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Resilience: A Silver Lining to Experiencing Adverse Life Events?

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Abstract

When adverse life events occur, people often suffer negative consequences for their mental health and well-being. More adversity has been associated with worse outcomes, implying that the absence of life adversity should be optimal. However, some theory and empirical evidence suggest that the experience of facing difficulties can also promote benefits in the form of greater propensity for resilience when dealing with subsequent stressful situations. I review research that demonstrates U-shaped relationships between lifetime adversity exposure and mental health and well-being, functional impairment and health care utilization in chronic back pain, and responses to experimentally induced pain. Specifically, a history of *some* lifetime adversity predicts better outcomes than not only a history of *high* adversity but also a history of *no* adversity. This has important implications for understanding resilience, suggesting that adversity can have benefits.

Keywords

cumulative lifetime adversity, resilience, stress inoculation, toughening, mental health and well-being, pain

Bad things happen. In fact, most people experience serious negative events at some point in their lives (Bonanno, 2004). Adversities such as physical/sexual assault, parental loss, and natural disaster have been associated with negative implications for mental health and well-being that can be long lasting (e.g., Edwards, Holden, Felitti, & Anda, 2003; Lucas, 2007). Furthermore, experiencing a higher number of adversities has predicted incrementally greater psychological problems (e.g., Breslau, Chilcoat, Kessler, & Davis 1999; Turner & Lloyd, 1995). However, despite the substantial body of evidence supporting the idea that negative life events have negative consequences, there is also reason to believe that, under the right circumstances, life adversity can promote subsequent benefits. In this article, I review theoretical and empirical work supporting the idea that, compared to experiencing either *no* adversity or *high* adversity, experiencing *some* adversity builds resilience—that is, it may increase the propensity for managing well in the face of future potentially stressful situations.

A Silver Lining?

Several theoretical perspectives suggest that facing difficulties can have benefits. This has been referred to, for example, as stress inoculation (e.g., Meichenbaum, 1993) and steeling (e.g., Rutter, 2006). Dienstbier's (1989) theory of toughness holds that limited exposure to stressors—with opportunity for recovery in between—can “toughen” individuals. Toughness results in psychological and physiological changes that make

people more likely to perceive stressful situations in general as manageable (rather than overwhelming) and to cope effectively with them. Importantly, both sheltering from all stressors and continuous exposure to stressors should fail to develop toughness. This parallels the development of physical fitness from aerobic exercise: Just as the body requires exertion to improve fitness, there is no opportunity for toughness to develop if someone has never coped with stress; likewise, physical overexertion can be harmful, and too much stress disrupts toughening. Theories of anxiety focusing on control and mastery (Mineka & Zinbarg, 2006) similarly suggest that experiencing low control and mastery in early life increases the likelihood of perceiving low control later in life. In contrast, experiencing high early control and mastery has the opposite effect later in life, which is beneficial because perceiving control and mastery in the face of stress can facilitate effective coping. Exposure to some stress should be more likely to provide an opportunity to experience control and mastery—and thus facilitate future control and mastery—than exposure to no stress or potentially overwhelming high levels of stress. The development of control and mastery should therefore overlap substantially with the development of toughness.

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Supporting these ideas, experiments with young monkeys showed that early exposure to intermittent stress subsequently resulted in responses consistent with greater resilience during unfamiliar stressful situations, relative to no stress exposure (e.g., Parker, Buckmaster, Schatzberg, & Lyons, 2004). In humans, Vietnam War veterans peripherally exposed to combat had larger improvements in psychological functioning than did veterans with direct exposure or no exposure to combat (Schnurr, Rosenberg, & Friedman, 1993). Also, children with moderate levels of early life stress exhibited smaller physiological stress responses than did those with either lower or higher levels (Gunnar, Frenn, Wewerka, & Van Ryzin, 2009).

Cumulative Lifetime Adversity: Resilience Versus Vulnerability

The above work suggests that it may be possible for even serious adverse life events—despite their very negative immediate consequences—to contribute to future benefits by increasing the propensity for resilience. My colleagues and I hypothesized that exposure to some adversity (i.e., low/moderate number of prior adverse events) should be more likely to promote toughness, control, and mastery than exposure to no or high adversity. This should result in quadratic (U- or inverse U-shaped) relationships between number of prior adverse events experienced and resilience-related outcomes, such that a history of some adversity—not no adversity—predicts the best outcomes.

Assessing adversity exposure

We have assessed adversity history with a measure of *cumulative lifetime adversity*, which refers to the total number of negative life events experienced by a person. Respondents reported whether they had ever experienced each of 37 negative events and the age(s) at which the events occurred. Events included serious illness and injury to oneself or loved ones, physical and sexual assault, a family member's death, divorce, and natural disaster. Participants could report up to four or six instances of each event. Summing the total number of instances across all events yielded cumulative lifetime adversity score.

An advantage of this cumulative lifetime adversity measure is that it accounts for individuals' full history of adversity, incorporating a wide variety of negative life events and using the total as a continuous scale. This was critical for our hypotheses, which necessitated differentiating between people with some exposure to adversity and those with no exposure. Assessing only a small number of adverse events can obscure important differences. For example, one person may have experienced four adverse events and another person zero, but if they complete a restricted measure (i.e., assessing one or only a few adversities), they could both easily report a total of zero. Such an assessment makes it impossible to investigate resilience associated with some adversity exposure, relative to

none. It is possible that relevant information regarding event importance or severity may be lost with this approach to measuring adversity. However, based on event count alone, experiencing some adverse events—relative to none or a high number—should be most likely to contribute to toughness, control, and mastery and thus subsequent resilience.

Predicting mental health and well-being

Resilience in the face of both mundane daily stress and major life adversity should influence people's mental health and well-being in important ways. To investigate this idea, Seery, Holman, and Silver (2010) administered the cumulative lifetime adversity measure to members of a large and diverse national survey panel (approximately 2,000 respondents), who were subsequently assessed multiple times over the next 2 years. Respondents reported four measures of mental health and well-being in these longitudinal assessments: global distress, reflecting several facets of past-week psychological distress; functional impairment, the extent to which physical and emotional health interfered with social and work activities; life satisfaction (unlike the other measures, positively valenced); and posttraumatic stress (PTS) symptoms, assessed specifically in reference to a recent collective trauma—the terrorist attacks of September 11, 2001.

We first tested a simple linear (straight-line) relationship between adversity and longitudinal mental health and well-being. Consistent with typical findings, greater adversity predicted significantly higher global distress, functional impairment, and PTS symptoms, and significantly lower life satisfaction over time. However, our hypotheses suggested that these linear relationships obscured underlying quadratic relationships—U-shaped (or J-shaped) for negatively valenced outcomes and inverse U-shaped for life satisfaction. Consistent with our hypotheses, statistical tests revealed significant quadratic relationships between adversity and longitudinal mental health and well-being, such that a history of *some* prior adversity was associated with *better* outcomes over time than not only a history of high prior adversity but also a history of no prior adversity (see Fig. 1).

Six months after reporting their lifetime adversity history, we asked respondents to report events that had occurred since that initial assessment. Using this information, we tested the association between prior adversity history and responses to recent adverse life events; specifically, did *lifetime* adversity influence the strength of the relationship between *recent* adversity and the four outcomes over the following 18 months? Importantly, every individual with a current lifetime history of some adversity must have at one point had a history of no adversity. Despite the likely negative immediate effects of those first adversities, such people nonetheless experienced the most favorable outcomes in our initial tests. This implies that although recent adversity may negatively affect people in the short term, over a longer period this prior experience can yield greater propensity for resilience.

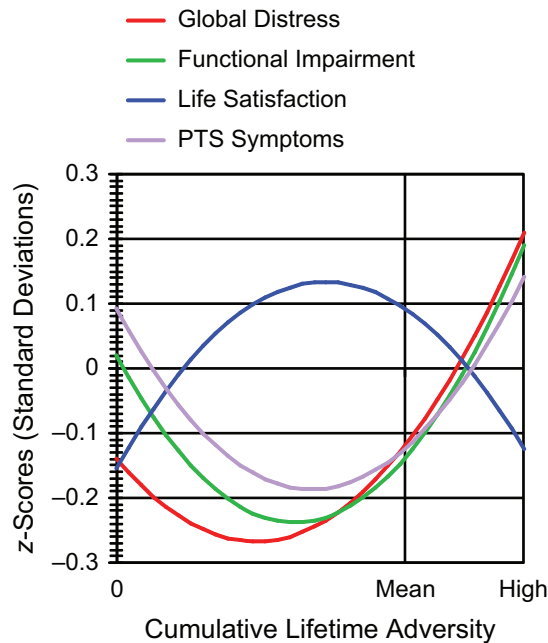


Fig. 1. The relationship between cumulative lifetime adversity history and standardized longitudinal mental health and well-being outcomes (mean = 0, standard deviation = 1). Outcomes are thus displayed in standard deviation units (e.g., 0.1 corresponds to a 0.1 z-score deviation from the mean of 0). Unlike the other three outcomes, life satisfaction is positively valenced. On the adversity scale, “0” represents no lifetime adversity and “High” represents an average high value (the mean + 1 standard deviation). Both points are within the range of adversity totals reported by respondents (adapted from Seery, Holman, & Silver, 2010).

We first found that greater recent adversity predicted worse outcomes over time: significantly higher global distress, functional impairment, and PTS symptoms and significantly lower life satisfaction. Hence, in the relative short term (18 months), newly experienced adversity was indeed associated with worse mental health and well-being. We next tested the extent to which the magnitude of this negative impact of recent adversity was moderated by quadratic lifetime adversity; in other words, was recent adversity worse for some people than for others, depending on their prior lifetime adversity? Results were consistent with our hypotheses, revealing significant quadratic moderation by lifetime adversity in a U-shape. Specifically, across the longitudinal outcomes, people with some prior lifetime adversity were less negatively affected by recent adversity than were people who had experienced a history of either no lifetime adversity or high lifetime adversity.

Predicting functional impairment and health care utilization in chronic back pain

The experience of pain provides an important context in which to study resilience. Chronic pain is common, costly, and potentially disabling. It is therefore critical to understand the factors that influence how well people manage such pain (e.g., why are some able to continue working but others not?). Using a

subset of chronic back pain sufferers taken from the same diverse national survey panel, Seery, Leo, Holman, and Silver (2010) investigated the relationship between cumulative lifetime adversity and two outcomes important for those afflicted with chronic back pain: functional impairment and health care utilization. Consistent with our hypotheses, significant quadratic relationships emerged, such that people with a history of some lifetime adversity—relative to those with a history of either no or high adversity—reported lower functional impairment. Specifically, some adversity predicted lower self-rated physical impairment and lower likelihood of characterizing current employment status as “disabled” (as opposed to paid employee, retired, unemployed but looking for work, etc.). Respondents with some adversity also reported lower health-care utilization than others: They sought less frequent physician treatment for chronic back pain, were less likely to use prescription painkillers to treat their back pain, and were less likely to be currently seeking treatment for depression (see Fig. 2 for representative results).

Predicting responses to experimentally induced pain

To further investigate the potential mechanisms underlying these observed relationships, Seery, Leo, Lupien, Kondrak, and Almonte (2011) conducted a laboratory study. After completing the lifetime adversity measure, healthy undergraduates were exposed to a standardized painful experience: immersing

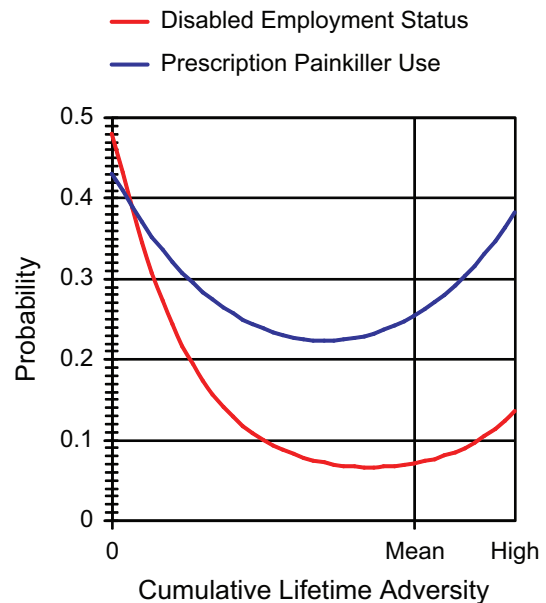


Fig. 2. The relationship between cumulative lifetime adversity history and the probability of endorsing “disabled” employment status (functional impairment) and prescription painkiller use for chronic back pain (health care utilization). On the adversity scale, “0” represents no lifetime adversity and “High” represents an average high value (the mean + 1 standard deviation). Both points are within the range of adversity totals reported by respondents (adapted from Seery, Leo, Holman, & Silver, 2010).

their hand in ice-cold water. During exposure, participants reported how intense the pain was. After removing their hand, they completed a measure of situational catastrophizing regarding the painful experience. Catastrophizing refers to negative cognitive processes about pain, including not being able to stop thinking about pain and fears of being overwhelmed by pain, and has important implications for people's ability to manage pain. Finally, participants reported how much negative emotion they were currently feeling. Results revealed significant U-shaped relationships: Relative to both no and high adversity, a history of some adversity was associated with lower situational catastrophizing, pain intensity, and negative emotion. Furthermore, catastrophizing was a significant partial mediator of the relationships between adversity and both pain intensity and negative emotion (i.e., catastrophizing statistically accounted for part of those relationships). In combination with the findings of Seery, Leo, et al. (2010), this suggests that propensity to catastrophize may partially explain why adversity history predicts functional impairment and health care utilization among chronic pain populations. Beyond the context of pain, it is also possible that catastrophizing—which should reflect low toughness, control, and mastery—could play a similar explanatory role when it comes to dealing with stress in general.

Conclusions and Future Directions

Taken together, these findings demonstrate that, relative to a history of either no or high cumulative lifetime adversity, a history of some adversity is associated with better mental health and well-being and less distress and disruption in the face of pain. Because adversity was not experimentally manipulated, it is not possible to conclude that differences in adversity history caused the observed outcomes. However, these findings are consistent with the explanation that experiencing low-to-moderate levels of adversity may contribute to development of subsequent propensity for resilience in the face of difficulties, be they major life events or relatively mundane hassles. For example, potentially stressful physical pain or workplace demands could seem manageable rather than overwhelming. This could be the case due to a variety of mechanisms, including generating individual toughness, creating a sense of mastery over past adversity, fostering perceived control and belief in ability to cope successfully, teaching coping skills, establishing effective social-support networks, and promoting cell growth in brain areas relevant for coping (e.g., Dienstbier, 1989; Lyons et al., 2010; Mineka & Zinbarg, 2006; Silver & Wortman, 1980). Without any adversity exposure, these resources may have little opportunity to develop; comparably, higher levels of adversity could prove overwhelming and disrupt them (e.g., fostering perceived helplessness, lack of toughness). Across the studies described, alternative explanations—including those based on age, social isolation, current symptoms of depression, and bias in recall of adversity history—were not supported.

Important issues remain to be further addressed. For example, it is unclear how long it takes for adversity experience to transition from negative immediate consequences to building propensity for future resilience. It is also possible that some adverse events are more likely than others to facilitate such a process (e.g., Silver & Wortman, 1980). Adversities perceived as manageable rather than overwhelming at the time may be particularly likely to contribute to toughness, control, and mastery (Dienstbier, 1989; Mineka & Zinbarg, 2006). Furthermore, major life adversities should not be the only contributors. Dienstbier (1989) suggested that mundane stressful events can foster toughness. DiCorcia and Tronick (2011) argued that infants develop a propensity for resilience based on successfully managing everyday stress, which is enabled by a caregiver who is neither underattentive nor overattentive. Neff and Broady (2011) found that among newlyweds with strong relationship resources (e.g., effective problem-solving skills), those who had faced moderate levels of daily stress early in the marriage exhibited greater resilience to future relationship stress than did couples who initially faced less daily stress. In other words, practicing putting coping resources to use was key. This further suggests that adversity experience may interact with other potential resources to influence resilience propensity. For example, the role of adversity may differ depending on genetic background (Rutter, 2006).

Finally, the findings discussed here should not be interpreted as minimizing the possible negative consequences of adversity or as advocating intentional encouragement of adversity. Bad things are still bad things. This work does, however, suggest that experiencing adversity may have an upside—a silver lining—in that it may help foster resilience.

Recommended Readings

- Bonanno, G.A. (2004). (See References). A highly accessible overview of the concept of resilience and misconceptions about it.
- Parker, K.J., & Maestriperi, D. (2011). Identifying key features of early stressful experiences that produce stress vulnerability and resilience in primates. *Neuroscience and Biobehavioral Reviews*, 35, 1466–1483. A comprehensive review of research showing that early life stress results in U- or J-shaped relationships with resilience-related outcomes in non-human primates, including experiments that would be impossible to conduct in humans.
- Rutter, M. (2006). (See References). An overview of resilience, highlighting broad implications that emerge from existing research.
- Seery, M.D., Holman, E.A., & Silver, R.C. (2010). (See References). A representative study that illustrates original research about the relationship between cumulative lifetime adversity and subsequent resilience, and provides additional discussion about related issues.

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Declaration of Conflicting Interests

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References

- Bonanno, G.A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59*, 20–28.
- Breslau, N., Chilcoat, H.D., Kessler, R.C., & Davis, G.C. (1999). Previous exposure to trauma and PTSD effects of subsequent trauma: Results from the Detroit Area Survey of Trauma. *American Journal of Psychiatry, 156*, 902–907.
- DiCorcia, J.A., & Tronick, E. (2011). Quotidian resilience: Exploring mechanisms that drive resilience from a perspective of everyday stress and coping. *Neuroscience & Biobehavioral Reviews, 35*, 1593–1602.
- Dienstbier, R.A. (1989). Arousal and physiological toughness: Implications for mental and physical health. *Psychological Review, 96*, 84–100.
- Edwards, V.J., Holden, G.W., Felitti, V.J., & Anda, R.F. (2003). Relationship between multiple forms of childhood maltreatment and adult mental health in community respondents: Results from the Adverse Childhood Experiences Study. *American Journal of Psychiatry, 160*, 1453–1460.
- Gunnar, M.R., Frenn, K., Wewerka, S.S., & Van Ryzin, M.J. (2009). Moderate versus severe early life stress: Associations with stress reactivity and regulation in 10–12-year-old children. *Psychoneuroendocrinology, 34*, 62–75.
- Lucas, R.E. (2007). Long-term disability is associated with lasting changes in subjective well-being: Evidence from two nationally representative longitudinal studies. *Journal of Personality and Social Psychology, 92*, 717–730.
- Lyons, D.M., Buckmaster, P.S., Lee, A.G., Wu, C., Mitra, R., Duffey, L.M., . . . Schatzberg, A.F. (2010). Stress coping stimulates hippocampal neurogenesis in adult monkeys. *Proceedings of the National Academy of Sciences of the United States of America, 107*, 14823–14827.
- Meichenbaum, D. (1993). Stress inoculation training: A twenty year update. In R.L. Woolfolk & P.M. Lehrer (Eds.), *Principles and practices of stress management* (2nd ed., pp. 373–406). New York, NY: Guilford Press.
- Mineka, S., & Zinbarg, R. (2006). A contemporary learning theory perspective on the etiology of anxiety disorders: It's not what you thought it was. *American Psychologist, 61*, 10–26.
- Neff, L.A., & Broady E.F. (2011, June 20). Stress resilience in early marriage: Can practice make perfect? *Journal of Personality and Social Psychology*. Advance online publication. doi:10.1037/a0023809
- Parker, K.J., Buckmaster, C.L., Schatzberg, A.F., & Lyons, D.M. (2004). Prospective investigation of stress inoculation in young monkeys. *Archives of General Psychiatry, 61*, 933–941.
- Rutter, M. (2006). Implications of resilience concepts for scientific understanding. *Annals of the New York Academy of Sciences, 1094*, 1–12.
- Schnurr, P.P., Rosenberg, S.D., & Friedman, M.J. (1993). Change in MMPI scores from college to adulthood as a function of military service. *Journal of Abnormal Psychology, 102*, 288–296.
- Seery, M.D., Holman, E.A., & Silver, R.C. (2010). Whatever does not kill us: Cumulative lifetime adversity, vulnerability, and resilience. *Journal of Personality and Social Psychology, 99*, 1025–1041.
- Seery, M.D., Leo, R.J., Holman, E.A., & Silver, R.C. (2010). Lifetime exposure to adversity predicts functional impairment and healthcare utilization among individuals with chronic back pain. *Pain, 150*, 507–515.
- Seery, M.D., Leo, R.J., Lupien, S.P., Konrad, C.L., & Almonte, J.L. (2011). *Cumulative lifetime adversity predicts catastrophizing, acute pain perception, and negative affect in healthy subjects*. Manuscript submitted for publication.
- Silver, R.L., & Wortman, C.B. (1980). Coping with undesirable life events. In J. Garber & M.E.P. Seligman (Eds.), *Human helplessness: Theory and applications* (pp. 279–340). New York, NY: Academic Press.
- Turner, R.J., & Lloyd, D.A. (1995). Lifetime traumas and mental health: The significance of cumulative adversity. *Journal of Health and Social Behavior, 36*, 360–376.