

Resilience in Individuals and Communities

OVERVIEW

This document provides a review of the scientific community's current understanding of why some individuals thrive in response to adversity while others do not, and suggests ways to foster resilience by putting resilience science into action in the real world.

Resilience

the capacity of an individual or system to successfully change or adapt in response to disturbances or threats

Stress

neurobiological response to adversity or disruption in the adaptive functioning of an individual or system

Adversity

difficulties or hardships that threaten to negatively affect the development or survival of an individual or system

Risk factors

attributes, exposures, or experiences that increase the likelihood of undesirable outcomes

What is resilience?

Anecdotally, resilience is the capacity of an individual or community to persevere in the presence of very challenging circumstances. The scientific term **resilience** refers to the way a system adapts and survives in response to changes, disturbances, or threats. In behavioral science, resilience refers generally to positive adaptation (or change) in the face of **stress** or **adversity**. Identifying how resilient a person is depends on two factors: how much exposure that individual has had to adversity, and how well that person is doing in response to that exposure.

Historically, public health research related to resilience was focused on identifying those most at risk for negative outcomes and finding ways to reduce the likelihood or severity of these problems. More recently, many resilience researchers have moved toward balanced models that seek to identify how and why many individuals thrive in the face of adversity, and what can be done not only to reduce risk but also to promote positive outcomes among high-risk populations when rearing conditions are suboptimal. This shift takes advantage of the finding that promoting competence and success is one of the most effective ways to prevent or reduce poor developmental outcomes. An additional focus of modern resilience research is on finding ways to link what is known about resilience across levels and disciplines, from genetics to neuroscience to behavioral science.

Importantly, a central theme that has emerged from resilience research is that resilience is *ordinary and normative* (i.e., not exceptional or rare) and “emerges from ordinary resources and processes”¹. In other words, most people are remarkably resilient in the face of adversity, and the same factors that operate to produce healthy development in general (e.g., a healthy brain, a close relationship with a caregiver, a stable community) are also important for resilience.

Risk factors for stress and adversity

Risk factors are “predictors of undesirable outcomes, where there is evidence suggesting a higher-than-usual probability of a future outcome”¹. Risk factors can be attributes of the environment (e.g., neighborhoods with high levels of crime), family (e.g., low income), or the individual (e.g., low birth weight). A

Cumulative risk

the sum of risk factors that occur together and build up over time

Developmental cascades

spreading effects across levels of a domain, among domains at the same level, or between systems; these cascades can be positive or negative

single risk factor such as malnutrition can be a proxy for underlying processes that are fundamental for many aspects of physical and cognitive development, and thus can have widespread effects on an individual's developmental outcome. In addition, many major risk factors (e.g., divorce, death of a family member) are actually amalgamations of many smaller stressors (e.g., financial strains, disruptions in schooling). While it is possible for children to be exposed to risk factors individually, risk factors often occur together, lead to one another, and accumulate over time ("risk predicts risk"). This co-morbidity and accumulation of risk factors is known as **cumulative risk**. Research has shown that as cumulative risk increases, behavioral and emotional problems also increase^{2,3}. In addition, risk factors can lead to **developmental cascades**, also known as snowballing or domino effects, in which a disruption or perturbation in the development of one system or process disrupts the subsequent development of other systems and so on (it is important to note that developmental cascades can also be positive, as the healthy development of systems promotes further healthy development).

Protective factors for resilience

Resilience has been studied in individuals, families, and communities in response to a number of different adverse conditions ranging from poverty to war. From this body of research, a number of factors have been consistently identified as correlates (or predictors) of psychosocial resilience. These protective factors, referred to by prominent resilience researcher Ann Masten as the "Short List" of resilience factors, are presented in [Table 1](#). As mentioned previously, many of these factors are important not only for resilience but for good development in general, suggesting that there are fundamental systems that promote adaptive development regardless of circumstances. For example, maternal warmth and a positive home atmosphere are factors associated with positive outcomes in general, but were found to be particularly beneficial in buffering children from the negative outcomes associated with bullying⁴.

Models of resilience

Researchers attempt to understand resilience by testing models that examine how specific threats (risk factors) and/or assets (protective factors) directly or indirectly influence outcomes. These models attempt to understand how variation in factors at the level of the individual, family, or environment are related to variable levels of resilience. These models serve as frameworks for identifying which factors are important to resilience, understanding how these factors contribute to resilience, and developing interventions that are likely to be effective. There are three basic kinds of models that guide the design of studies intended to test hypotheses related to resilience: compensatory, mediator, and moderator models.

TABLE 1. **“Short List” of Resilience Factors**

| Resilience factor | Why is it adaptive? |
|---|--|
| Effective caregiving and parenting quality | A strong attachment to a caregiver is a hallmark of positive development and has been found to be fundamentally important to resilience. Some of the most effective resilience interventions have focused on strengthening the quality of caregiving and attachment in the lives of high-risk children. |
| Close relationships with other capable adults | As children get older, close relationships with non-caregiver adults, such as teachers, can also protect against the harmful effects of adversity. When the child-parent relationship is disrupted due to adversity, these relationships become even more important. |
| Close friends and romantic partners | Close relationships with friends and romantic partners become increasingly important for resilience in the face of adversity as individuals reach adolescence and young adulthood. |
| Intelligence and problem-solving skills | There is evidence that intelligence can have a protective influence on resilience in situations of extreme adversity (perhaps due to better problem-solving skills). There is also the possibility that intelligence is not always adaptive for resilience, as there are cases where a lack of understanding can be protective. |
| Self-control; emotion regulation; planfulness | Self-regulation skills (the capacity to control one’s attention, emotion, arousal, and actions) are critical for healthy development, the capacity to adapt to changing circumstances, and resilience. Highly reactive individuals might especially need an effective system of self-control (or external sources of self-regulation) to adapt to and recover from adversity. Executive function (EF) skills such as working memory and inhibitory control are thought to be particularly protective for high-risk children, and have been found to be responsive to intervention. |
| Motivation to succeed | Humans are intrinsically motivated to master their environment, which serves the adaptive purpose of encouraging learning and promoting the development of competence. Neglected children who are not given sufficient stimulation and/or opportunities to play are at heightened risk for depression and losing the motivation to succeed in contexts of adversity. |
| Self-efficacy | See the Spotlight on self-efficacy box for a discussion of the link between feelings of agency/control and resilience. |
| Faith, hope, belief life has meaning | In many studies of resilience, positive outcomes have been associated with hope, optimism, and faith. The belief that life has meaning can help individuals cope with a loss of personal control. |
| Effective schools | Most children spend more time in school than any other organized system, and schools nurture many of the factors discussed above. They are also an indicator of a functioning society and can provide stability amidst chaos. |
| Effective neighborhoods; collective efficacy | Like families and schools, communities can provide structure and stability in the face of adverse conditions. Being a part of a community with collective goals can also foster feelings of agency, pride, and motivation. |

SPOTLIGHT ON

Self-efficacy as a protective factor for resilience

Feelings of self-efficacy and control or agency over one's environment make children more likely to try to overcome challenges, while feelings of powerlessness reduce motivation and make children more likely to give up in the face of adversity. Children and adolescents deprived of the opportunity to exert control over their lives due to bullying, abuse, or discrimination may become depressed or turn to anti-social activities where the opportunity for experiencing mastery can be met. For example, adolescents who feel they have no control over their lives or their environments are especially vulnerable to recruitment efforts from gangs or terrorist groups. Such groups can offer disaffected individuals a sense that they have control over their lives and that their actions have meaning.

Being provided opportunities for control in the context of (or following) adversity can lead to a restored sense of agency and pride in making active choices that lead to positive change.

Compensatory (main effect) model: This type of model tests whether or not one or more factors contribute directly to positive outcomes (Figure 1a). Factors can be assets (i.e., things that have a positive effect when they are present), risk factors (i.e., things that have a negative effect), or bipolar (i.e., things that can be positive in some contexts or when present to some degree, but negative in other contexts or when present to a different degree). For example, a model might test the direct effects of nutrition (asset), child abuse (risk factor), and family income (asset when high, risk factor when low) on school readiness. Interventions based on this kind of model would focus on preventing or reducing risk factors, adding new or strengthening existing assets, or making the bipolar variable more positive.

Mediator model: It is not always the case that risk factors affect outcomes directly. Mediator models test how a factor affects positive outcomes indirectly, through its influence on a third variable (known as a **mediator** variable, Figure 1b). For example, a multi-year longitudinal study of Iowa farm families found that economic hardship affected adolescents indirectly via effects on their parents, such as changes in mood and marriage quality⁵. Interventions based on mediator models seek to improve or protect the mediator if the risk factor cannot be reduced/eliminated. For example, an intervention based on the Iowa farm families study might attempt to provide emotional support to parents as a way to maximize positive outcomes for adolescents exposed to economic hardship.

Mediator

A variable that explains the relationship between two other variables

Moderator

A variable that affects the direction and/or strength of the relationship between two other variables

Moderator model: In some cases, the direct effect a risk factor has on an outcome is affected by one or more other variables (known as **moderator** variables, Figure 1c). Moderators can either strengthen or weaken the effect of a risk factor. For example, a close relationship with a responsive caregiver can buffer children from the effect of being exposed to violence, whereas having a

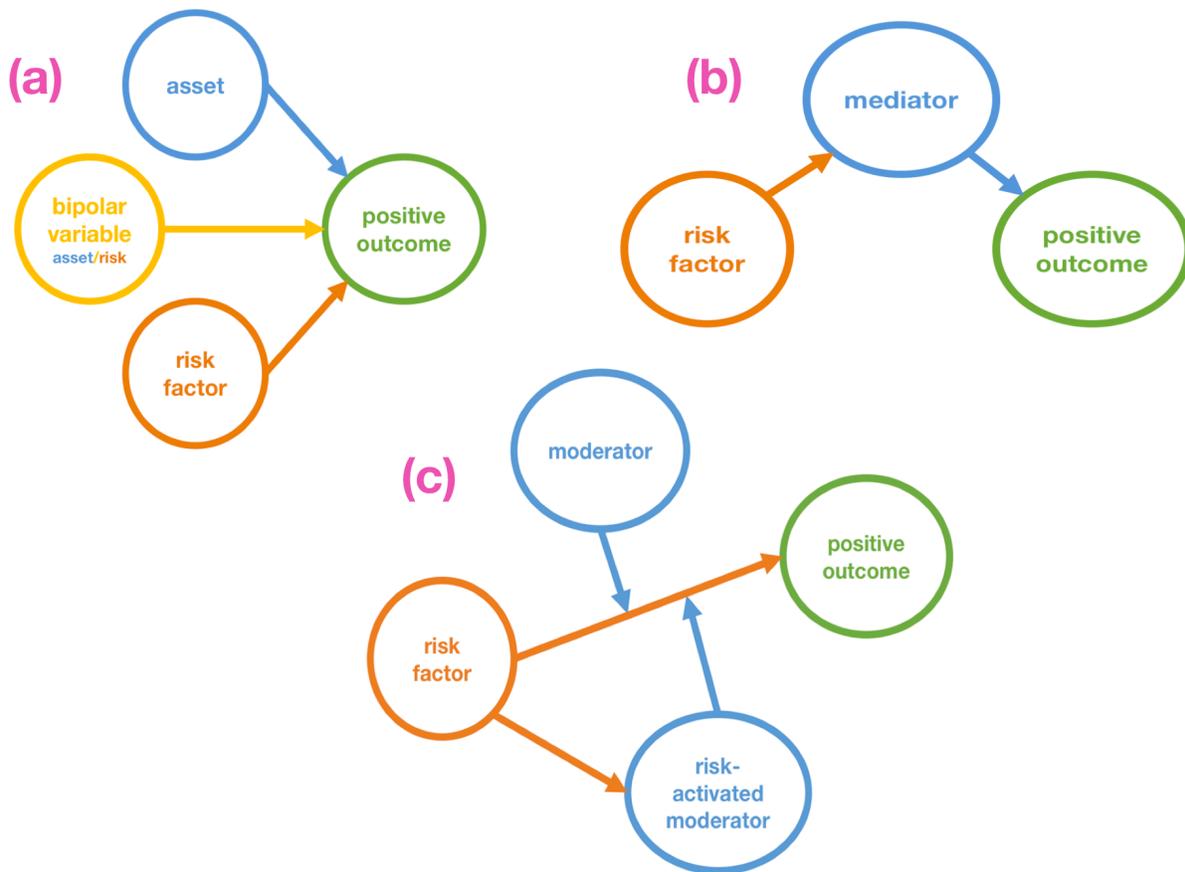


Figure 1. Example models of resilience from Ordinary Magic. (a) A compensatory model tests for the direct effect(s) that risk factors and assets have on outcome. (b) A mediator model tests how a factor affects outcome indirectly through its influence on another variable. (c) A moderator model tests how the relationship between a factor and outcome is affected by a third variable.

highly reactive temperament can worsen the effect of violence exposure. Moderators can be factors that are always present, or they can be risk-activated (much as antibodies are triggered by the immune system in response to infection).

Using resilience science to guide action

While our scientific understanding of resilience continues to emerge, it has been a priority of resilience researchers from the start to “glean knowledge, however limited, to guide efforts to promote resilience even as the research continued”¹. Dr. Ann Masten explains her general resilience framework for action in terms of the “Five Ms”: mission, models, measures, methods, and multilevel/multidisciplinary approaches.

Mission: A successful resilience framework for action has the dual mission of preventing negative outcomes *and* promoting positive outcomes. Framing goals in positive (e.g., prosocial development) rather than negative (e.g., preventing

delinquency) terms can decrease the stigmatization that is sometimes associated with intervention programs and possibly make people more motivated to participate.

Models, Methods, and Measures: Effective interventions can seek to promote resilience through one or more of the following methods shown in the model depicted in Figure 2. Interventions to improve resilience outcomes should include both elements that promote positive processes as well as elements that prevent or limit exposure to risk factors. To assess the effectiveness of intervening in any of these ways, it is crucial to include measures of positive behaviors in addition to measures of symptoms or deficits. A focus on assessing only symptoms (or a lack thereof) can miss progress that has been made in promoting positive outcomes.

Multilevel/Multidisciplinary Approaches: As shown in the model in Figure 2, interventions can simultaneously target change in many ways at once. Interventions can attempt to enact change across levels (e.g., individual, family, school, community, nation) and across disciplines (e.g., improving nutrition and reading development).

When putting resilience science into action in the form of intervention programs guided by the framework just discussed, it is important to consider

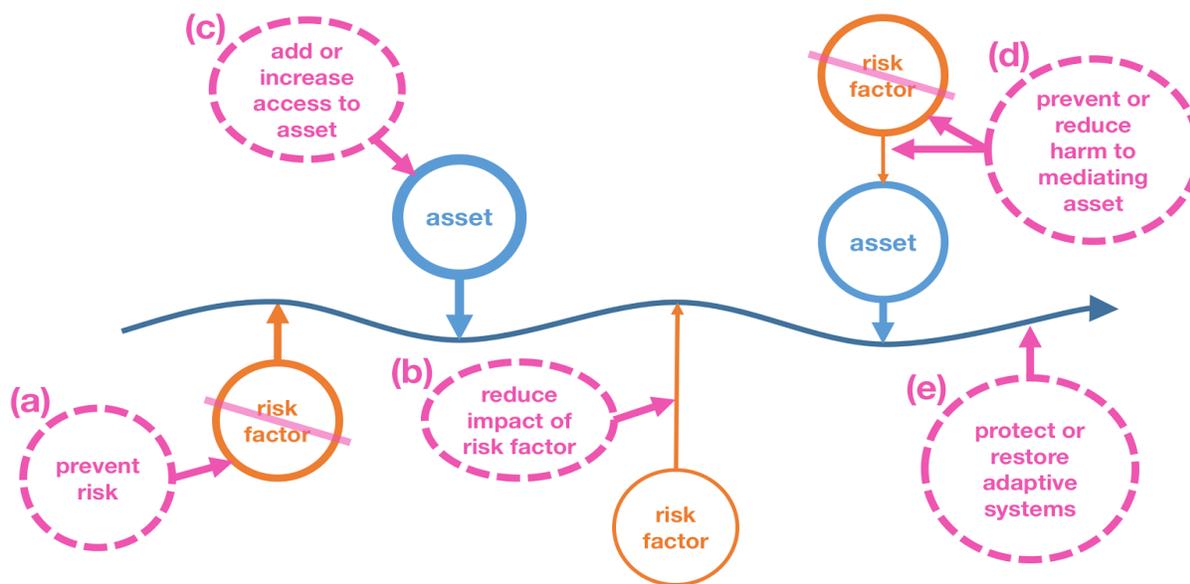


Figure 2. Possible ways to foster resilience through intervention. [Model based on Figure 11.1 in Ordinary Magic¹] Interventions can seek to: (a) prevent risk factors from occurring, (b) reduce the negative effects of or exposure to risk factors, (c) add positive resources to a child’s life or make existing resources more accessible, (d) prevent risk factors from harming children indirectly through negative effects on protective factors such as parents, (e) protect or promote the development of adaptive systems (this can include individual capabilities like self-control, or sociocultural systems like schools).

Sensitive period

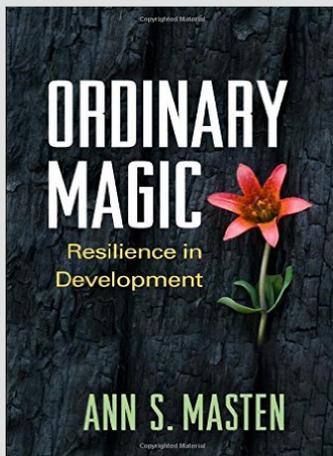
period of time in which a developing system is particularly responsive to environmental input and open to change; time of increased “plasticity”

timing. There are periods of development, commonly referred to as **sensitive periods**, in which certain systems are more “plastic” or open to change. Early childhood and adolescence are both periods of great transition and change for many neurobiological and behavioral systems, and therefore optimal targets for effective intervention.

Developing practical and implementable interventions while maintaining vigorous scientific standards presents a challenge to researchers, policy makers, and service providers. It is thus imperative for these groups to maintain open lines of communication and work together to develop increasingly effective ways to promote resilience.

SPOTLIGHT ON

Resilience science



Much of the information in this review was gathered from *Ordinary Magic: Resilience in Development*, a 2014 book written by Ann S. Masten, PhD. Dr. Masten is a professor in the Institute of Child Development at the University of Minnesota and a leading researcher of resilience in development. Her book provides an engaging and comprehensive review of the field of resilience science from its inception to the present day.

Additional resource:

Inside Resilient Children (PopTech talk, 2013)

<https://www.youtube.com/watch?v=GBMet8olvXQ>

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