



Compassion and altruism: how our minds determine who is worthy of help

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The causal role of affective experiences in the generation of altruistic behavior has emerged as a topic of great interest during the past decade. If continued advancement is to be made, however, two primary issues need to be addressed. The first involves the use of terms such as *empathy* and *compassion*. The second involves examination of the ability of these emotional states to be tuned to the ratio of costs and benefits inherent in any given opportunity for altruistic action. In this article, therefore, I attempt to delineate a specific use for the term compassion to capture one aspect of what has traditionally been termed empathy and then show how this specific emotional state is contextually responsive to trade-offs involving immediate and delayed reward.

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Introduction

Are we brutish and selfish beings by nature, with only willful adherence to ethical or religious doctrines reigning in our desires for individual gain at the expense of others? Or, are we compassionate at base, with our behaviors corrupted by logical strategies meant to convince us to pursue our own self-interest? These questions, which have been debated for centuries [1–3], still captivate our interest today [4–6]. And why not? Altruism — a willingness to help others at cost to oneself without an immediate or guaranteed return — is a powerful act. Not only is it viewed as a pinnacle of virtue by many, but, if emerging frequently enough, can function as a driving force for building cooperation and stemming violence in a society [7,8].

If we are to further understanding of compassion and altruism, however, I believe the nature of the questions

we have traditionally asked needs to be tweaked a bit. Rather than inquiring whether humans are altruistic or selfish at base, we need to accept that we're both and neither. That is, we need to recognize that moral behavior varies not only between people, but also within them [9]. A strategy of consistent compassion (or lack thereof) would not be highly adaptive. Just as ample simulations have shown that human populations completely characterized by cooperators or cheaters are evolutionarily unstable [10–12], so too, in an analogous fashion, would be individual minds that always (or never) favored being the first to offer assistance. Increased success comes from being able to tune behavioral responses to the probabilities of potential 'pay-offs' provided by any given situation, which when it comes to compassion and altruism, means deciding whose pain it's worth to feel and exert effort to remediate.

Compassion versus empathy

Before delving more deeply into this issue, a pause to clarify terms is necessary. Both within and across the neural and behavioral sciences, the term *empathy* has been used loosely. For some, it refers to the ability to intuit what people are feeling [13]. For others, it reflects emotional contagion [14]. And for still others, it captures a discrete emotional experience meant to motivate altruistic action [15,16]. As one might imagine, such varying uses can be problematic. Depending on the definition employed, empathy could simultaneously serve as cause, mediator, and outcome in some models of prosocial behavior. For example, an ability to intuit another's suffering might lead to a sense of suffering in oneself that, in turn, might evoke an affective response meant to address the other's suffering.

To remedy this issue, I endorse, and here utilize, the use of the term compassion to refer to a feeling arising from the witnessing of another individual's suffering that subsequently motivates an effort to help [17**]. Used in this way, the term connotes a specific emotional state, similar to what Batson termed empathic concern, that although usually experienced as positive in valence, can also be characterized by initial negative affect in response to the distress of another [18].

Conceptualized in this way, the emotion *compassion* is directly tied to altruistic action. Whether compassion requires activation of or mediation by other constructs related to empathy remains unanswered at present. For example, although it seems clear that one must be able to

recognize the suffering of another in order to feel compassion, whether an observer must vicariously *experience* that suffering him-self or her-self is open to debate. Indeed, as Singer and colleagues have suggested, the necessity to simulate the painful experience of others might be detrimental to altruism, as it could engender burnout or similar states that can inhibit prosocial acts [19,20*].

Nonetheless, ample evidence confirms that the experience of the distinct state of compassion, however evoked, motivates costly behaviors meant to alleviate the suffering of others [7,21,22*,23]. Yet for all its interpersonal benefits, it is also certainly true that, as I noted earlier, unbridled compassion and subsequent altruism, even leaving the issue of empathic distress aside, can be maladaptive. By very definition, this emotion and behavior center on the costly expenditure of resources (e.g. time, money, social support) in an effort to assist another. As a result, if compassion and altruism were equally likely to be directed toward any individuals in distress, a given person's resources might well be quickly depleted. Indeed, as Cameron and Payne have shown, individuals regularly down-regulate their levels of compassionate responding when confronted with large numbers of possible recipients [24*]. An adaptive 'compassion system,' therefore, needs some mechanism to tune its responsiveness (cf. [25–28]).

Determining who is worthy of compassion

As is well recognized, Trivers' [25] model of reciprocal altruism solved a principal problem in the study of altruistic behavior: why individuals assist others to whom they are not related. As he and others have now elegantly shown, the solution stems from delayed opportunities for 'pay-back.' That is, expending resources to help another in need at Time 1 can increase the likelihood of receiving help from the other at Time 2 — a time when the initial helper may be in need. The underlying calculation that drives this phenomenon, simply put, is an estimation of how likely it is that the other will indeed reciprocate.

While the aforementioned logic is well accepted, it is instructive to note that although little data existed at the time to support the role played by compassion in human reciprocal altruism, Trivers [25] explicitly predicted that morally toned emotions would likely mediate the helping behaviors characterizing this phenomenon. What this view suggests, of course, is that the compassion we feel for others need not be a function of the objective level of distress or suffering they experience, but rather stems from a subjective appraisal of it — one modulated by nonconscious processes that index the likelihood that the sufferer in question is a good bet to return the favor.

But what metric is used to gauge that bet? Given the flexible nature of human coalitions, it would need to be one characterized by sensitivity to context. For that

reason, the use of similarity as a metric of choice makes good sense [22,26,28]. Similarity is inherently flexible [29], thereby allowing it to capture not only long-standing markers of affiliation, but also rapid modulations derived from fluctuating situational needs. As decades of work using the minimal group paradigm have shown, new groups demonstrating a preferential bias for support of members can be created quickly based on seemingly inconsequential features that mark shared experiences or goals [30]. Consequently, if compassion tracks the likelihood of delayed reciprocal support, fixing it to perceptions of similarity makes good sense.

If this phenomenon is true, the question, of course, becomes how deeply embedded in the mind is it? That is, no one would be surprised if a soldier on the battlefield, when coming across two equally injured combatants — one from his own side and one from the enemy — felt more compassion for his brother-in-arms or sister-in-arms. After all, the two sides have a history of aggressing against or competing with each other. But if similarity truly modulates compassion, then even subtle cues of likely affiliation, and thereby potential for enhanced reciprocity, should matter.

Work by Valdesolo and DeSteno [22*] offers a clear examination of this conjecture. In order to strip similarity down to its most basic level, we employed a simple manipulation of motor synchrony, a subtle signal known to enhance a sense of affiliation or shared purpose [26,31–33]. After being paired with a confederate whom they did not know, participants were simply told to tap a sensor on the table in front of them in time to beats they heard in headphones. The confederate, with whom they never spoke, did the same on the opposite side of the table. The beats were designed so that half the participants would tap in time with the confederate while the other half tapped random patterns. Following this synchrony inducing procedure, participants witnessed their tapping partner be unfairly assigned an onerous task, after which their emotional responses were measured and efforts to assist the partner, if any, were recorded.

At base, this design presents a situation where an individual is victimized in the same manner, but his similarity to the observer is nonconsciously manipulated. The results confirmed the subjective nature of compassion. Participants not only felt more similar to victims with whom they synchronously tapped their hands, but also felt more compassion for their plight and devoted more effort to help victims complete their unfairly assigned burdens. Of primary importance, perceptions of increased similarity mediated the enhanced levels of compassion. Further supporting the links between similarity and compassion, recent work has shown that synchrony also enhances the altruistic behavior of infants [34].

What these and similar findings show is that the human mind continuously places bets on who is most likely to return a costly favor. An increasing sense of similarity, however calculated or induced, marks individuals as being more likely to reciprocate, and therefore as more appropriate targets of compassion and its behavioral sequelae. Interestingly, the link between perceived similarity and compassion appears to be bidirectional. Heightened states of compassion can, in turn, make individuals perceive others as more similar to themselves [35].

Recognition of the role played by similarity also holds potential to explain one of the seemingly illogical biases that plagues charitable giving: the identifiable victim effect. As many have suggested or shown, people are more emotionally affected, and thereby driven to altruistic action, by a single individual's distress than by the distress of larger groups of unidentified sufferers [36,37]. Put differently, the human mind is more attuned to identifiable than statistical pain, hence the tactic of pairing faces with donation targets that is commonly employed by charitable organizations.

The simple act of identifying an individual in need opens many avenues for increasing perceived similarity beyond what is possible using sheer statistical information. For example, seeing another human as opposed to a number, at a minimum, evokes a sense of shared humanity. Seeing a child suffering may resonate with a parent who has a child of a similar age, as she may see her son or daughter in this other and thus feel more linked to the nameless young stranger. Whereas utilitarian logic would surely dictate greater efforts to aid greater numbers, the non-conscious processes that shape compassion rely on a more basic calculation wherein identifiability enhances a sense of similarity and, thereby, estimates of the likelihood for reciprocation. Of course, in the case of identifiable victims residing at remote locations, this computation may reflect something of a hiccup due to technology: we can now see victims who do not live in our own locale, and thus may be less able to reciprocate. Nonetheless, historically speaking, identifiability served a useful purpose.

Cultivating and nudging compassion

Recognition of the power of similarity opens several avenues for the design of interventions and nudges to encourage more compassionate interactions. One promising tool might involve social media. Consider the vast amounts of information about individuals' likes, dislikes, group memberships, and preferences that corporations like Facebook, Google, and Twitter hold. If bits of information concerning what individuals in competition or conflict share in common could be subtly and selectively surfaced during their interactions on social media platforms, such information might nudge them toward more compassionate responses.

Another promising avenue comes from the practice of mindfulness meditation. Given that the historical purpose for meditation was to end suffering, a theoretical link to compassion is clear. Supporting this link, recent work has demonstrated that relatively brief periods of meditation or meditation-like training (ranging from several hours to several weeks) dramatically increase people's altruistic behavior [21,23,38,39]. In our own work, for example, we found that several weeks of meditation practice increased participants' willingness to accept discomfort to aid another in pain by over 23% [38,39].

Although the mechanism(s) underlying meditation's influence on compassion and altruism remain to be identified, similarity again stands as a promising candidate. One of the goals of meditation is to induce a state of equanimity — a calm state of insight in which one realizes the equal interconnection of all beings. As equanimity emerges, then, practitioners should begin to refrain from making strong evaluative distinctions among friends, strangers, and enemies. Psychologically speaking, a state of equanimity implies an equalization of perceived links with or similarities to all others, which, based on the findings described above, should enhance the probability of compassionate behavior toward strangers. Given this suggestive possibility, further investigation of the links between meditation, similarity, and compassion are warranted.

Concluding remarks

In many ways, dilemmas relevant to compassion are similar to those characterized by intertemporal choice — dilemmas where decision options hold different consequences as time unfolds. While classic operationalizations of intertemporal choice usually involve money, food, or other similar tangible rewards, the dynamics of reciprocal helping behavior can also be accommodated. For example, the decision of whether to help someone in distress offers immediate rewards if altruistic behaviors are withheld; the observer retains resources in the present. However, deciding to expend those resources, while costly in the moment, can lead to larger rewards in reciprocal help in the future.

Conceptualized in this way, the state of compassion can be viewed as an emotional mechanism meant to foster decisions that offer a potential for delayed, or long-term, gain in the face of immediate cost [40]. As noted above, its emergence is partially a function of nonconscious calculations indexing the likelihood that a delayed benefit (i.e. temporally removed assistance) will, in fact, be realized. Compassion, then, may properly be considered an emotion-based mechanism to enhance self-regulation, at least within the context of building social capital. As such, it stands as a prime exemplar of an intuitive and automatic response capable of building virtue from the bottom up.

Conflict of interest statement

Nothing declared.

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