life in Minnesota.

Scientific studies find that our current emotions shape what we remember of the past. This is a vital function of Sadness in the film: It guides Riley to recognize the changes she is going through and what she has lost, which sets the stage for her to develop new facets of her identity.

Second, emotions organize — rather than disrupt — our social lives. Studies have found, for example, that emotions structure (not just color) such disparate social interactions as attachment between parents and children, sibling conflicts, flirtations between young courtiers and negotiations between rivals.

Other studies find that it is anger (more so than a sense of political identity) that moves social collectives to protest and remedy injustice. Research that one of us has conducted has found that expressions of embarrassment trigger others to forgive when we've acted in ways that momentarily violate social norms.

This insight, too, is dramatized in the movie. You might be inclined to think of sadness as a state defined by inaction and passivity — the absence of any purposeful action. But in "Inside Out," as in real life, sadness prompts people to unite in response to loss. We see this first in an angry outburst at the dinner table that causes Riley to storm upstairs to lie alone in a dark room, leaving her dad to wonder what to do.

And toward the end of the film, it is Sadness that leads Riley to reunite with her parents, involving forms of touch and emotional sounds called "vocal bursts" — which one of us has studied in the lab — that convey the profound delights of reunion.

"Inside Out" offers a new approach to sadness. Its central insight: Embrace sadness, let it unfold, engage patiently with a preteen's emotional struggles. Sadness will clarify what has been lost (childhood) and move the family toward what is to be gained: the foundations of new identities, for children and parents alike.

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Dacher Keltner is a professor of psychology at the University of California, Berkeley. Paul Ekman is a professor emeritus of psychology at the University of California, San Francisco.

A version of this op-ed appears in print on July 5, 2015, on page SR10 of the New York edition with the headline: The Science of 'Inside Out'

# 50 Visionaries Who Are Changing Your World

## What's the Big Idea?

Dacher Keltner, psychologist

Nick Bostrom, philosopher



Human beings are faced with so many short-term problems—how to raise our kids, how to save the environment—that big-picture questions get lost in the rush. What is our potential, as individuals and as a species? What are we capable of? What *should* we be capable of? Psychologist Dacher Keltner and philosopher Nick Bostrom are unaffiliated but like-minded in their pursuit of questions like these.

Keltner maps the physiology of kindness at the Greater Good Science Center in Berkeley, California, exploring the ways we are wired to feel compassion, love, empathy, and gratitude. “We are very cynical about the better inclinations of human beings,” Keltner says of the dim view that posits human beings as inherently selfish, individualistic, and competitive. “But that is half the story.” As Keltner writes in *Born to Be Good: The Science of a Meaningful Life* (Norton, January 2009), studying positive emotions like gratitude, amusement, awe, and embarrassment reveals a more optimistic picture of human nature.

Bostrom goes even further, investigating what lies beyond our biological makeup. “The smartest thing we could do would be to try to make ourselves smarter and wiser,” says the futuristic thinker, who studies human enhancement technologies and other “macro-questions” at the Future of Humanity Institute in Oxford, England.

High-minded inquiries often spiral into passionate, ethical debates that can stall scientific inquiry into everyday things such as improved concentration, better sleep, and increased resistance to pain. What’s unique about Bostrom’s more gentle approach, says nano-ethicist Patrick Lin, is that rather than advocating for one “accurate” vision of our future, Bostrom is deeply rational: “He’s not a rabid advocate, he just really wants to figure out what is right.”

## Book review: "Born to Be Good" and Animals Make Us Human

Reviewed by Art Winslow and Reviewed by Janet Maslin  
Published: Sunday, February 1, 2009

BOOKS Born to Be Good  
The Science of a Meaningful Life

By Dacher Keltner

336 pages. W.W. Norton & Co. \$25.95.

Dacher Keltner sports a big grin in the photograph that accompanies "Born to Be Good." It's not just any big grin. All authors are liable to be self-conscious in posing for book-jacket portraits, but this writer has more reason than most to perfect the fine points. He knows the difference between Duchenne and non-Duchenne smiles: One crinkles the orbicularis oculi muscles, and the other does not. One is genuine and shows in the eyes; the other mostly involves the mouth and looks merely polite. Keltner has made sure that his smile falls on the right side of that distinction, and that it's Duchenne all the way.

Keltner, a professor at the University of California, Berkeley, has devoted himself to studying the social functions of emotion. And his emphasis is on those positive emotions that remain relatively unexplored and trivialized. He is a former student of Paul Ekman, the behavioral scientist who in the 1970s developed a system of coding facial muscles and determining what their movements really mean.

Although these studies can be traced back to Charles Darwin's descriptions of emotional expressions in our own and other species, they have seldom been given much weight. There is no high seriousness to Keltner's approach, either. He uses a broad range of jokey, playful examples to illustrate an intriguing central thesis: that laughing, blushing, touching, teasing, loving, empathizing and other not-very-scientific-seeming subjects can be methodically analyzed in terms of their importance to our survival. "We are wired for good," he declares.

"Born to Be Good" is the first mainstream book from a writer whose earlier experience has been in textbook and magazine writing. But it's a bright, entertaining book that need not strain for liveliness or charm. It identifies the adaptive benefits of each emotion, thumbs its nose at the hardhearted (Ayn Rand, Machiavelli) and makes its case for the biological functions served by physical expressiveness. There are elements of social science, neuroscience, clinical psychology and cheerleading to Keltner's methods.

The big problem with his approach is contextual: Once this book establishes that touching, for instance, is a physiological way of encouraging cooperative behavior or that embarrassment is a way to deflect combat, it is content to rest there - too content. Beyond arguing that a better understanding of these shared emotions can

lead to a more fulfilling life, Keltner does not connect more dangerous and destructive behaviors to states of bliss. However, he is someone who has spent time with the Dalai Lama, who gives a Zen spin to his maxims and declares the desire to honor this book's insights as well as articulate them. So his readers may need no persuading that living a meaningful life is its own reward.

"Born to Be Good" suggests that while expanding the relatively new field of affective science, Keltner is ready and eager to conduct all manner of experiments. He writes of being offered yearbook photographs from the Mills Longitudinal Study by Ravenna Helson, the Berkeley colleague who began that study more than 40 years ago. Could Keltner use yearbook portraits circa 1960 to analyze facial warmth and predict which graduates were more satisfied with their lives?

Among the challenges posed by that opportunity: How can something as mobile as a smile be assessed in still photographs? Are women with warm smiles treated better than stonier-looking ones? How can beauty be differentiated from kindness? And is the smile more a measure of eagerness to please than of inner contentment? Keltner covers broad, interesting territory on his way to the conclusion that sincere smiling, regard for others, trust, cooperation and kindness can demonstrably enhance our lives.

# Researchers Study Awe and Find It Is Good for Relationships

Studies find the emotion of awe may make people more empathetic, trusting, generous and humble



Polett Villalta scuba diving off Key Largo, Fla., next to the statue Christ of the Abyss, left. PHOTO: VETERANS OCEAN ADVENTURES

By [ELIZABETH BERNSTEIN](#)  
Feb. 23, 2015 1:58 p.m. ET

Polett Villalta says her first deep scuba dive was one of the best experiences of her life. As she descended to 110 feet, a sunken ship slowly became visible in the green-grey water. A turtle swam by.

She and her dive buddies entered the darkness of the ship with a flashlight, and the wreck “came alive,” she says. Colorful coral grew over the submerged steel; parrotfish and angelfish darted in and out of shadows.

She dropped to the sand and touched the bottom of the ocean.

“I can’t describe an experience like that, being part of an element that feels a lot bigger than me,” says Ms. Villalta, a 39-year-old Web developer who lives in Hallandale Beach, Fla., and has been paralyzed from the chest down since she was 12. “It’s like nothing else matters

Want to improve your life? Go do something awesome.

The actual feeling of awe, and experiences that inspire it, benefit us in all sorts of ways, from stronger health to improved relationships, according to several recent studies.

Researchers have found “awe experiences” increase our prosocial behaviors, making us more generous and

more humble. They increase our “empathic accuracy,” so we recognize another person’s emotional expression and respond with concern. And they make us more willing to engage with trust and connect with others.



Polett Villalta, a 39-year-old Web developer, on Hallandale Beach, Fla. Paralyzed from the chest down since the age of 12, she considers her first deep scuba dive to be one of the best experiences of her life. PHOTO: JEFFERY SALTER

Awe is an emotional response to something vast, and it challenges and expands our way of seeing the world. It might be triggered by an encounter with nature, a religious experience, a concert or a political rally or sports event. We’re not likely to find it on a treadmill at the gym.

I heard from people who said they experienced awe at the birth of a child, watching a meteor shower and visiting the Ancient Bristlecone Pine Forest in California. A man said he found it awe-inspiring to work with homeless people and witness their resilience and kindness. My dad said he experienced “nine days of

awe” on a solo kayak trip in Alaska.

People report having three awe experiences a week on average, says Dacher Keltner, director of the Berkeley Social Interaction Lab at the University of California, Berkeley. Dr. Keltner’s lab has been working with the Sierra Club to take 56 inner-city high-school students on a rafting trip and study whether they experience academic benefits. Preliminary findings show that a week after the trip the teens reported being more engaged and curious about what was happening in the world.

Awe experiences may help fight depression, experts theorize. Other research from Dr. Keltner’s lab, published online in the January 2015 journal *Emotion*, indicates awe may help reduce inflammation. Researchers asked 119 undergraduates to rate how often they felt seven positive emotions including awe. Those who reported feeling awe the most had the lowest levels of inflammation markers in their saliva. The study didn’t examine the link between awe and depression, but past studies have found heightened inflammation in people with depression. “I think awe could be a great intervention,” says Jennifer Stellar, lead researcher on the study.

Researchers believe awe is powerful because it takes us out of our own heads. “Awe minimizes our individual identity and attunes us to things bigger than ourselves,” says Paul Piff, assistant professor of psychology at the University of California, Irvine.

I felt awe on a night dive with friends in Miami, our flashlights illuminating an astounding array of colors and creatures as we floated over the reef. I have been diving with Ms. Villalta, and to see her transcend her physical limitations and submerge underwater is awe-inspiring. She dives with buddies—myself included—who are certified to assist disabled people, helping her in and out of the water, holding onto her tank to pull her along and helping her equalize air pressure.

Dr. Piff has found that simply writing about a past awe experience increases kindness and compassion. In two unpublished studies he found awe makes people more generous and more helpful to others. In one study, nearly 300 participants were randomly divided into three groups and watched one of three video clips. A group that watched nature scenes edited to evoke awe tended to agree with statements like “I feel insignificant in the grand scheme of things.”



Polett Villalta, center, dressed as a mermaid to help promote awareness of the Miami charity Veterans Ocean Adventures, which helps veterans and disabled people. With her are veterans Carla Alvarado, left, and Meaghan Gies, right, at Matheson Hammock Park in Miami. PHOTO: VETERANS OCEAN ADVENTURES

The participants were given a test to measure generosity called a dictator task. They were told they would get 10 lottery tickets for a prize drawing and would be assigned a partner who wouldn’t get tickets and didn’t know about the drawing. When asked how many tickets they wanted to give their partners, people in the awe group said they would give away approximately 25% more.

In another study, 90 college students were taken one at a time to visit a stand of tall eucalyptus trees. Half were asked to gaze up at the trees for 60 seconds—a task shown to evoke awe; the other half were asked to stand with their backs to the trees and look at a building. Afterward, a researcher approached each student with a questionnaire and pretended to trip and drop pens on the ground. Dr. Piff’s team measured whether students bent down to pick up pens and, if so, how many. The awe group picked up 10% more pens. The researchers also asked the participants whether they felt entitled to payment; the awe group felt less entitled.

Ms. Villalta says she finds the ocean awe-inspiring. She went snorkeling and free diving a lot as a child. When she was 12, in her native Venezuela, she dove off a friend’s shoulders into the surf and hit the sand head first. She has been in a wheelchair ever since.

Family members used to take her to visit the ocean, bringing her into the water and holding her up in the waves. Then she decided to learn to dive. "Diving charges my batteries to deal with the everyday," she says.

Next month, Ms. Villalta plans to sky dive for the first time. "My mother tells me my wings were clipped when I was a child," she says. "I have managed to make them grow back in some way."





## Guest speaker says simple steps can promote happiness and well-being

March 21, 2016: Feeling stressed? Take a few deep breaths.

Deep breaths activate the body's vagus nerve, which promotes a feeling of calmness, according to a recent Eagle Hill Middle School guest speaker.

"The most important take-away from today is when you're feeling really stressed, take a break and take some deep breaths," said **Dacher Keltner**, director of the **Social Interaction Lab** at the University of California at Berkeley and faculty director of the **Berkeley Greater Good Science Center**.

Dr. Keltner recently spoke in Syracuse as part of **Syracuse University's University Lectures** series. As part of that program, speakers sometimes visit local schools, and on March 8, Dr. Keltner spoke at Eagle Hill Middle School to a combined audience of Eagle Hill and Wellwood Middle School students.

Much of his 60-minute visit focused on the positive benefits of being kind to others and how the feeling of happiness can be physically beneficial. As a scientist of emotions, he used his experience working on the Pixar movie "**Inside Out**" to relate to the students. "Inside Out" is an animated film that details the emotions of an 11-year-old girl who moves to a new town and enrolls in a new school. Her emotions are depicted as individual characters who try to help the main character cope in her new situation.

Dr. Keltner served as a consultant to the film, helping to determine which five emotions to include as characters (anger, disgust, fear, sadness and joy) and provide guidance on how those emotions interact with each other while also determining how a person engages with the outside world.

Many of the Fayetteville-Manlius students asked Dr. Keltner questions about the emotions represented in the movie, why they were selected and how they came to look the way they do in the movie.

The emotion of sadness is one of "Inside Out's" main characters, along with joy. Sadness is an important emotion to experience, Dr. Keltner said.

"Sadness is OK," he told the auditorium filled with students. "You need sadness to have happiness."

And feeling happy is generally associated with fewer health symptoms and longer life expectancy, Dr. Keltner said.

Reaching out to students, particularly those in middle school, is important because as children enter adolescence, they grapple with a wide range of emotions, he said. There are simple steps people can take to promote feelings of happiness and improve their well-being, including being grateful for the things, people and experiences in their lives, going outdoors and being kind to others.



*Dr. Dacher Keltner speaks to Eagle Hill and Wellwood middle school students about emotions.*

# SIERRA

## THE SCIENCE OF AWE

Can psychologists chart what happens when nature blows your mind?

BY JAKE ABRAHAMSON



Cedar Wright enjoy a view of the long way down, moments after getting the first ascent of the Virgin Tower in Enshi Grand Canyon National Park, China. | Photo by Keith Ladzinski

A FEW YEARS AGO, I RAN Utah's Green River with a group of 13-year-olds. Our first day was a grueling, 26-mile slog through mostly flat water, with a few Class I and II rapids as our prize. I knew the real reward would come when we entered the most majestic part of Desolation Canyon in a couple of days, but they wouldn't take my word for it. They were slouched in their boats asking, "Why are we doing this?"

That evening a thunderstorm rolled into the river valley, and we spent an hour in our tents. It was one of the most intense and otherworldly storms I'd ever seen. When thunder struck, it felt like my body was inside God's clap, and the lightning galvanized the entire sky. Eventually the sky cleared. I stepped out of my tent as if exiting a bomb shelter, with a distinct feeling that the world would be different. The kids seemed to emerge from their tents at the exact same instant. The air was heavy and hot, the sky a color I

had never imagined—gold from the land to the firmament. Time slowed. The mountains, the people, and the river flowing through it all seemed held together by an intelligent pattern.

The frustration of the day's paddle was wiped away. I felt benevolent and open toward the kids. Making dinner was easy. The storm had pulled us together.

Looking back, I was puzzled by the experience. What had happened to me during that thunderstorm? I know humans don't move in unison accidentally, so why did I think we'd emerged from our tents in perfect sync? I'm not a spiritual person, or a gushy one, so what caused this quasi-religious feeling that the mountains, people, and river were hanging together in ethereal balance?

I am both thrilled and dispirited to report that science has answered these questions.

Scientifically speaking, the storm brought me into a state of awe, an emotion that, psychologists are coming to understand, can have profoundly positive effects on people. It happens when people encounter a vast and unexpected stimulus, something that makes them feel small and forces them to revise their mental models of what's possible in the world. In its wake, people act more generously and ethically, think more critically when encountering persuasive stimuli, like arguments or advertisements, and often feel a deeper connection to others and the world in general. Awe prompts people to redirect concern away from the self and toward everything else. And about three-quarters of the time, it's elicited by nature.

IT WAS ONLY 11 YEARS AGO that psychologists Dacher Keltner of the University of California, Berkeley, and Jonathan Haidt, then at the University of Virginia, proposed awe as an emotion worth studying. "In the upper reaches of pleasure and on the boundary of fear," they wrote in the journal *Cognition and Emotion* in 2003, "awe is felt about diverse events and objects, from waterfalls to childbirth to scenes of devastation. . . . Fleeting and rare, experiences of awe can change the course of a life in profound and permanent ways."

Over twenty studies later, the picture of awe is clearer and more detailed. "In various studies we've asked people, 'What's running through your mind when you feel awe?'" Keltner said, "and they'll say things like 'I want to make the world better,' or 'I just feel like being quiet,' or 'I feel like purifying things.' It makes you humble. It makes you curious about the world." To awe, Keltner attributes both the faith of Krishna, who, according to myth, on being shown the secrets of the universe through a third eye, was suddenly ready to do God's work; and the desire of John Muir to protect the environment, which was brought about by his life-altering experiences in the Sierra. Throughout his writings, Muir described quintessential awe experiences. Take this moment, when he feels pleurably energized by the massive and threatening Mt. Hood: "There stood Mount Hood in all the glory of the alpenglow, looming immensely high, beaming with intelligence, and so impressive that one was overawed as if suddenly brought before some superior being newly arrived from the sky."

Not surprisingly, such experiences are tough to replicate in a laboratory setting. To elicit and study awe, Keltner and his peers instead rely on mind-bending videos, quick exposures to nature amid urbanized landscapes, or vast and disorienting stimuli. In an early study, participants were asked to stare at a replica of a *T. rex* skeleton. These techniques work. Psychologists can show certain awe-inducing videos to a test group and then ask questions about how cognition, other emotions, and self-concept are affected by the experience.

However, Keltner, a tan Californian with sandy, shoulder-length hair and a wholesome smile—who cites hiking in the High Sierra, meeting the Dalai Lama, and the births of his daughters as among the greatest

awe events in his life—thinks scientists can gain a new perspective on the emotion if they move away from amazing-video, dinosaur-skeleton awe. To conduct what Keltner believes will be the first study to measure the long-term, physical health benefits of awe, he and a team of grad students are moving the laboratory into the woods.

“The science of emotion gets really exciting when you get as close to the phenomenon as possible,” Keltner told me. “We want to engage with people and observe them when they’re really out there on the river or lying under the stars.”

WHICH IS WHY I FIND MYSELF pulling into an eddy on California’s American River with a boatload of students from Oakland High School and their environmental science teacher and guide, Kevin Jordan. A hundred yards ahead, the water drops at a commotion of river and rocks called Troublemaker. It churns with whitewater and white noise. The kids wait calmly as Jordan wrangles the other boats before we make the plunge. This is just one of seven Sierra Club Inspiring Connections Outdoors trips during which Keltner’s awe study will take place.

One of the boats holds Craig Anderson, a trim, towering doctoral student who studies with Keltner. He wears a vintage Seattle Mariners cap with a GoPro camera mounted on top, which he uses to tape the kids’ interactions on the rafts before, during, and after rapids. “We can analyze people’s facial expressions muscle by muscle,” he told me earlier. “We can run the vocals through a program. Are people kidding around? Are they calm? Are they working as a team?”

Anderson and Keltner want to study the effect a two-day rafting trip will have on people’s lives, and they suspect that awe will play a major role in the story their data have to tell. Yesterday, the 25-odd students spat into vials and answered survey questions about how often they felt happy, sad, or stressed and how well they’ve been sleeping. They will spit into other vials when the trip ends and fill out similar surveys a month from now. The saliva samples will show how awe correlates with levels of stress hormones and the genes related to dopamine function.

About five miles upriver, the Chile Bar dam has closed its gates, and now what’s left of the river is literally flowing by beneath us. Jordan points to a black band on a boulder. “That rock’s already got three inches of wet. We’ll be carrying our rafts if we don’t ride this faucet.” He calls, “All forward,” and we charge toward Troublemaker.

For a few seconds, we lose ourselves. The drop sucks us into a vortex of froth. A wave plops over the starboard gunwale. And then we shoot out, bow slapping the surface, everyone gasping and soaked. A black granite fin rises up ahead. We fly around a bend into shade, and the water fades from emerald to black. Then it calms and deepens. The kids are all gasping, or smiling, or both. Jordan lets everyone in his boat jump into the water.

Jordan’s been taking his high school students on outings for over a decade. They’ve been to Hawaii and kayaked off Catalina Island, but the rivers of central California are his natural habitat. He wants to take the kids on a snow trip to see where the rivers begin, and “so they remember that there was snow in the Sierra Nevada.” I ask who of the floaters has seen snow, and half of them shoot up their hands.

Jordan stands, gets his balance, and peers downriver—a mariner in a crow’s nest. A kid bobs near the bow. The bands on the boulders are growing. “Get that road kill in the boat,” he says. “We gotta get down this river before the water runs out.”

"WHAT'S COOL ABOUT AWE is that it literally blows your mind," Anderson says, referring to how its stimuli force people to revise their mental frames of reference. We are sitting on the bank watching night come over the canyon. Since we set up camp an hour ago, the beach has grown by 15 feet. The river is at "fish flows," the minimum level for sustaining life.

"We might do some analyses by raft. We know emotions are contagious. If there was one really awe-prone person, did that make other people feel awe? You might have noticed that in the swimming sections, in one raft, everyone was in the water, and in another, nobody was in the water."

For much of the night, Anderson can be found sitting on the beach, knees to chest, contemplative, eyes fixed riverward. He grew up an Eagle Scout in New Mexico. As a young child, he loved watching Star Trek and pondering the show's moral dilemmas, and he's still taken by the unfathomable depths of the universe. "I've always been into space, thinking about how vast it is. Even now, the hairs are raising on my neck just talking about it." (Piloerection is a telltale accompaniment to awe.) His favorite awe-eliciting videos are the opening to the movie Contact and a three-minute clip that begins on Earth's surface and gradually zooms out to one of the largest known stars in the universe, beside which our planet appears as a mere pixel. He says that he doesn't often use segments from Planet Earth or other nature documentaries for research because viewers feel intense compassion for the animals, which muddies the results.

Before the light disappears completely, Anderson gets up to distribute paper and pens to the students, who are keeping journals as part of the study.

Today we experienced the little beauties of nature, one writes. I was able to be me and learn about the things around me.

My favorite rapid was Triple Threat. It was scary but fun at the same time, writes another.

The most amazing experience I had on this trip was meeting new people, learning new things about others, and experiencing the events with everyone. Meeting new people lets me see the different kinds of personality of each person and adds spice to life, journals a third student.

I ask Anderson if he thinks feeling awe in nature will make these kids care more about the river that's trickling by through the dark.

"Generally speaking, yes. They say they feel more connected, not just to people but to the world around them. When you're having your mind blown like this, people's self-concerns really aren't at the front of their minds. All your attention is directed outward, toward the thing that's eliciting awe, on the outside environment, and on others around you. Also, they're saying they're appreciating the beauty of their surroundings, and if you're appreciating the beauty of something, you want to take care of it. You don't want to see it ruined."

The next morning, we have to wait for the water. Jordan sits on a boat for hours, watching as birds putter about in the littoral zone. He sees eight species in the first 10 minutes. They pick bugs out of the mud. The dam's daily releases determine this ecosystem's rhythms.

Around 11:30, the river finally shows up, and Jordan calls the kids into a circle. "Let's go, young scholars! The faucet is on!" His solemn reverence for the river is contagious. The sun peeks over the hills, bringing the temperature up by about 20 degrees.

"We're going through a really important transition today," Jordan says. He paces in place as he speaks, his head down as he gathers his thoughts, then he lifts his chin to project. "You'll see that when we enter the reservoir, the biodiversity disappears. It's like the reservoir in Oakland."

For a while, we ride amid pale yellow, dried-out hills, with a few oak trees at the tops. "It takes a lot to live up there," Jordan says to the kids in our boat. We pound through one rapid after another. Then he brings us into the gorge. The walls rise up and close in, and suddenly everything is greener, even the water, which intermittently bubbles and froths in emerald whirlpools. We spill into Satan's Cesspool, bounce through Bouncing Rock. I recall a possible explanation that Keltner casually proposed for why, when people are asked to recall awe-inspiring experiences, they so often cite nature. It is Edward O. Wilson's biophilia hypothesis: the idea that humans are instinctively fond of living systems and see life-giving power in vigorous water or dense greenery. At some evolutionary level, we think the river looks better at high flow, when the dam allows it through.

That afternoon we emerge into civilization. People are crouched on boulders, panning for gold. A family is sitting in the river on beach chairs. The water is up to their chests. It seems as if they're waiting for the river to burst through the dam and carry them away.

We take out at a place called Salmon Falls. But there are no falls or salmon. Not anymore. The namesake hydraulics were inundated by the backup behind Folsom Dam in 1955, along with the salmon's historic spawning route. Now they stop below the dam, where they're corralled and turned into food. The ecosystem is all but post-natural: lifeless dirt and concrete detritus.

With his call of "young scholars," Jordan gathers everyone into a circle for one last elegy. "Here we are at Salmon Falls. I'm glad it's named that. We're reminded of the salmon that used to migrate up this river into the Sierra Nevada. Now we've got a 100-foot dam and a 300-foot dam, and all the salmon are stuck down by Sac State, where we did the tour the other day."

Jordan is saddened by the way the ecosystem has changed. He cares about the mergansers and red robins and the native weeds being run out by invasive weeds, the thoughtless fish swimming upriver by instinct. He would not be a good subject for an awe study. Too prone toward compassion. The T. rex skeleton would probably make him sad for the dinosaurs.

The kids each say a word to represent the hardest part of the trip and the best part of the trip. For the hardest, they say, pancakes, burning, backstroke, pans, sleeping, rocks, cuticles, revenge, current, flatwater. For the best: teamwork, carnage, stargazing, water, native, swimming, backpaddle, fun, community. Then Anderson distributes vials for the kids to spit in, and everyone returns to the city.



All Things Considered

# As We Become Richer, Do We Become Stingier?

by SHANKAR VEDANTAM

September 03, 2013 3:00 PM ET



The poor tend to value social connections, psychologists say. But as people become wealthy, they need one another less and — according to some scientists — make fewer connections. [Images.com/Corbis](#)

Patricia Greenfield has tracked families in Chiapas, Mexico, over four decades. Many were very poor when she started her study. Slowly, over time, they grew wealthier.

Along the way, Greenfield noticed something: As the people she followed grew richer, they became more individualistic. Community ties frayed and weakened.

Greenfield expanded her findings to form a more general theory about the effects that wealth has on people: "We become more individualistic, less family and community oriented."

In a new study, the UCLA researcher makes the argument that the same thing has happened in the U.S. over a longer period.

Greenfield bases her finding on an analysis she conducted of more than 1 million books published in the U.S. between 1800 and 2000. Greenfield used the Google Ngram viewer, a tool that allows rapid keyword searches of the frequency of words in the books.

As the country grew wealthy over that 200-year period, Greenfield found, some words became more likely to be used in books, while other words became less frequent.

"The frequency of the word 'get' went up, and the frequency of the word 'give' went down," she said.

The words Americans used to describe themselves changed, too.

"Words that would show an individualistic orientation became more frequent. Examples of those words were 'individual,' 'self,' 'unique,' " she said. "Words that would represent a more communal or more family orientation went down in frequency. Some examples of those words are 'give,' 'obliged,' 'belong.' "

Greenfield's findings and theories dovetail with a variety of other studies and research projects, including Robert Putnam's 2000 book, *Bowling Alone*, which explores the decline in community relationships in the U.S.

Dacher Keltner, a professor of psychology at the University of California, Berkeley, said his own life reflected the changes Greenfield and Putnam observe.

Keltner went from growing up poor in rural California to a successful career at a prominent university: "I saw open doors and barbecues in the backyard and kids playing all night," he said in an interview, about his childhood. "And also the tougher side of husbands out of work and drinking too much and, you know, the health issues that go with impoverished circumstances."

As Keltner carved out a busy professional life, his material concerns went away. But something else happened. Those open doors and endless backyard parties? They started to disappear from his life, too.

Keltner felt something inside him change, something about the way he related to others.

"I saw it personally — I feel it in myself," he said. "That somehow, when I am thinking hard about making more money and rising in wealth and enjoying materialistic benefits, I do feel personally that I am not as responsive to the needs of others."

Keltner has explored this paradox in his experiments: Social class ought to predict generosity in a straightforward manner. The rich have more, which means they have less to lose by giving away some of what they have. But that is not what Keltner's experiments find.

"In just about every way you can study it, our lower-class individuals volunteer more, they give more of their resources — they're more generous," he said.

Keltner is not claiming the poor give more than the rich in absolute terms. Wealthy philanthropists give away millions of dollars.

But Keltner thinks that's not the best way to measure generosity. A thousand dollars from a billionaire doesn't mean the same thing as \$100 from someone living on the poverty line.

Keltner cites a study conducted by Independent Sector, a network of nonprofit groups that measured how much people give depending on how much they have: "The poor, say with family incomes below \$30,000 and \$25,000, are giving about 4.2 percent of their wealth away, whereas the wealthy are giving away 2.7 percent."



A variety of other research studies have found that religious people are more likely than secular people to be generous; nearly all religions preach the virtues of social interconnectedness. Keltner says the relationship between social class and generosity is likely amplified by religious belief, but is also independently true.

Keltner and Greenfield, working independently, have both concluded that the poor tend to value social connections because social connections are integral to survival when you can't make your way on your own.

"The wife may make the clothes for the whole family," Greenfield said of the families she tracked in the early part of her research in Mexico. "The husband grows food and builds the shelter for the whole family. Therefore giving, social obligation, belonging to a family are very important."

But slowly, as people become wealthy, they need one another less, and so they make fewer connections. Autonomy and freedom become more important than responsibility and obligation.

Greenfield points out that one "silver lining" of the recent recession in the U.S. is that community ties appeared to strengthen as the economy buckled.

Neither Keltner nor Greenfield is offering a screed against wealth. As America has become richer, lots of good things have happened. Disease has declined. Education has improved. Women and minorities have gotten more equal treatment.

But it has come at a price.

"As we rise in wealth, along with that rise in wealth comes ideas of individuality and self-expression and autonomy and freedom — and loneliness," Keltner said.

Keltner said being wealthy does not inevitably mean isolation. But it probably does mean that the bonds of connection that came easily to us 200 years ago might now need to be carefully — and deliberately — cultivated.

# The Power of Kindness

*Real clout comes from being empathetic, cooperative, and communicative*

by **Dacher Keltner**, from *Greater Good*

May-June 2008

“It is much safer to be feared than loved,” writes Niccolò Machiavelli in *The Prince*, a classic 16th-century treatise advocating manipulation and occasional cruelty as the best means to power. Nearly 500 years later, Robert Greene’s *The 48 Laws of Power*, the best-selling bedside reading of foreign policy analysts and hip-hop stars alike, would have made Machiavelli’s chest swell with pride.

Here are a few of the laws:

Law 12, Use Selective Honesty and Generosity to Disarm Your Victim.

Law 15, Crush Your Enemy Totally.

Law 18, Keep Others in Suspended Terror: Cultivate an Air of Unpredictability.

You get the picture.

Guided by centuries of advice like Machiavelli’s and Greene’s, we tend to believe that attaining power requires force, deception, manipulation, and coercion. We might even assume that society demands this kind of conduct to run smoothly.

These seductive notions are wrong. A new science of power has revealed that power is wielded most effectively when it’s used by people who are attuned to and engaged with the needs and interests of others. When it comes to power, social intelligence—reconciling conflicts, negotiating, smoothing over group tensions—prevails over social Darwinism.

Why social intelligence? Because of our ultrasociability. We accomplish most tasks related to survival and reproduction socially, from caring for our children to producing food and shelter. We give power to those who can best serve the interests of the group. Leaders who treat their subordinates with respect, share power, and generate a sense of camaraderie and trust are considered more just and fair.

Social intelligence is essential not only to rising to power, but also to keeping it. My colleague Cameron Anderson and I studied the structure of social hierarchies within college dormitories over the course of a year, examining who is at the top and who remains there. We’ve consistently found that it is the socially engaged individuals who keep their power over time.

What is the fate of Machiavellian group members? In our research on different groups, we have asked group members to talk openly about other members’ reputations. We’ve found that Machiavellians quickly acquire reputations as individuals who act in ways that are inimical to the interests of others, and these reputations act like a glass ceiling preventing their rise in power. This aspect of their behavior affected their reputations even



*image by Nick Craine*

more than their sexual morality, their recreational habits, or their willingness to abide by group social conventions.

They also mistakenly believe that power is acquired strategically in deceptive gamesmanship and by pitting others against one another. Here Machiavelli failed to appreciate an important fact in the evolution of human hierarchies: that with increasing social intelligence, a person's power is only as strong as the status given to that person by others.

In *The Prince*, Machiavelli observes, "A prince ought, above all things, always endeavor in every action to gain for himself the reputation of being a great and remarkable man." By contrast, several Eastern traditions, such as Taoism and Confucianism, exalt the modest leader, one who engages with followers and practices social intelligence. In the words of the Taoist philosopher Lao-tzu, "To lead the people, walk behind them." Science gives the nod to Lao-tzu.

"Power tends to corrupt; absolute power corrupts absolutely," said the British historian Lord Acton. A great deal of research—especially from social psychology—lends support to Acton's claim, albeit with a twist: Power leads people to act in impulsive fashion, both good and bad, and to fail to understand other people's feelings and desires.

For instance, studies have found that people given power in experiments are more likely than those without power to rely on stereotypes when they are judging others. Predisposed to stereotype, they also judge others' attitudes, interests, and needs less accurately. Power imbalances may even help explain the finding that older siblings don't perform as well as their younger siblings on theory-of-mind tasks, which assess one's ability to construe the intentions and beliefs of others.

When researchers give people power in scientific experiments, those people are more likely to physically touch others in potentially inappropriate ways, to flirt more directly, to make risky choices, to make first offers in negotiations, to speak their mind, and to eat cookies like the Cookie Monster, with crumbs all over their chins and chests.

Perhaps more unsettling is the wealth of evidence that having power makes people more likely to act like sociopaths. High-power individuals are more likely to interrupt others, speak out of turn, and fail to look at others who are speaking. They are also more likely to tease friends and colleagues in hostile, humiliating ways. Surveys of organizations find that most rude behaviors—shouting, profanities, bald critiques—emanate from the offices and cubicles of individuals in positions of power.

My own research has found that people with power tend to behave like patients who have damaged their brain's orbitofrontal cortex (the region of the frontal lobe right above and behind the eye sockets), a condition that seems to cause overly impulsive and insensitive behavior. Thus the experience of power might be thought of as having someone open up your skull and take out that part of your brain so critical to empathy and socially appropriate behavior.

This leaves us with a power paradox. Power is given to those individuals, groups, or nations who advance the interests of the greater good in socially intelligent fashion. Yet, having power renders many individuals as poorly attuned to others as your garden-variety frontal lobe patient. What people want from leaders—social intelligence—is what is damaged by the experience of power.

Social behaviors are dictated by social expectations. When we recognize this paradox and all the destructive behaviors that flow from it, we can appreciate the importance of promoting a more socially intelligent model of

power. As a result, we'll have much less tolerance for people who lead by deception, coercion, or undue force. We'll also start to demand something more from our colleagues, our neighbors, and ourselves.

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## Forget Survival of the Fittest: It Is Kindness That Counts

A psychologist probes how altruism, Darwinism and neurobiology mean that we can succeed by *not* being cutthroat.

*Why do people do good things? Is kindness hard-wired into the brain, or does this tendency arise via experience? Or is goodness some combination of nature and nurture?*

*Dacher Keltner, director of the Berkeley Social Interaction Laboratory, investigates these questions from multiple angles, and often generates results that are both surprising and challenging. In his new book, **Born to Be Good: The Science of a Meaningful Life**, Keltner weaves together scientific findings with personal narrative to uncover the innate power of human emotion to connect people with each other, which he argues is the path to living the good life. Keltner was kind enough to take some time out to discuss altruism, Darwinism, neurobiology and practical applications of his findings with David DiSalvo.*



**DISALVO:** You have a book that was just released called *Born to Be Good: The Science of a Meaningful Life*. What in a nutshell does the term “born to be good” mean to you, and what are you hoping people learn from reading the book?

**KELTNER:** “Born to be good” for me means that our mammalian and hominid evolution have crafted a species—us—with remarkable tendencies toward kindness, play, generosity, reverence and self-sacrifice, which are vital to the classic tasks of evolution—survival, gene replication and smooth functioning groups. These tendencies are felt in the wonderful realm of emotion—emotions such as compassion, gratitude, awe, embarrassment and mirth. These emotions were of interest to Darwin, and Darwin-inspired studies have revealed that our capacity for caring, for play, for reverence and modesty are built into our brains, bodies, genes and social practices. My hopes for potential readers are numerous. I hope they learn about the remarkable wisdom of Darwin and the wonders of the study of emotion. I hope they come to look at human nature in a new light, one that is more hopeful and sanguine. I hope they may see the profoundly cooperative nature of much of our daily social living.

**DISALVO:** You’ve said that one of the inspirations for your work was Charles Darwin’s insights into human goodness. Because most people equate his name with “survival of the fittest,” it’ll probably be surprising to many that Darwin focused on goodness at all. What were a few of your take aways from Darwin’s work that

really inspired you?

KELTNER: What an important question. We so often assume both in the scientific community, and in our culture at large, that Darwin thought humans were violent and competitive and self-interested in their natural state. That is a misrepresentation of what Darwin actually believed, and where the evolutionary study of human goodness is going.

My take aways from Darwin are twofold, and as you suggest above, I was surprised as well in arriving at an understanding of Darwin's view of human nature. The first take away is found in *Descent of Man*, where Darwin argues that we are a profoundly social and caring species. This idea is reflected in the two quotes below, where Darwin argues that our tendencies toward sympathy are instinctual and evolved (and not some cultural construct as so many have assumed), and even stronger (or perhaps more ethical—see his observation about the “timid man” below) than the instinct for self-preservation:

“For firstly, the social instincts lead an animal to take pleasure in the society of his fellows, to feel a certain amount of sympathy with them, and to perform various services for them. ... Such actions as the above appear to be the simple result of the greater strength of the social or maternal instincts than that of any other instinct or motive; for they are performed too instantaneously for reflection, or for pleasure or even misery might be felt. In a timid man, on the other hand, the instinct of self-preservation might be so strong, that he would be unable to force himself to run any such risk, perhaps not even for his own child.”

The second take away comes from close study of Darwin's *Expression of Emotion in Man and Animals*, published one year after *Descent of Man*. There, Darwin details descriptions of emotions such as reverence, love, tenderness, laughter, embarrassment and the conceptual tools to document the evolutionary origins of these emotions. That led me to my own work on the physiology and display of these remarkable emotions, and to the science-based conclusion that these emotions lie at the core of our capacities for virtue and cooperation.

DISALVO: You recently wrote an article with the provocative title “In Defense of Teasing.” Because we're ostensibly a society set against teasing in any form (school, workplace, and so on), what do you think teasing has to offer that we might be missing?

KELTNER: Teasing is the art of playful provocation, of using our playful voices and bodies to provoke others to avoid inappropriate behaviors. Marc Bekoff, a biologist at the University of Colorado, Boulder, has found in remarkable work with coyotes that they sort out leaders from aggressive types in their rough-and-tumble biting. The coyotes that bite too hard in such provocative play are relegated to low status positions. We likewise accomplish so much with the right kind of teasing.

Teasing (in the right way, which is what most people do) offers so much. It is a way to play and express affection. It is a way of negotiating conflicts at work and in the family. Teasing exchanges teach children how to use their voices in innumerable ways—such an important medium of communication. In teasing, children learn boundaries between harm and play. And children learn empathy in teasing, and how to appreciate others' feelings (for example, in going too far). And in teasing we have fun. All of this benefit is accomplished in this remarkable modality of play.

DISALVO: Your team at U.C. Berkley has done a lot of interesting research on the vagus nerve and its association with altruistic feelings. Tell us a bit about this research and its implications for better understanding the nature of altruism.

KELTNER: The vagus nerve is part of the parasympathetic autonomic nervous system. It is a bundle of nerves that originates in the top of the spinal cord, it activates different organs throughout the body (heart, lungs,

liver, digestive organs). When active, it is likely to produce that feeling of warm expansion in the chest, for example when we are moved by someone's goodness or when we appreciate a beautiful piece of music. University of Illinois, Chicago, psychiatrist Steve Porges long ago argued that the vagus nerve is a care-taking organ in the body (of course, it serves many other functions as well). Several reasons justify this claim. The vagus nerve is thought to stimulate certain muscles in the vocal chamber, enabling communication. It reduces heart rate. Very new science suggests that it may be closely connected to oxytocin receptor networks. And it is unique to mammals.

Our research and that of other scientists suggests that the vagus nerve may be a physiological system that supports caretaking and altruism. We have found that activation of the vagus nerve is associated with feelings of compassion and the ethical intuition that humans from different social groups (even adversarial ones) share a common humanity. People who have high vagus nerve activation in a resting state, we have found, are prone to feeling emotions that promote altruism—compassion, gratitude, love, happiness. Arizona State University psychologist Nancy Eisenberg has found that children with elevated vagal tone (high baseline vagus nerve activity) are more cooperative and likely to give. This area of study is the beginning of a fascinating new argument about altruism—that a branch of our nervous system evolved to support such behavior.

DISALVO: Oftentimes we learn about intriguing academic work being done on emotions, morality and related areas, but are left asking, "OK, but how do we do any of this? Is there anything we can make actual use of here?" Looking down the road, what do you want the impact of your work to be out in the world?

KELTNER: I have always felt that our science is only as good as the truthful rendition of reality that it provides and the good that it brings to our species. In summarizing the new science of emotion in *Born To Be Good*, I was struck by how useful this science is. The ancient approaches to ethics and virtue—for example, found in Aristotle or Confucius—privileged things such as compassion, gratitude and reverence. A new science of virtue and morality is suggesting that our capacities for virtue and cooperation and our moral sense are old in evolutionary terms, and found in emotions that I write about in *Born To Be Good*.

And a new science of happiness is finding that these emotions can be readily cultivated in familiar ways, bringing out the good in others and in oneself. Here are some recent empirical examples:

Meditating on a compassionate approach to others shifts resting brain activation to the left hemisphere, a region associated with happiness, and boosts immune functions.

Talking about areas of gratitude, in classrooms, at the dinner table or in the diary, boosts happiness and social well-being and health.

Experiences of reverence in nature or around morally inspiring others improves people's sense of connection to others and sense of purpose.

Laughing and playing in the face of trauma gives the person perspective upon life's inevitable difficulties, and improves resilience and adjustment.

Devoting resources to others, rather than indulging a materialist desire, brings about lasting well being.

This kind of science gives me many hopes for the future. At the broadest level, I hope that our culture shifts from a consumption-based, materialist culture to one that privileges the social joys (play, caring, touch, mirth) that are our older (in the evolutionary sense) sources of the good life. In more specific terms, I see this new science informing practices in almost every realm of life. Here again are some well-founded examples. Medical doctors are now receiving training in the tools of compassion—empathetic listening, warm touch—that almost

certainly improve basic health outcomes. Teachers now regularly teach the tools of empathy and respect. Executives are learning the wisdom around the country of emotional intelligence—respect, building trust—that there is more to a company’s thriving than profit or the bottom line. In prisons and juvenile detention centers, meditation is being taught.

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## In Defense of Teasing

By DACHER KELTNER  
Published: December 5, 2008

A FEW YEARS AGO my daughters and I were searching for sand crabs on a white-sand beach near Monterey. A group of sixth graders descended on us, clad in the blue trousers and pressed white shirts of their parochial school. Once lost in the sounds of the surf, away from their teacher's gaze, they called one another by nicknames and mocked the way one laughed, another walked. Noogies and rib pokes, headlocks and bear hugs caught the unsuspecting off guard. Two boys dangled a girl over the waves. Three girls tugged a boy's sagging pants down. Dog piles broke out. In a surprise attack, one girl nearly dropped a dead crab down a boy's pants.



Nick Dewar

As they departed in sex-segregated lines, my daughters stood transfixed. Serafina asked me, "Why did that girl try to put the crab in the boy's pants?" "Because she likes him," I responded. This was an explanation Serafina and her older sister, Natalie, only partly understood. What I witnessed might be called "the teasing gap."

Today teasing has been all but banished from the lives of many children. In recent years, high-profile school shootings and teenage suicides have inspired a wave of "zero tolerance" movements in our schools. Accused teasers are now made to utter their teases in front of the class, under the stern eye of teachers. Children are given detention for sarcastic comments on the playground. Schools are decreed "teasing free."

And we are phasing out teasing in many other corners of social life as well. Sexual-harassment courses advise work colleagues not to tease or joke. Marriage counselors encourage direct criticism over playful provocation. No-taunting rules have even arisen in the N.B.A. and the N.F.L. to discourage "trash talking."

The reason teasing is viewed as inherently damaging is that it is too often confused with bullying. But bullying is something different; it's aggression, pure and simple. Bullies steal, punch, kick, harass and humiliate. Sexual harassers grope, leer and make crude, often threatening passes. They're pretty ineffectual flirts. By contrast, teasing is a mode of play, no doubt with a sharp edge, in which we provoke to negotiate life's ambiguities and conflicts. And it is essential to making us fully human.

The centrality of teasing in our social evolution is suggested by just how pervasive teasing is in the animal world. Younger monkeys pull the tails of older monkeys. African hunting dogs jump all over one another, much like pad-slapping, joking football players moments before kickoff. In every corner of the world, human adults

play peekaboo games to stir a sulking child, children (as early as age 1) mimic nearby adults and teenagers prod one another to gauge romantic interest. In rejecting teasing, we may be losing something vital and necessary to our identity as the most playful of species.

## THE LANGUAGE OF TEASING

A few hundred years ago, teasing was anything but taboo. Jesters and fools enjoyed high status. With their sharp-tongued mockery, outlandish garb and entertaining pranks, they highlighted the absurdities of all that was held sacred, from newborns and newlyweds to kings, queens and leaders of the church. In the tradition of the jester or the fool lies the essence of what a tease is — a playfully provocative mode of commentary.

But attempts to define the nature of that commentary can be difficult, not least because language itself gets in the way. We may use “teasing” to refer to the affectionate banter of middle-school friends, to the offensive passes of impulsive bosses and to the language of heart-palpitating flirtation, to humiliation that scars psyches (harsh teasing about obesity can damage a child’s sense of self for years) and to the repartee that creates a peaceful space between siblings. It is necessary to look at how we use language — especially at how we deliver our spoken words — to get at what teasing actually is.

The answer can be found, paradoxically, in a classic study of politeness by Penelope Brown, a linguistics anthropologist, and Stephen Levinson, a cognitive anthropologist, which differentiates between “on-record” communication” and “off-record” communication. On-record communication is to be taken literally and follows the rules of what the philosopher Paul Grice described as “cooperative, direct speech”: what is said should be truthful, appropriately informative, on topic and clear. When doctors deliver prognoses about terminal illnesses or financial advisers announce the loss of family fortunes, they adhere to these rules like priests following Scripture.

Very often, though, we do not want our words to be taken too literally. When we speak in ways that risk offense, for example when we criticize a friend, we may add intentional vagueness or unnecessary circumlocutions. Say a friend proves to be too confrontational at a dinner party. To encourage greater civility, we might resort to indirect hints (“Say, did you read the latest by the Dalai Lama?”) or metaphor (“I guess sometimes you just need to blow off some steam”). These linguistic acts establish a new channel of communication — off-record communication — signaling that what is being said has an alternate meaning.

Teasing is just such an act of off-record communication: provocative commentary is shrouded in linguistic acts called “off-record markers” that suggest the commentary should not be taken literally. At the same time, teasing isn’t just goofing around. We tease to test bonds, and also to create them. To make it clear when we’re teasing, we use fleeting linguistic acts like alliteration, repetition, rhyming and, above all, exaggeration to signal that we don’t mean precisely what we’re saying. (“Playing the dozens,” a kind of ritualized teasing common in the inner city that is considered a precursor to rap, involves just this sort of rhyming: “Don’t talk about my mother ’cause you’ll make me mad/Don’t forget how many your mother had.”) We also often indicate we are teasing by going off-record with nonverbal gestures: elongated vowels and exaggerated pitch, mock expressions

and the iconic wink, well-timed laughs and expressive caricatures. A whiny friend might be teased with a high-pitched imitation or a daughter might mock her obtuse father by mimicking his low-pitched voice. Preteens, sharp-tongued jesters that they are, tease their parents with exaggerated facial expressions of anger, disgust or fear, to satirize their guardians' outdated moral indignation. Similarly, deadpan deliveries and asymmetrically raised eyebrows (Stephen Colbert), satirical smiles and edgy laughs (Jon Stewart) all signal that we don't entirely mean what we say.

## THE BENEFITS OF TEASING

The language of teasing is intimately linked to the language of social behavior. Because teasing allows us to send messages in indirect, masked ways, it is an essential means of navigating our often-fraught social environments. In teasing, we become actors, taking on playful identities to manage the inevitable conflicts of living in social groups.

Placed into groups, children as young as 2 will soon form a hierarchy — it will be clear even among toddlers who is in charge and who is not. Hierarchies have many benefits — the smooth division of labor and resources, protecting weaker members of the group — but they can be deadly to negotiate. Male fig wasps chop their rivals in half with their large mandibles. Narwhal males loll about with tusk tips embedded in their jaws — vestiges of their status contests. Coyotes engage in heavily coded bouts of play; those who don't live shorter, ostracized lives.

Given the perils of negotiating rank, many species have evolved dramatized status contests, relying on symbolic displays of physical size and force to peacefully sort out who's on top. Stags roar. Frogs croak. Chimps throw branches around. Hippos open their jaws as wide as possible to impress competitors.

And humans tease. Teasing can be thought of as a status contest with a twist. As humans evolved the ability to form complex alliances, the power of a single individual came increasingly to depend on the ability to build strong bonds. Power became a matter of social intelligence (the good of the group) rather than of survival of the fittest (raw strength). As a status contest, teasing must walk a fine line, designating status while enhancing social connection.

Take nicknames. One of the most common forms of teasing, they also serve to assign status and enhance or create social bonds. They commonly emerge in marriages, between friends, among co-workers and between the public and its leaders. Artful nicknames involve such off-record markers as exaggeration, alliteration and metaphor, which comment upon the individual's excesses. Muhammad Ali was the Louisville Lip; Richard Nixon, Tricky Dick; and George W. Bush, Uncurious George. During my fifth-grade trip to the Mendocino tide pools, I became Dacher Kelp Crab to all, a fitting riff on my name, our coastal locale and my sullen temperament. Nicknames are relationship-specific placeholders. They allow us to escape to the world of play, where we mock in affectionate fashion and critique the powerful in safety.

To examine the role nicknames play in helping a community to function, Erin Heerey, now a professor at Bangor University in Wales, and I invited members of a University of Wisconsin fraternity to the laboratory one

October, just after what is known as rush week, when pledges angle to gain acceptance at the frat of their choice. We divided the fraternity brothers into groups of four — two high-status “actives,” or established members of the group, and two new low-status “pledges.” We gave each participant two randomly generated initials — “A. D.” or “T. J.” or “H. F.” or “L. I.” — and asked them to generate a nickname and story for each of the other three.

Our participants came up with nicknames like “human fly,” “another drunk,” “turkey jerk,” “little impotent,” “anal duck” and “heffer fetcher.” Each tease turned out to be a 30-second morality play. One low-status pledge was known as Taco John. The story behind the nickname was this: The pledge had gotten drunk on 18 shots of Bacardi during a late-night feast at Taco John’s; he then disappeared and was found passed out on the toilet, with his pants around his ankles, holding his genitals. Among other things, the fraternity members were notifying one another about moral boundaries: don’t get too drunk, and keep your private parts to yourself.

In the content and tones of the teases, we uncovered a familiar status dynamic. High-status “actives” teased the “pledges” in sharper, more provocative fashion, putting them in their place. Each “pledge” went after the other low-status pledges with edgy provocations, no doubt jousting for an edge. But when it came to their new high-status brothers, the pledges used teasing to praise. The most popular “pledges” proved to be the more playful teasers and were themselves teased in more flattering fashion: within a couple of weeks of the group’s formation, 30-second teases were demarcating rank.

For all the put-downs, the teasing among frat brothers and pledges did not appear to do any lasting damage. In studying transcripts of these teasing contests, you might expect to find a thrown punch or two. Instead, the fraternity members became better friends after their playful humiliations. Frame-by-frame analyses of the videos of these status contests revealed how this happened. At the punch line of a particular tease, the four brothers would actually burst into laughter (the target, not surprisingly, more quietly). Thanks to the scientific study of laughter, we know that when friends laugh, they laugh in unison, their fight-flight response (e.g., increased blood pressure) is calmed and mirror neurons fire; shared laughter becomes a collective experience, one of coordinated action, cooperative physiology and the establishing of common ground.

Perhaps surprisingly, the momentary pain of being teased can lead to pleasure. During their 15 seconds of humiliation, the targets of teasing displayed common signs of embarrassment — gaze aversion; a coy, nervous smile; a hand touching the face; a head bowed submissively so as to expose the neck; and blushing. These gestures are ancient signs of appeasement that trigger a reconciliation response in most mammals, as they did in our study. The more targets showed these evanescent signs of embarrassment, the more the teasers liked them.

Still, it’s hard not to remember why teasing has a bad name when it results in what sounds an awful lot like humiliation. In situations where power asymmetries exist, as they do in a frat house, how do we separate a productive tease from a damaging one? In part it’s the nature of the provocation. Productive teasing is rarely physically hurtful and doesn’t expose deep vulnerabilities — like a romantic failure or a physical handicap. Off-record markers — funny facial expressions, exaggeration and repetition — also help mark the tease as playful

rather than hostile. And social context means a lot. Where teasing provides an arena to safely explore conflict, it can join people in a common cause. Especially when they're allowed to tease back.

## THE ROMANCE OF TEASING

I still remember that day, as clear as a bell. Off to the side of the seventh-grade four-square game, Lynn, future high-school mascot, valedictorian, and my first love, approached me with hands coyly behind her back. She stopped unusually close, and with a mischievous smile framed by her cascading hair, asked, "Hey Dacher, wanna screw?" As I was in the midst of mumbling an earnest and affirmative reply, she held her hand open in front of me, a screw lying flat on her palm. "Just teasing" I heard amid the screeching laughter of the cabal of finger-pointing girls.

Had I trained my ear to discern the off-record markers of teasing, I would have detected subtle deviations from sincere speech in the artfully elongated vowels of Lynn's enunciation ("Hey Daaaacher, wanna screeeuuw?"). Had I read my Shakespeare I would have known to counter with my own provocation, and my chances for requited love would have risen. Here is a first expression of love between two of literature's great lovers, Beatrice and Benedick, from Shakespeare's "Much Ado About Nothing":

BEATRICE: For which of my good parts did you first suffer love for me?

BENEDICK: Suffer love! A good epithet! I do suffer love indeed, for I love thee against my will.

BEATRICE: In spite of your heart, I think. Alas, poor heart, if you spite it for my sake, I will spite it for yours, for I will never love that which my friend hates.

BENEDICK: Thou and I are too wise to woo peaceably.

To tease is to woo wisely.

Monica Moore, a psychologist at Webster University, surreptitiously observed teenage girls at a mall and found their packlike meanderings to be punctuated by bursts of teasing. These young Beatrices would veer into the orbits of young Benedicks (and vice versa) to tickle, poke, nudge and squeeze, creating opportunities for physical contact. Touch is registered in specialized receptors under the surface of the skin, our largest sensory organ. Touch calms stress-related physiology; it helps to activate reward regions of the brain and the release of oxytocin, a chemical that promotes feelings of devotion. Snails shoot dartlike appendages into potential sexual partners, to stimulate their paramour's sexual organs. We tease. And when we do, we look for traces of the telltale signs of desire — the lip pucker, the lip lick, the mutual gaze that lasts beyond the 0.20-second eye contact that defines more formal exchange. Teasing is the stage for the drama of flirtation, where suitors provoke in order to look for the sure signs of enduring commitment.

Long-term partners develop their own teasing idiom that weaves its way into their quotidian rhythms. This teasing typically focuses on sexual proclivities, bodily functions, sleep habits, eating habits and anachronistic fashion choices (my wife, Mollie, calls me "bison" when my hair begins to flip upward in nostalgic 1970s style).

Such teasing marks partners' quirks as deviant but endearing foibles, uniquely appreciated by the partner. Studies find that married couples with a rich vocabulary of teasing nicknames and formulaic insults are happier and more satisfied.

Romantic teasing provides a way of negotiating the conflicts that send many couples to the therapist's couch. To explore how playful teasing shores up marital bonds, I asked couples to tease each other using the same nickname paradigm used in the fraternity study. The nicknames they invented drew on the metaphors of love documented by the Berkeley linguistics professor George Lakoff: they made references to each other as food objects ("apple dumpling") or small animals ("adorable duckling"). The more satisfied the couple, the more the teasing was filled with off-record markers. And in a separate study, partners who managed to tease each other during a conflict — for example, over money or an infidelity — felt more connected after the conflict than those couples who resorted to the earnest criticism many therapists recommend. Teasing actually serves as an antidote to toxic criticism that might otherwise dissolve an intimate bond. Teasing is a battle plan for what Shakespeare called "the merry war."

## THE GOOD TEASE

Our rush to banish teasing from social life has its origins in legitimate concerns about bullies on the playground and at work. We must remember, though, that teasing, like so many things, gets better with age. Starting at around 11 or 12, children become much more sophisticated in their ability to hold contradictory propositions about the world — they move from Manichaeian either-or, black-or-white reasoning to a more ironic, complex understanding. As a result, as any chagrined parent will tell you, they add irony and sarcasm to their social repertory. And it is at this age that you begin to see a precipitous drop in the reported incidences of bullying. As children learn the subtleties of teasing, their teasing is less often experienced as damaging.

In seeking to protect our children from bullying and aggression, we risk depriving them of a most remarkable form of social exchange. In teasing, we learn to use our voices, bodies and faces, and to read those of others — the raw materials of emotional intelligence and the moral imagination. We learn the wisdom of laughing at ourselves, and not taking the self too seriously. We learn boundaries between danger and safety, right and wrong, friend and foe, male and female, what is serious and what is not. We transform the many conflicts of social living into entertaining dramas. No kidding.

*Dacher Keltner is a professor of psychology at the University of California, Berkeley, and an editor of the magazine Greater Good. His latest book, "Born to Be Good: The Science of a Meaningful Life," from which this essay is adapted, will be published next month by Norton.*

A version of this article appeared in print on December 7, 2008, on page MM52 of the New York edition.



## Book Review

By Frederic and Mary Ann Brussat

### *Born to Be Good*

*The Science of a Meaningful Life*

Dacher Keltner

W.W. Norton & Company 01/09 Hardcover \$25.95

ISBN: 9780393065121

Dacher Keltner is professor of psychology at the University of California, Berkeley, director of the Greater Good Science Center, and coeditor of *Greater Good* magazine. His research focuses on pro-social emotions, power, and reasoning. He begins this fascinating book with a look at the importance of Jen, a central idea in the teachings of Confucius. The term refers to "a mixture of kindness, humanity, and respect that transpires between people." These qualities bring out the best in ourselves and in others. They play a major role in the evolution of human goodness.

Keltner next looks at Charles Darwin's writings about positive emotions. He posited that sympathy is our strongest passion and can make all the difference in our relations with others. The author also salutes the scientific work of Paul Ekman, who pioneered the examination of emotional expression through the many movements of the face. This is followed by three findings from new studies in positive emotions: (1) Emotions are signs of our commitment to others; (2) Emotions are encoded into our bodies and our brains; (3) Emotions are our moral gut, the source of our most important moral intuitions. Although we are accustomed to thinking that the survival of the fittest is the law of evolution, Keltner posits that a better description of the human adventure would be the survival of the kindest, since we are a caretaking species.

In the last eight chapters of *Born to Be Good*, the author provides a consistently interesting assessment of eight emotions along with insights about them from art, literature, and philosophy. They are:

- Embarrassment (an ethic of modesty)
- Smile (as social chocolate)
- Laughter (the first step to nirvana)
- Tease (the perspective of others)
- Touch (an inexhaustible resource of rewards)
- Love (back to the birds and the bees)
- Compassion (a progenitor of courageous acts)
- Awe (unites us all)