

post. As more adolescents see this content, social distancing can be established as a group norm among friends. This behaviour will then be modelled by those looking on, who may go on to post similar content themselves. One advantage of this approach is that it is adolescent led and autonomous: the way in which young people manage social distancing, and their motivation for doing so, will stem naturally from the young people themselves.

Public health bodies should consider targeting, and even incentivising, influential individuals online (i.e., those who have the capacity to diffuse information among a large online social network). For example, it may be particularly useful to target social media 'influencers', individuals with a strong online presence and a large number of adolescent followers. If these individuals model positive social distancing behaviour and communicate the risk of COVID-19 through their platform, adolescents may listen. An advantage of targeting social media influencers is that they exist across a number of domains of interest (e.g., different hobbies) and so are likely to be able to target large disparate groups of young people.

### Concluding Remarks

Although the coronavirus appears to pose a low risk to adolescents themselves, their willingness to follow social distancing guidelines is essential to reduce the risk for other people. Adolescent susceptibility to peer influence can be beneficial and should be harnessed by public-health campaigns to increase social distancing. We propose that adolescents themselves have a great capacity to influence each other to change norms and peer expectations towards public-health goals. Especially important in creating change is the need to provide young people with the capacity to lead and enact their own ideas within their social networks. Asking adolescents to stay away from their friends at a

key developmental period is a considerable challenge, but can be achieved by taking advantage of adolescent social influence.

### Acknowledgments

S.-J.B. is funded by Wellcome, the Jacobs Foundation, Switzerland, UKRI-GCRF, and the University of Cambridge. J.L.A. is funded by the MRC.

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<https://doi.org/10.1016/j.tics.2020.05.001>

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### References

- Chen, L.H. *et al.* (2000) Carrying passengers as a risk factor for crashes fatal to 16- and 17-year-old drivers. *JAMA* 283, 1578–1582
- Gardner, M. and Steinberg, L. (2005) Peer influence on risk taking, risk preference, and risky decision making in adolescence and adulthood: an experimental study. *Dev. Psychol.* 41, 625
- Loke, A.Y. and Mak, Y.W. (2013) Family process and peer influences on substance use by adolescents. *Int. J. Environ. Res. Public Health* 10, 3868–3885
- Nesi, J. *et al.* (2018) Transformation of adolescent peer relations in the social media context: part 2 – application to peer group processes and future directions for research. *Clin. Child. Fam. Psychol. Rev.* 21, 295–319
- Maxwell, K.A. (2002) Friends: the role of peer influence across adolescent risk behaviors. *J. Youth Adolesc.* 31, 267–277
- Foulkes, L. *et al.* (2018) Age differences in the prosocial influence effect. *Dev. Sci.* 21, e12666
- Choukas-Bradley, S. *et al.* (2015) Peer influence, peer status, and prosocial behavior: an experimental investigation of peer socialization of adolescents' intentions to volunteer. *J. Youth Adolesc.* 44, 2197–2210
- van Hoorn, J. *et al.* (2016) Peer influence on prosocial behavior in adolescence. *J. Res. Adolesc.* 26, 90–100
- Henneberger, A.K. *et al.* (2020) Peer influence and adolescent substance use: a systematic review of dynamic social network research. *Adolesc. Res. Rev.* Published online January 2, 2020. <https://doi.org/10.1007/s40894-019-00130-0>
- Brechwald, W.A. and Prinstein, M.J. (2011) Beyond homophily: a decade of advances in understanding peer influence processes. *J. Res. Adolesc.* 21, 166–179
- Blakemore, S.J. (2018) Avoiding social risk in adolescence. *Curr. Dir. Psychol. Sci.* 27, 116–122
- Paluck, E.L. *et al.* (2016) Changing climates of conflict: a social network experiment in 56 schools. *Proc. Natl. Acad. Sci. U. S. A.* 113, 566–571
- Yeager, D.S. *et al.* (2018) Why interventions to influence adolescent behavior often fail but could succeed. *Perspect. Psychol. Sci.* 13, 101–122
- Yeager, D.S. *et al.* (2015) Declines in efficacy of anti-bullying programs among older adolescents: theory and a three-level meta-analysis. *J. Appl. Dev. Psychol.* 37, 36–51
- MacArthur, G.J. *et al.* (2016) Peer-led interventions to prevent tobacco, alcohol and/or drug use among young people aged 11–21 years: a systematic review and meta-analysis. *Addiction* 111, 391–407

## Science & Society

# Catastrophe Compassion: Understanding and Extending Prosociality Under Crisis

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**How do people behave when disasters strike? Popular media accounts depict panic and cruelty, but in fact individuals often cooperate with and care for one another during crises. I summarize evidence for such 'catastrophe compassion', discuss its roots, and consider how it might be cultivated in more mundane times.**

### A Surprising Response to Calamity

In the aftermath of Hurricane Katrina, news reports suggested that the natural disaster had quickly been followed by a human one. Unchecked by law enforcement, New Orleanians had apparently committed countless brazen crimes [1]. The *New York Times* described the city as a 'snake pit of anarchy, death, looting, raping, marauding thugs' [2].

These harrowing stories shaped the reaction of the authorities to the crisis – who, for example, deployed the national guard to 'take control' of the city instead of focusing on humanitarian relief. The stories were also inaccurate. Although crime did occur in New Orleans following Katrina, victims by and large remained peaceful, and many helped one another [1,3].

For decades, social scientists have documented two narratives about human behavior during crises. The first holds that, following disasters, individuals (i) panic,

(ii) ignore social order, and (iii) act selfishly. This cluster of beliefs characterizes popular media accounts of disaster, as well as lay forecasts. In one study, members of the public generally agreed with statements including 'when there is an emergency, crowd members act selfishly', and 'when there is an emergency, social order breaks down'. Agreement further tracked support for 'coercive' handling of disaster by authorities, such as keeping the public uninformed. Interestingly, police officers – who presumably have extensive experience with people in crisis – were significantly less likely to agree with these statements [4] (additional references are given in the supplemental material online).

The second narrative comes from historical records. Far from rendering people antisocial and savage, disasters produce groundswells of prosocial behavior and feelings of community. In their wake, survivors develop communities of mutual aid, engage in widespread acts of altruism, and report a heightened sense of solidarity with one another [3,5,6]. Unaffected people descend on scenes of disasters to volunteer, as well as flooding them with donations and volunteers, a phenomenon known as 'disaster convergence' [3].

I refer to positive social behaviors in the face of negative circumstances as 'catastrophe compassion'. Catastrophe compassion is widespread and consistent; it follows earthquakes, war, terrorist attacks, hurricanes, and tsunamis, and – now – a pandemic. As COVID-19 spreads, communities around the world have created 'mutual aid spreadsheets' to help vulnerable neighbors [7], and billions of people have engaged in physical distancing to protect public health – perhaps the most populous act of cooperation in history. Consistent with its prosocial nature, one recent study found that people expressed greater intent to follow distancing when it was framed as a way to help

others rather than as a means to protect themselves [8].

In addition to being prevalent, catastrophe compassion appears to be beneficial. Prosocial behavior exerts positive effects on helpers – including increases in happiness and decreases in stress and loneliness. Following disasters, mutual aid also tracks increases in positive collective outcomes such as social connection, solidarity, and shared resilience [9].

### Roots of Catastrophe Compassion

Psychologists have pinpointed several mechanisms that might underlie catastrophe compassion. One pertains to the powerful nature of social identity. Each of us identifies with multiple groups, for instance based on our generation, ideology, or profession, and we commonly express loyalty, care, and prosociality towards members of our own groups.

Social identity is also malleable. A person may be both a tuba player and an Ohioan, but those identities vary in salience depending on whether they are at band practice or a Buckeyes game. Even new identities created in a laboratory can take on importance, and can shift one's tendency to act prosocially towards people in novel groups. Identities also tend to matter most when they contain specific characteristics such as shared goals and shared outcomes.

When disasters strike, victims may suddenly be linked in the most important *de novo* group to which they have ever belonged. Strangers on a bus that is bombed might experience a visceral, existential sense of shared fate, and might thus quickly not be strangers any longer – and instead become collaborators in a fight for their lives. As described by Drury [9], an elevated sense of shared identity is indeed common to disaster survivors, and is a potent source of cooperative behavior.

A second source of catastrophe compassion is emotional connection. Empathy – sharing, understanding, and caring for the emotional experiences of others – predicts prosocial behavior across a range of settings. Consistent with this connection, a recent study found that the empathy of individuals for those affected by the COVID-19 pandemic tracked their willingness to engage in physical distancing and related protective behaviors, and that inducing empathy for vulnerable people increased intention to socially distance [10].

Emotional connection can also comprise mutual sharing of affect across people. After disclosing emotional experiences with each other, individuals tend to feel more strongly affiliated to one another. Such disclosures are also a powerful way to recruit supportive behavior during difficult times, and thus buffer individuals against stress [11]. However, individuals often avoid disclosing negative experiences – for instance because they imagine others will judge or stigmatize them – and thus miss out on the benefits of affect sharing [12].

Disasters thrust people into a situation where their suffering is obviously shared with others. This could in turn lower psychological barriers to disclosure, thus creating opportunities for deeper connection, mutual help, and community. Consistent with this idea, in the wake of the 1989 Loma Prieta earthquake, individuals frequently talked about the disaster and its effects on them for ~2 weeks [13]. A similar elevation in emotional conversations was found among Spaniards following the 2004 terrorist bombing in Madrid [6]. Researchers further found that sharing 1 week after the attacks predicted increases in solidarity and social support, as well as decreases in loneliness, 7 weeks later.

## Extending Catastrophe Compassion

As Solnit [3] observes, although few people would want a disaster to befall them, many survivors look back on disasters with a surprising amount of nostalgia. Floods, bombings, and earthquakes are horrific, but in their aftermath individuals glimpse levels of community, interdependence, and altruism that are difficult to find during normal times. Normal times then return, often accompanied by the boundaries that typically separate people.

Might catastrophe compassion outlast the catastrophes themselves, and if so, how? Some suggestive evidence emerges from the study of individuals who endure personal forms of disaster – adverse events such as severe illness, family loss, and victimization by crime. Such adversity often generates increases in prosocial behavior, which Staub and Vollhardt [14] have termed 'altruism born of suffering'. The positive effects of adversity appear to extend in time. For instance, the experience of lifetime adversity reportedly tracks the willingness of an individual to help strangers and their ability to avoid 'compassion collapse' by maintaining empathy even in the face of numerous victims [15].

Interestingly, this latter effect is partially explained by an increased sense of efficacy (i.e., the belief that one can make a difference) among people who have endured high levels of adversity. Further, experimentally inducing people to believe in their own efficacy to make a difference for others increases their compassion in the face of mass suffering [15]. Although speculative, it is possible that, during disasters, people witness their own prosocial efficacy firsthand because the others they help are highly visible – neighbors, friends, and victims upon whom a spotlight has been shone. As such, highlighting prosocial efficacy in nondisastrous times, by making the targets and effects of helping more visible, could extend the willingness of individuals to help beyond disaster contexts.

One way to achieve this is to reify and formalize communities of disaster survivors such that they can remain visible to each other and salient to the identity of the survivors. Many such communities already exist – for instance in peer counseling associations that connect and support people who have endured addiction, have lost loved ones to war, or have been victims of assault. Broader groups also often emphasize remembrance of disasters, for instance when cultural rituals and practices commemorate a culture's experience of hardship as a way of bonding individuals and generations.

Another way to extend catastrophe compassion is to simply remember it, and what it reveals about human social behavior. When people believe others will 'go rogue' following disasters, they are expressing one flavor of a more general, dim view of their fellow citizens. Individuals tend to be unduly cynical about human nature, and for example, demonstrably overestimate the extent that people are driven by self-interest [16]. Cynicism tracks decreases in psychological well-being, and can also become self-fulfilling, for instance when people conform to a selfish norm that they erroneously believe others are following.

As Drury [9] writes, '... in much of everyday life, particularly in Western and neoliberal societies, people are overwhelmingly positioned as individuals acting on the basis of personal self-interest ... [and] ... the repeated finding that people, in fact, act collectively in events where personal self-interest is threatened requires explanation.' For all the suffering they produce, social behavior during and after disasters provides a counterpoint to the prevailing cynicism of our culture. Catastrophe compassion presents people with a view of ourselves that might surprise us – driven by 'otherishness' rather than by selfishness during crucially important moments. One way to honor and extend this positive behavior is to not

be surprised by it any longer, but instead to realize that prosociality is common, and thus to expect – and demand – it from others and from ourselves.

### Supplemental Information

Supplemental information associated with this article can be found online at <https://doi.org/10.1016/j.tics.2020.05.006>.

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<https://doi.org/10.1016/j.tics.2020.05.006>

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### References

1. Tierney, K. et al. (2006) Metaphors matter: disaster myths, media frames, and their consequences in Hurricane Katrina. *Ann. Am. Acad. Pol. Soc. Sci.* 604, 57–81
2. Dowd, M. (2005) United States of shame. *New York Times* 3 September
3. Solnit, R. (2010) *A Paradise Built in Hell: The Extraordinary Communities That Arise in Disaster*, Penguin
4. Drury, J. et al. (2013) Psychological disaster myths in the perception and management of mass emergencies. *J. Appl. Soc. Psychol.* 43, 2259–2270
5. Bauer, M. et al. (2016) Can war foster cooperation? *J. Econ. Perspect.* 30, 249–274
6. Páez, D. et al. (2007) Social sharing, participation in demonstrations, emotional climate, and coping with collective violence after the March 11th Madrid bombings 1. *J. Soc. Issues* 63, 323–337
7. Samuel, S. (2020) How to help people during the pandemic, one Google spreadsheet at a time. *Vox* 16 April
8. Jordan, J. et al. (2020) Don't get it or don't spread it? Comparing self-interested versus prosocially framed COVID-19 prevention messaging. *PsyArXiv* Published online April 3, 2020. <http://dx.doi.org/10.31234/osf.io/uyu7x>
9. Drury, J. (2018) The role of social identity processes in mass emergency behaviour: an integrative review. *Eur. Rev. Soc. Psychol.* 29, 38–81
10. Pfattheicher, S. et al. (2020) The emotional path to action: empathy promotes physical distancing during the COVID-19 pandemic. *PsyArXiv* Published online March 23, 2020. <http://dx.doi.org/10.31234/osf.io/y2cg5>
11. Williams, W.C. et al. (2018) Interpersonal emotion regulation: implications for affiliation, perceived support, relationships, and well-being. *J. Pers. Soc. Psychol.* 115, 224
12. Bruk, A. et al. (2018) Beautiful mess effect: self–other differences in evaluation of showing vulnerability. *J. Pers. Soc. Psychol.* 115, 192
13. Pennebaker, J.W. and Harber, K.D. (1993) A social stage model of collective coping: the Loma Prieta Earthquake and the Persian Gulf War. *J. Soc. Issues* 49, 125–145
14. Vollhardt, J.R. (2009) Altruism born of suffering and prosocial behavior following adverse life events: a review and conceptualization. *Soc. Justice Res* 22, 53–97
15. Lim, D. and DeSteno, D. (2019) Past adversity protects against the numeracy bias in compassion. *Emotion* Published online September 17, 2019. <https://doi.org/10.1037/emo0000655>
16. Miller, D.T. (1999) The norm of self-interest. *Am. Psychol.* 54, 1053