Compassion vs. Empathy: Designing for Resilience

Insights

- While empathy involves experiencing the same emotion as another, compassion preps the brain and body for caregiving in response to another's suffering.
- Compassion triggers positive affect in the face of suffering and therefore contributes to resilience and well-being.
- Supporting elevation, altruism, and agency in design are among those strategies that can help foster compassion.

How is it that some people can spend their days making progress on the front lines of sickness or injustice while others can barely handle watching the nightly news? Empathy is critical to our relationships, our societies, and our individual well-being, but it can also hinder these, leading to avoidance, burnout, and distress. A better understanding of just what makes this difference would radically empower design. Design for resilient empathy would benefit everyone, but most obviously it would benefit care workers at risk of burnout, nonprofits seeking to empower action, and designers of social technologies. Can we design to foster resilience and understanding without

triggering empathic distress? Drawing on a combination of new neuroscientific research and work in the social sciences, we argue that it is possible to design for resilience and that the answer lies in our evolving empirical understanding of compassion.

A growing number of designers and user experience professionals are looking at how design can increase empathy and compassion, for example, in clinical situations, for conflict resolution, or in schools (see Facebook's Compassion Research Day or Microsoft's Entendre project for examples). A large number of Games for Change inclusions target empathy, and the 2013 UX for Good

Figure 1. Empathy, compassion, and altruism. (Image from *Positive Computing*, our forthcoming book from MIT Press)

challenge involved partnering with the Dalai Lama Center for Peace and Understanding to find new ways of fostering empathy in children.

Up until now, the terms *empathy* and *compassion* have been used fairly synonymously in design research, but new evidence suggests that understanding how empathy and compassion are different is critical to understanding resilience in the face of suffering. Research has now shown that empathy and compassion differ, not only qualitatively but also in their physiology, including distinctive facial expressions and display behaviors, and how they manifest distinctively in the brain.

UNDERSTANDING EMPATHY

Empathy definitively involves the vicarious experience or “mirroring” of another’s feelings. When I empathize, I feel sad because you feel sad. By feeling some of what someone else feels, we can understand their experience in a way that is direct and goes beyond the cognitive processing of linguistic or metalinguistic expressions. Scientific definitions of empathy reveal empathy to be a multifaceted construct that includes emotion recognition, vicarious feeling, and perspective taking [1].

Empathy is a core socio-emotional skill. Those lacking *cognitive* empathy have trouble *understanding* what others are thinking or feeling (as with autism spectrum disorders), while those lacking *affective* empathy have trouble *feeling* for others (as with sociopathology). As such, the fostering of empathy is important to each of us individually as well as to society, and a worthy target for design. There are many examples of programs designed to deliberately develop empathy, sometimes as a communication skill (for example, for the education of doctors, social workers, and other professionals) and sometimes for the prevention of mental health problems, bullying, and violent crime or to reduce prejudice and discrimination.

Inspiring games have been created that allow people to “walk a mile in someone else’s shoes,” such as PeaceMaker, a game that allows players to play both sides of the Palestinian-Israeli conflict. Because games provide opportunities for vicarious experience, role-play, and sometimes embodiment, they wield unique power for empathy development; however, design strategies need not be high-tech. For research studies, researchers typically

use imagery, narrative, or video to elicit empathy. Empathy is a natural product of human biology, so simple nudges and experiences can go a long way.

UNDERSTANDING COMPASSION

While empathy involves experiencing (to some degree) the same emotion as another, compassion does not necessarily involve this mirroring of feeling. It does, however, involve concern or *caring* in response to another’s suffering and a *motivation to act* on their behalf. As such, it has been conceptualized as a motivation, as well as both a state and a trait. Although compassion may certainly arise from empathy, it doesn’t necessarily, and it can be distinguished by the accompanying desire to take action and an emotional and physiological response that prepares the body and mind for caregiving.

Based on a cross-disciplinary review of the research, Goetz, Keltner, and Simon-Thomas define compassion as “the feeling that arises in witnessing another’s suffering and that motivates a subsequent desire to help” [2]. They identify research that shows distinctive facial expressions and display behaviors (such as oblique eyebrows, eye gaze, forward leans, and touch) that communicate approach behavior, outward attention, commitment to help, and cooperation. While empathy may lead to an *inward focus* and/or aversive response, as one is absorbed by an experience of vicarious negative emotion, compassion describes an *outward focus* and an active caregiving response.

For example, if my friend is angry and I empathize, I feel angry with her. If I see through the anger to the hurt behind it and feel motivated to care for her or act on her behalf, I experience compassion. Of course the two frequently come together, for example

when empathy leads to compassion and compassion to action (altruism). We have visualized the relationship between these three concepts in Figure 1.

Naturally, both empathy and compassion are critical to human relationships and to well-being, but only one of them could be considered a type of resilience.

COMPASSION AS RESILIENCE

If you put a monk in an fMRI machine, gave him tragic stories to read, and then watched his brain show patterns of positive emotion, would you be concerned? Recent neuroscience studies with experts and novices trained in either empathy or compassion have revealed the surprising finding that compassion triggers positive affect. As Klimeki and colleagues have put it, “Findings suggest that the deliberate cultivation of compassion offers a new coping strategy that fosters positive affect even when confronted with the distress of others” [3]. The idea that compassion elicits positive affect in the face of suffering is remarkable, but also key to understanding how it could confer resilience in even the direst of circumstances.

Remarkably, compassion cultivation does not dull one’s emotional reaction to pain, but instead results in an alternate response, specifically: reducing amygdala activation associated with threat perception but *increasing* responsiveness to suffering [4]. This supports the notion that compassion is highly sensitive to suffering but responds with caring and approach rather than with distress or avoidance.

It seems reasonable to conclude that the positive emotion that comes with compassion is not *schadenfreude* but rather *affiliation*—those feelings

Empathy	Compassion
Mirrors same emotion as other	Doesn’t necessarily include same emotion
Inward focus (internal experience)	Outward focus (approach)
Empathy (as empathic distress) can prompt us to avoid or close our eyes to curb pain caused by another’s suffering.	Compassion physiologically preps the body for approach and caregiving.
Distress-related facial expressions and display behaviors	Unique facial expressions/display behaviors that signal commitment and cooperation (e.g., eye gaze, forward leans, and touch communicate outward attention and approach)
Increased heart rate and skin conductance	Reduced heart rate and skin conductance
Negative affect patterns in the brain	Positive affect patterns in the brain

→ Table 1. Distinguishing empathy and compassion.

that make us feel closer to others and motivated to care for them. Another remarkable finding about compassion is that despite its connection to witnessing suffering, it has been shown to increase our well-being, not only through increased social connectedness but also through stress reduction. Whereas empathic distress can lead to elevated heart rate and skin conductance associated with stress, compassion responses trigger heart-rate *deceleration* and *lowered* skin conductance consistent with the brain prepping for caregiving and other-focused attention [2] (see Table 1). The stress-buffering effect of compassion vs. empathy-related distress is manifest in the phenomena of “compassion satisfaction” vs. “burnout” among aid workers. Numerous studies have also linked compassionate lifestyles to health outcomes and greater longevity. (For an accessible summary of the evidence, see the 2013 article “Compassionate Mind, Healthy Body” [5].)

Stress reduction, affiliation, and action orientation in the face of difficulty sound a lot like characteristics of resilience. If the

design of technologies can encourage the development of compassionate attitudes and elicit compassionate states in the face of social problems, we will not only help to address those problems, but also improve the well-being of all involved.

TOWARD DESIGN STRATEGIES TO FOSTER COMPASSION

How exactly do we design for software, environments, and experiences in ways that support or even develop compassion and the resilience and action orientation it confers? This remains a formidable and open research question, but early evidence points to a number of leads. First, we know design can impact compassion, as researchers have methods for eliciting compassionate states that include the use of imagery, video, narrative, and support for meditation practices, all of which have been incorporated into digital experience. Based on research in multiple disciplines, we suggest the following themes as starting points for research and practice related to designing for compassion:

- Addressing appraisals of deservedness
- Supporting feelings of agency

The positive emotion that comes with compassion is not *schadenfreude* but rather *affiliation*—those feelings that make us feel closer to others and motivated to care for them.

ACM Transactions on Reconfigurable Technology and Systems

This quarterly publication is a peer-reviewed and archival journal that covers reconfigurable technology, systems, and applications on reconfigurable computers. Topics include all levels of reconfigurable system abstractions and all aspects of reconfigurable technology including platforms, programming environments and application successes.

www.acm.org/trets
www.acm.org/subscribe

Association for
Computing Machinery

- Providing opportunities for the practice of altruism
- Providing opportunities for elevation
- Supporting compassion training practices.

Addressing appraisals of deservedness. In the talk “The Ancient Heart of Forgiveness” for the Berkeley Greater Good Science Center [6], Jack Kornfield describes an encounter with a group of Tibetan nuns who, as teenagers, survived years of imprisonment and torture as part of Chinese-government oppression. The nuns were asked if they were ever afraid during this time, to which they responded, “Yes, we were terribly afraid. And what we were afraid of was that we would end up hating our guards—that we would lose our compassion.” A powerful testament to compassion as resilience, rare examples like these of compassion in the face of extreme injustice call to mind our greatest cultural heroes and suggest that compassion in its pure state is non-judgemental. However, few of us have experienced compassion of such heroic proportions. In contrast, compassion is frequently derailed by appraisals of fairness—whether or not we feel others are responsible for their condition [2].

As such, designers seeking to foster social change will need to address underlying perceptions of deservedness. In some cases, this will entail correcting misconceptions (for example, about the various roots of mental illness, obesity, or poverty). In other circumstances, strategies for fostering empathy may be the first step, such as for conflict resolution (as with the PeaceMaker game).

Jonathan Belman and Mary Flanagan, who provide guidelines for games to foster empathy [7], give the example of a game for eliciting empathy in relation to homelessness. They point out that for players who attribute blame

to the homeless, engaging with the game may increase their experience of empathy, but they are unlikely to give time or money to a shelter because their appraisal of the situation is incongruent with their goals. In other words, people’s attitudes toward homelessness will affect whether the game leads to compassionate action or stops at empathy.

Supporting feelings of agency. Feeling overwhelmed by empathic distress or feeling a compassionate motivation to take action seems to depend on how much we believe we can make a difference. Appraisal studies have shown that “feelings of compassion should increase when the individual feels capable of coping with the target’s suffering. Appraisals of low coping ability, by contrast, should activate distress in the face of another’s suffering, which countervails compassion-related tendencies when resources are low” ([8] quoted in [2]).

Design decisions can either foster feelings of empowerment to support compassion or simply evoke empathy and possibly distress. Take, for example, various design approaches taken by charities and nonprofit organizations: In the past 20 years we have observed a move from confrontational imagery of dire and overwhelming suffering (e.g., children dying of starvation) to imagery of people being empowered by charitable assistance to improve their lives (e.g., a community thriving thanks to clean-water access made possible by donations).

In seeing that action works, we share in joy rather than misery. Designing for the underrated concept of “empathic joy” in the face of great social challenges adds empowerment to the picture, moving empathy toward compassionate action.

Providing opportunities for the practice of altruism. Practice makes

Feeling overwhelmed
by empathic distress or feeling
a compassionate motivation
to take action seems to depend
on how much we believe
we can make a difference.

perfect, and research studies show that giving people opportunities to practice altruism in the virtual world translates to action in the real world. A recent study [9] found that augmented virtual-reality experiences could lead to increases in real-world altruism. Some of 60 participants who completed the study were given the virtual power to fly like Superman to either help a sick child or tour a virtual city. At the end of the virtual-reality experience, all the participants were confronted by “someone in need of help” in the real world. Those in the superhero/child-saving condition were significantly faster to act and helped more than those in the touring conditions. Six of the touring participants didn’t help at all, whereas all of the superheroes did. This is just one example of mounting research linking prosocial game-play to prosocial behavior in the real world. These studies seem to suggest that giving people practice in helping, or perhaps the experience of being capable of helping (coping ability), inspires prosociality even after the experience is over.

Providing opportunities for the experience of elevation. Another approach to cultivating compassion could be through inspiring it. Jonathan Haidt uses the term *elevation* to describe the “warm, uplifting feeling that people experience when they see unexpected acts of human goodness, kindness, courage, or compassion. It makes a person want to help others and to become a better person himself or herself” [10]. One study subject’s heartfelt description says it best: “I felt like jumping out of the car and hugging this guy. I felt like singing and running, or skipping and laughing. Just being active. I felt like saying nice things about people. Writing a beautiful poem or love song. Playing in the snow like a child. Telling everybody about his deed” [10].

Users already hack their own digital spaces to foster these feel-good emotions by sharing articles and videos of good Samaritan stories through social networks—for example, the fireman who revived an unconscious kitten (21 million+ views on YouTube) or Glen James, the homeless man who returned \$40,000 to the police (\$250,000 was later crowdsourced

to buy him a home). Glen James’s story isn’t the only evidence that elevation transfers to action. Research has shown that elevation inspires volunteerism and that it can be a vector for the spread of altruism within social networks. Inspiration carries with it a motivator to altruistic action that is separate from empathy. When we are inspired or elevated, we seem to be motivated by a renewed feeling of faith in human goodness and our ability to play a part. We are also given models of how to do so.

Supporting compassion-training practices. Many interventions for fostering compassion involve meditation (largely based on Buddhist strategies developed over thousands of years and now scientifically validated). Hoffmann, Grossman, and Hinton review intervention studies using compassion and loving-kindness meditation and conclude that they increase positive affect, lower negative affect, and can help manage psychological problems, including depression, social anxiety, marital conflict, anger, and coping with the strains of long-term caregiving [11]. Other studies have produced results showing that meditation-based compassion interventions increase compassion, prosocial behavior, and overall well-being.

While changes to the design of digital environments can support or increase the likelihood of eliciting compassion as a temporary state, efforts to cultivate compassion as a trait across the population and in the longer term will likely involve systematic practices like these. Just as technologists have helped to increase access to mindfulness training (via apps and sites like SmilingMind.com.au), digital technologies that can support compassion training within schools, the workplace, or the home will play an important role.

The potential for compassion cultivation to act as a pathway to resilience and social change is increasingly clear, and the capacity for design to play an active role in taking us down that path will surely resonate with the growing number of designers putting their skills toward solving complex social problems and making positive social change.

ENDNOTES

1. Singer, T. and Lamm, C. The social neuroscience of empathy. *Annals of the New York Academy of Sciences* 1156, 1 (2009), 81–96.
2. Goetz, J.L., Keltner, D., and Simon-Thomas, E. Compassion: An evolutionary analysis and empirical review. *Psychological Bulletin* 136, 3 (2010), 351.
3. Klimecki, O.M., Leiberg, S., Lamm, C., and Singer, T. Functional neural plasticity and associated changes in positive affect after compassion training. *Cerebral Cortex* 23, 7 (2013), 1552–1561.
4. Lutz, A., Brefczynski-Lewis, J., Johnstone, T., and Davidson, R.J. Regulation of the neural circuitry of emotion by compassion meditation: Effects of meditative expertise. *PloS One* 3, 3 (2008), e1897.
5. Seppala, E. Compassionate mind, healthy body. UC Berkeley Greater Good Science Center website; http://greatergood.berkeley.edu/article/item/compassionate_mind_healthy_body
6. Kornfield, J. The ancient heart of forgiveness. UC Berkeley Greater Good Science Center website; http://greatergood.berkeley.edu/article/item/the_ancient_heart_of_forgiveness
7. Belman, J. and Flanagan, M. Designing games to foster empathy. *International Journal of Cognitive Technology* 15, 1 (2010), 11.
8. Hoffman, M.L. Is altruism part of human nature? *Journal of Personality and Social Psychology* 40 (1981), 121–137.
9. Rosenberg, R.S., Baughman, S.L., and Bailenson, J.N. Virtual superheroes: Using superpowers in virtual reality to encourage prosocial behavior. *PloS One* 8, 1 (2013), e55003.
10. Haidt, J. Wired to be inspired. UC Berkeley Greater Good Science Center website; http://greatergood.berkeley.edu/article/item/wired_to_be_inspired
11. Hoffmann, S.G., Grossman, P., and Hinton, D.E. Loving-kindness and compassion meditation: Potential for psychological interventions. *Clinical Psychology Review* 31, 7 (2011), 1126–32.

✦ **Dorian Peters** is a digital designer and writer specializing in design for learning and well-being. She heads online strategy for the Faculty of Education and is creative leader of the Positive Computing Lab at the University of Sydney. Her books include *Interface Design for Learning and Positive Computing* (forthcoming from MIT Press).
→ dorian.peters@sydney.edu.au

✦ **Rafael A. Calvo** is director of the Software Engineering Lab at the University of Sydney and project leader at the Young and Well Cooperative Research Centre. Co-author of *Positive Computing*, he focuses on the design of systems that support well-being in the areas of mental health, medicine, and education.
→ rafael.calvo@sydney.edu.au