Current theories relating to resilience and young people

A literature review

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Introduction

In the 1970s, researchers investigating children at risk for psychopathology noted that some children had good outcomes despite being exposed to risk. This discovery stimulated a search for specific differences in children who thrive in the face of adversity, and generated a field of research on resilience. The concept of resilience was significant as it signified a change in focus from mental illness to mental health. This changing focus created a surge of research on protective factors that promote mental health and positive development in the face of risk.

While the utility of resilience is at times questioned in research, this change in focus has provided rich data on what is working for young people, rather than the previous preoccupation with what is going wrong. Trajectories of positive development despite adversity have been identified which provide the opportunity for altering future trajectories for those exposed to adversity. Importantly, resilience research provides data that has the potential to significantly improve the psychological, educational, social and emotional outcomes in young people. A positive shift in their health affects not only their current functioning, but also their future functioning in society as adults. Consequently, addressing youth resilience has implications for health at the individual and societal levels.

To provide a basis for understanding resilience, this paper will provide a narrative summary of six of the key theorists in the field of resilience, namely Michael Rutter, Norman Garmezy, Emmy Werner, Suniya Luthar, Ann Masten and Michael Ungar. A definition, the key elements of theory, empirical underpinnings, use in practice and changes in thinking over time will be discussed for each theorist. Following this discussion, points of convergence and divergence between theorists will be presented to identify areas where there is consensus or disagreement. In the next section, limitations, uncertainties and continuing debates will be discussed. From these limitations and points of agreement, recommendations will be made for applied action in the future.

Methodology

The search terms for this review included: adolescents, adolescence, youth, resilience, protective processes, risk, wellbeing, Rutter, Garmezy, Werner, Luthar, Cicchetti, Masten, and Ungar. A wide range of databases were searched to obtain current and historical publications. These databases included Proquest, EBSCO host and PsycARTICLES, and all databases available through Edith Cowan University (ECU) library. Additionally, search terms were entered into Google Scholar to ensure that articles not associated with databases were identified. The years between 1950 and 2014 were searched. These years were selected to capture early emerging research in resilience and to identify current trends.

The rationale for comparing and contrasting the authors was based on several principles: recognition in the field of resilience, research methodology, definitions of resilience, signs of risk and competence, and models of resilience. These points were chosen as they are the key points of difference and similarity between each theorist. They are also the significant concepts associated with resilience.

Theories/definitions/empirical support/informed interventions

Michael Rutter

Professor Sir Michael Rutter is a professor of child psychiatry and has written extensively on child development, school effectiveness, autism, infant deprivation and resilience. Professor Rutter is based in London and has been conducting research on resilience since the late 1970s through to the current day.

Definition

In 2006, Rutter defined resilience as, "An interactive concept that is concerned with the combination of serious risk experiences and a relatively positive psychological outcome despite those experiences" (Rutter, 2006). He makes the point that resilience is more than social competence or positive mental health; competence must exist with risk to be resilience. His definition has remained stable over time, with his 2013 definition stating that resilience is when, "Some individuals have a relatively good outcome despite having experienced serious stresses or adversities – their outcome being better than that of other individuals who suffered the same experiences" (Rutter, 2013). Much of Rutter's work is based on his early research into children of parents with schizophrenia. In this work, he was originally focused on psychopathology and then noticed that some children were experiencing the risk but emerging relatively unscathed. This encouraged Rutter to search for competence in children who had experienced adversity, rather than his original focus on pathways of psychopathology.

Empirical underpinnings

One of Michael Rutter's seminal studies is the Isle of Wight study carried out between 1964 and 1965 (Rutter, 1979). In this study, he compared children from the Isle of Wight with children from an underprivileged inner borough in London. Within the study, risk was identified as one of six variables, namely, severe marital discord, low socioeconomic status, overcrowding or large family size, parental criminality, and mothers experiencing a psychiatric disorder.

The data from this study showed that the more risks children were exposed to, the more likely they were of experiencing a psychiatric disorder. Specifically, with no risk or one risk, there was a 1% chance of experiencing a psychiatric disorder, whereas with four or more risks there was a 21% chance of experiencing a psychiatric disorder (Rutter, 1979). While these figures do not represent the number of protective factors present, they are a clear indicator that cumulative risks are linked to poorer outcomes for children at risk.

The Isle of Wight study included some twins whose mother was affected by schizophrenia. Rutter investigated parent–child relationships within these dyads to assess the impact of relationships on psychopathology. He found that when a twin had parental affection and a good relationship with either parent, they had a 25% chance of experiencing a psychiatric disorder. Conversely, twins who lacked a relationship with either parents had a 75% chance of experiencing a psychiatric disorder (Rutter, 1979). The finding that positive parent–child relationships have a significant influence on children's outcomes is a recurring theme in resilience research.

A comparison of schools within the Isle of Wight and the underprivileged inner borough in London found a marked difference in delinquency, behavioural disturbances, attendance patterns and

academic attainment between schools (regardless of child background and characteristics), with one school reporting three times the delinquency rate of other schools. The data indicated that schools with lower rates of problems were associated with greater effectiveness in classroom management techniques (high structure, preparation and planning), an emphasis on homework and exams, allowing pupils to assume responsibility for their actions and activities, and the maintenance of a prosocial atmosphere. These findings indicated that the school environment could have a significantly positive influence on a child's wellbeing, in addition to the effect of the family.

In addition to this Isle of Wight study, Rutter has also completed a broad range of research with orphans who have experienced institutional deprivation (Rutter, 1998, Rutter, 2008). In one study, Rutter noted that early psychological privation appeared to have a greater impact on long-term wellbeing than the early privation of nutrition (Rutter, 1998). In another study, Rutter and his colleagues looked at adolescent outcomes for adoptees from the United Kingdom (UK) who had not experienced deprivation, and adoptees from Romanian institutions (adopted between 1990 and 1992) who had experienced deprivation (Rutter et al., 2007). There were 165 children in the sample, who had been adopted either before six months of age, between 6 and 24 months, or between 24 and 42 months. Of the 165 adopted children, 52 UK children had not experienced institutional care or severe deprivation.

Data was collected when the children were 4, 6 and 8 years of age through intensive parent interviews and parent-completed behavioural and family relationship questionnaires. At age 11, children were interviewed and they completed cognitive and developmental measures. The children were also observed and parents and teachers completed questionnaires on behavioural and emotional adjustment, peer and family relationships, and children's behaviour. Some of the variables measured included institutional care, the child's state on arrival, possible family functioning risk factors, disinhibited attachment, quality of peer relationships at 11, and behavioural and emotional problems.

A key finding from this study was that the attachment disorder of disinhibited attachment was significantly more common in Romanian adoptees than UK adoptees (Rutter et al., 2007). The researchers noted that this disinhibited behaviour persisted into adolescence, however if the adoptee did not have disinhibited behaviour as a child it did not emerge in adolescence (Rutter et al., 2007). The longitudinal data also indicated that if the adopted child had disinhibited behaviour as a child there was a strong chance that they would develop other forms of psychological difficulties. Rutter and his colleagues found no evidence that the post-adoption environment had any effect on attachment. These persistent difficulties in the face of significant environment change provide support for Rutter's recent emphasis on the importance of biological influences on behaviour.

Key elements of theory

Rutter has established several principles for resilience theory based on his extensive research (Rutter, 2006, Rutter, 2007, Rutter, 2012, Rutter, 2013). One of the principles Rutter adheres to is that resilience is not related to individual psychological traits or superior functioning, but rather it is an ordinary adaptation given the right resources. He openly criticises the ideas of 'superkids' or 'invulnerables' and suggests that individual differences in resilience may be due to genetic effects that make some children more or less susceptible to environmental change or physiological responses to environmental hazards. He emphasises that it is the environment, not the child, that is the catalyst for these differences.

Rutter takes a lifespan approach to resilience, as he states that resilience is "not the chemistry of the moment" but something that may be more evident at different times in one's life (Rutter, 2007). He asserts that children can be resilient in relation to some risks and not others, therefore different risks and environmental changes can result in a child showing resilience or lack of resilience at different points in time. For example, a child may show resilience during their parents' divorce but not when they fail academically. Luthar and other researchers align with this perspective, and suggest it would be unlikely that any individual would be resilient in all situations across their life span.

Rutter asserts that individual differences (e.g. genetics, personality, temperament) create differences in how each person responds to risk and protective factors. He states that there is a "requirement to assess individual needs in relation to particular circumstances, rather than assume that all risk and protective factors have similar effects in all conditions in all people" (Rutter, 2013). He states that in some cases, resilience can result from factors that have no effect or are risky in the absence of a risk experience. For example, being adopted is at times identified as a risk but it can be a protective factor and an improvement from abusive/neglectful parents. Therefore, the utility of protective factors and the impact of risk factors are dependent on the context and the child's individual situation. Rutter's comments indicate that the universal lists of risk and protective factors provide a general guide but they do not take into account context and individual differences.

Rutter raises the important point that causal, mediating and moderating risk factors need to be better understood, as not all identified putative risk factors constitute a risk in all circumstances. For example, while divorce is frequently identified as a risk, it is actually only a risk when there is parental discord/conflict. Consequently, the discord is the causal risk factor that contributes to risk, not the divorce alone. Similarly, socioeconomic status is a mediating risk factor, as it does not have a directly negative effect on children and adolescents' outcomes. The indirect effects of poverty that contribute to risk are lack of resources, opportunities, or reduced access to health care. Accordingly, Rutter proposes that more work needs to be done to identify these causal, mediating and moderating risks.

The importance of low-level risk or challenge is also supported by Rutter. He suggests that some risk is essential and a normal part of development. Exposure to low-level risk (rather than avoidance) can lead to better resistance and coping skills. Rutter labels these "steeling events" and compares brief exposure to risk as "inoculation". He states "resistance to infections does not come from avoiding all contact with the pathogens; such avoidance is likely to increase vulnerability rather than promote resilience" (Rutter, 2013). However, it is important to note that these experiences should be controllable experiences of stress, as it is uncontrollable experiences that lead to adverse outcomes.

Rutter has a strong belief in biological and genetic influences in risk and resilience. He states that there is a need to identify environmental risks that alter genes and biological functioning, as resilience may be constrained by biological programming and stress/adversity can have a damaging effect on neural structures. This was evident in his studies of the Romanian orphans from the depriving institutions. Despite experiencing positive environments and good care after adoption they continued to experience negative outcomes well after their adoption. Given the influence of the gene–environment interaction, Rutter suggests that professionals working with at-risk young people attend to biological as well as psychological pathways.

One of the key discussion points in each of Rutter's papers is the protective factor of mental features/operations (planning, self-control, self-reflection, sense of agency, self-confidence,

determination). Rutter suggests that individuals who possess these mental features have both control and success at changing events. Consequently, he proposes that it may be the individual's mental features that alter how they deal with adversity, rather than any possible protective environmental effects. He suggests that positive coping may mediate the effect of risk and lead to outcomes that are more positive; therefore, it would be beneficial to teach mental features through experiential teaching.

A second protective factor emphasised by Rutter is the importance of social relationships. He indicates factors such as maternal warmth, sibling warmth and a positive atmosphere in the family as protective against emotional and behavioural disturbances.

Finally, Rutter highlights the significance of "turning point experiences". Turning point experiences are moments in an adult's life where there is a "discontinuity with the past that removes disadvantageous past options and provides new options for constructive change" (Rutter, 2013). At turning points, individuals can show resilience despite having non-resilient outcomes throughout childhood and youth. He suggests professionals look at how to introduce turning points into adulthood through mentoring or the development of new relationships.

Rutter, similar to other researchers, does not indicate that any protective factor is of greater value than another. Instead, he offers a selection of factors that correlate positively with resilient outcomes. To ascertain if one factor is more powerful than another, one would need to undertake a randomised controlled study. Even with those conditions, it would be difficult to separate protective factors as they frequently operate in groups. For example, an individual with more family social support is likely to have greater family cohesion, and may also have better mental operations through the social interactions they have experienced. Consequently, these factors require further testing in experimental models prior to making any assertions over differential impact.

Norman Garmezy

Dr Norman Garmezy was a clinical psychologist and is often noted as being the founder of research in resilience. His research began with a focus on schizophrenia and mental illness and shifted to research on stress resistance, competence and resilience. Garmezy was the founder of Project Competence, a longitudinal study into positive outcomes in at-risk children. His research was based at the University of Minnesota in the United States of America.

Definition

Garmezy defined resilience as, "not necessarily impervious to stress. Rather, resilience is designed to reflect the capacity for recovery and maintained adaptive behavior that may follow initial retreat or incapacity upon initiating a stressful event" (Garmezy, 1991a). Garmezy makes the point that all children experience stress at some time, and resilient children are not "heroic" compared those children who "meet similar situations with retreat, despair, or disorder" (Garmezy, 1991b). To be resilient, Garmezy states that one needs to show "functional adequacy (the maintenance of competent functioning despite an interfering emotionality) as a benchmark of resilient behavior under stress" (Garmezy, 1991a).

Empirical underpinnings

Norman Garmezy was the lead researcher in 'Project Competence', one of the landmark studies in the field of resilience (Garmezy, 1987). This study was conducted in Minnesota in the Unites States of America and its focus was on identifying competence rather than psychopathology in children of parents experiencing schizophrenia. This was divergent from previous studies whereby children's pathways of psychopathology were the focus.

Project Competence consisted of two groups of children: those children whose biological mothers experienced schizophrenia, and similar-aged children whose mothers did not experience schizophrenia. The second group of children, those whose mothers did not experience schizophrenia, were referred by schools or community child guidance clinics. These children all had a diagnosis of conduct disorder (extemalisers), over-inhibited (intemalisers), or hyperactive. The social and motivational competence of each group was measured through peer sociometric measures and teacher ratings and each child's attentional functioning was also measured. The results indicated that children from the second group who were diagnosed as antisocial rated lowest in peer and teacher acceptance. The researchers found that except for the children with conduct disorder, most children were not 'deficit ridden' and suggested that the absence of disorder indicated that there were some unknown protective factors operating. At this stage of his research, he had not identified these factors.

In a follow-up study Garmezy attempted to better understand the protective and risk factors in stress-resistant children (Garmezy et al., 1984). In this study, there were three groups of children: a community-based sample, children with life-threatening congenital heart defects, and children with severe disabilities who had been mainstreamed after spending most of their life in a special school. Measures of competence included sociometric methods with peers, motivational and citizenship qualities via teacher judgements, and cognitive assessments through an abbreviated Intelligence Quotient (IQ) test, school records, and individually administered achievement tests.

Garmezy identified sex, IQ, socioeconomic status (SES), and parental competence qualities as factors that modified competence (Garmezy et al., 1984). Children with greater assets (higher IQ, higher SES and positive family attributes of cohesion and stability) appeared to be more competent and socially engaged with their peers than children with low assets. Specifically, family stability (number of family moves, marriages, jobs, upkeep of home) and family cohesion (frequency of family activities, level of manifest affection, presence of rules, adequacy of communication) modified competence and stress. Children within families that had high cohesion and stability were more intelligent, more competent, and less likely to become disruptive under high levels of stress. Conversely, children with low family cohesion and stability were less intelligent, less competent and more likely to be exposed to high levels of stress.

The quality of a child's social engagement in school was related to IQ, SES and social comprehension (interpersonal understanding, problem-solving, humour comprehension, appreciation and production). For example, higher SES was protective against disruptive-aggressive responses to stress and, overall, children with fewer assets were more disruptive particularly under stress. Garmezy noted that risk factors appear to be cumulative in their effect, reducing children's engagement and enhancing disruptiveness.

Garmezy concluded that resilience (or competence) was linked to a low number of risks and higher number of protective factors. Similarly, less resilient children had cumulative risks and a lower number of protective factors. Garmezy stated, "Government, by providing protective factors, enables some who would otherwise be lost to a fruitful life to move above the threshold of competence needed to survive in an increasingly complex, technological society" (Garmezy, 1987). This statement suggests that Garmezy believed the environment around the child contributed significantly to the outcomes of children experiencing stress.

Key elements of theory

Garmezy held an ecological view of resilience; based on this view he contended that protective factors at the individual and familial levels, and external to the family, all influence resilience. Some of these influences include:

1. **Individual factors** – dispositional attributes of the child such as temperament (activity level), how one meets new situations (positive responsiveness to others), and cognitive skills.
2. **Familial factors** – family cohesion and warmth (despite poverty or marital discord), the presence of a caring adult in the absence of responsive parents (such as a grandparent), or a concern by parents for the wellbeing of their children.
3. **Support factors** – external to family, and included the availability and use of external support systems by parents and children, a strong maternal substitute, a supportive and concerned teacher, or an institutional structure that fosters ties to the larger community (church, social worker).

Through Garmezy's research he developed three models that explained resilience (Garmezy et al., 1984):

Compensatory model – This is an additive model, where stressors lower competence and personal attributes improve adjustment. Stress factors and attributes combine together in predicting competence. For example, a child may experience a high-conflict home environment and a warm, close relationship with a grandparent. If the child is resilient it may be because the grandparent relationship compensates for the home environment.

Protective vs. vulnerability model (**Immunity vs. vulnerability**) – This is an interactive relationship between stressors and personal attributes, whereby the association of stress with the outcome varies depending on the level of the attribute under consideration. For example, a child in high poverty may have a cohesive home environment which interacts with the poverty to decrease risk.

Challenge model – This is a curvilinear relationship, where stressors enhance adjustment but not at very low or very high levels. Very high levels of stress lower competence. The basis of the challenge model is that some stress is helpful for young people as it can develop coping skills and encourage them to mobilise internal and external resources.

Emmy Werner

Dr Emmy Werner is a developmental psychologist and works as a professor emerita at the University of California. Her longitudinal study of infants born in Kauai, Hawaii was a groundbreaking study in resilience that provided evidence that not all children succumb to adverse life events.

Definition

Werner defined resilience as, "The capacity [of individuals] to cope effectively with the internal stresses of their vulnerabilities (labile patterns of autonomic reactivity, developmental imbalances, unusual sensitivities) and external stresses (illness, major losses, and dissolution of the family)" (Werner, 1982). Simply phrased she describes resilience as those children who "worked well, played well, loved well, and expected well" (Werner, 1982).

Empirical underpinnings

Emmy Werner's longitudinal study of 698 infants born in 1955 on the island of Kauai is another landmark study that sheds light on resilience processes (Werner, 1982). The aim of the study was to document the mothers' pregnancies and the children's outcomes until adulthood. A multidisciplinary team were involved (nurses, paediatricians and psychologists) and all areas of development were assessed, including physical, intellectual and social development, any physical disabilities, learning, or behaviour problems.

The researchers recorded stressful life events that brought discord or disruption to the family unit and the material, intellectual and emotional aspects of the family environment. In the children's school, they measured academic progress, classroom behaviour, aptitude, achievement and personality. Records from public health, educational and social service agencies, local police and family court were accessed to provide additional data. The first round of data was collected when the children were 18 months and 30–32 months of age.

The data indicated that one-third of the 698 children were considered 'at risk'. Within this study, risks were defined as including: moderate to severe perinatal stress, being born into poverty, being reared by mothers with little formal education, living in a family environment troubled by discord, desertion, or divorce, or home environments marred by parental alcoholism or mental illness. Of the Kauai infants that were considered at risk, 30 males and 42 females were deemed resilient despite being exposed to one or more of these risks.

Werner identified several individual, family and community factors that correlated with resilience. Compared to children described as non-resilient as infants, resilient children were more likely to be very active, and have fewer eating and sleeping habits that distressed parents. When separated by gender, resilient girls were also more affectionate and cuddly, and resilient boys were good-natured and easy to deal with. As toddlers, resilient children showed greater alertness and autonomy, a tendency to seek out novel experiences, a positive social orientation, and more advanced communication skills, locomotion and self-help skills.

When the resilient infants were in elementary school, they related better with classmates, had better reasoning and reading skills, had many interests, and engaged in activities and hobbies that were not narrowly sex-typed. When these children reached high school and were teenagers, they had a more positive self-concept, internal locus of control, and a more nurturant, responsible and achievement-oriented attitude toward life. Resilient teens also had at least one and usually several close friends. Specific to females, resilient teen girls were more assertive, achievement oriented and independent.

Resilient and non-resilient children were also differentiated by their experience of exposure to several family factors. Children who were resilient were more likely to have experienced the following protective factors: less siblings, less separations from parents, few prolonged separations from parents during their first years and a close bond with one caregiver. Resilient children also had

structure in the home, family rules and assigned chores as a part of their daily routine. Some community effects were also noted, with a few resilient children having a favourite teacher, and others had informal networks of support.

Based on the findings from this longitudinal study, Werner suggested targeting protective factors at the individual, family and community level. At the individual level, Werner suggested promoting a sense of coherence in young people. Werner defined this as a “confidence that one’s internal and external environment is predictable and that things will work out as well as expected”.

Werner suggested that the role of siblings and grandparents as caretakers be investigated further, as in her study grandparents were effective transmitters of social values. She also indicated that support for mothers should be implemented, as children showed greater resiliency when their mother had emotional stability and warmth. The protective factors external to the family promoted by Werner included increasing children’s support from outside of the family network (teacher, church) and developing a better understanding of how social policy affects resilience. For example, she suggests that removing a child from parents or extended family and separating the old from young in housing projects may be counterproductive to promoting resilience.

In 1989 Werner published a follow-up to the Kauai study to trace the long-term effects of protective factors and stressful events (Werner, 1989). The study was completed between the years of 1985 and 1986. This extended time frame was utilised to ensure the greatest number of participants from the first study were included in the follow-up. The follow-up study had 545 participants, 80% of the cohort from the original study. In this study, Werner’s measures included a checklist of stressful life events, Rotter’s locus of control scale, a temperament survey and structured interviews. The researchers also gained records from court (major violations of the law, domestic problems) and the mental health registry to identify behaviours that were not considered resilient.

The data from the follow-up study highlighted the significance of childhood risks for wellbeing in adulthood (Werner, 1989). Specifically, variables that increased the likelihood of poorer adulthood coping included: closely spaced birth of a younger sibling, being raised by an unmarried mother, a permanently absent father, prolonged disruptions to family life, separations from mother, and having a working mother and unsuitable stable childcare. These risk factors were also more frequent with chronic poverty. Males who experienced these risks were more likely to have a criminal record in adulthood, and females who experienced these risks were more likely to have teenage pregnancy, marital conflict, problem relationships with fathers and a greater likelihood of divorce.

In adulthood, the resilient children from the original cohort were highly achievement oriented, usually pursued education beyond high school, were in full-time employment, and the majority chose their career or job success as their primary objective (rather than marriage or children). These resilient individuals also considered personal competence and determination as their most important tools for dealing with stressors and three-quarters indicated they were happy and satisfied with their life. Both resilient males and females indicated that they placed a high value on family, spouses, faith and prayer.

In the follow-up study, Werner also noted positive change in non-resilient individuals (teenage mothers or teenage delinquents) from the first cohort (Werner, 1989). Teenage mothers who had improved had less anxious, insecure relationships with their caregivers as infants, a stronger feeling of security as part of their family in adolescence, and modelled themselves after successful mothers

they had seen as children. They also had unique personal qualities of an internal locus of control, determination, sociable disposition, and more nurturant, responsible and flexible attitudes. Resilient teenage mothers also engaged in further education, had a large reliable network of support, and reported moderate stressful events.

Conversely, in the unimproved group, the teenager mothers were more anxious, dependent and inhibited, and they had an external locus of control. These mothers also had limited support networks and appeared to be reliant on their own mothers for support. The authors suggest that this dependency on their mothers may have started when they were teenagers and then resulted in an unhealthy position of dependency. Dependency on their mothers may have had a negative impact on their locus of control and the size of their social network.

Teenage delinquents who had a criminal record in adulthood had unique features in childhood compared to those delinquents who did not have a criminal record (Werner, 1989). For example, at age 10 they were considered dishonest by teachers and parents, displayed temper tantrums, had uncontrolled emotions, extreme irritability, were aggressive, and displayed bullying behaviour. In addition, 83% of individuals with a criminal record in adulthood came from families where the mother or father was absent due to separation or divorce. Conversely, delinquents without a criminal record in adulthood had higher scores on social and sensory-motor competence than peers in early childhood, needed less frequent mental health interventions in childhood and had an intact family unit.

Key elements of theory

Werner held an ecological view of resilience, focusing on protective factors that promoted resilience at the individual, family and community level (Werner, 1989). These protective factors included dispositional attributes of the individual (sociability, activity level), affectional ties within the family that provide emotional support, and external support systems (church, work). Werner noted that the more stress one experiences, the more protective processes are needed (Werner, 1982). She also believed that protective factors operate both directly and indirectly (Werner, 1989). For example, external support systems (e.g. church) may support the mother, which then increases her capacity to provide support for the child. Werner stated that despite the development of knowledge of possible protective processes, there still needs to be a greater understanding of protective factors and their effect.

In her original study, Werner stated that most children “self-righted” in all but the most persistently adverse situations (Werner, 1982). With this tendency to self-right, she suggests that cooperation with nature’s design rather than “wholesale intervention and control” may be a better approach to promoting resilience in children. She also suggests that change is always possible when children and adults have the right resources. To illustrate this she gave the example of older children making positive changes when they had new experiences, met people who give meaning to their life, or gained a reason for commitment and caring.

Werner’s longitudinal approach provided a window into changes in resilience over time. She proposed that there is a shifting balance at each developmental stage, and that these shifts depend on stressful life events, gender and protective factors (Werner, 1989). Werner suggests that interventions need to address the balance of risk and protective factors at different stages in an individual’s life, and ensure there are more protective factors or a decrease in stressful life events.

Suniya Luthar

Suniya Luthar is Professor Emerita at Columbia University's Teacher College and Foundation Professor of Psychology at the Arizona State University. Her research focuses on individuals affected by mental illness and poverty, and resilience, and affluent communities.

Definition

Luthar et al. (2000) defined resilience as "a dynamic process encompassing positive adaptation with the context of significant adversity". She states that there are two critical conditions that must be met to be resilient: exposure to significant threat or severe adversity and the achievement of positive adaptation. Luthar, similar to other researchers, proposes that resilience is not a personal trait but a product of the environment and the interaction between the child and the environment.

Empirical underpinnings

In 1991, Luthar assessed 144 adolescents from an inner city public school (mean age 15.3) on measures of stress (Life Events Checklist), demographic variables (parent education, ethnicity), competence (teacher ratings, peer ratings, school grades), moderator variables (intelligence, social skills, lack of control, ego development, positive life events), and internalising symptoms (depression, anxiety, depressive tendencies) (Luthar, 1991). These adolescents were chosen as inner city neighbourhoods are usually underprivileged and are correlated with higher rates of behaviour problems.

Within this study, Luthar investigated six characteristics of "social competence" (e.g. warmth, expressiveness, spontaneity) to attempt to better understand the function of social competence. A hierarchical regression was conducted with the data and nine children were identified as resilient (high stress/high competence). Resilience (higher functioning with increased stress) was positively related to the factors of an internal locus of control and social expressiveness (Luthar, 1991). Children with an internal locus of control feel they have power to control and change events, which may have been advantageous in an underprivileged inner city neighbourhood. The identification of social expressiveness was one of the first attempts to comprehend the effective mechanisms of social competence.

High intelligence is generally associated with resilience; however, within this study Luthar identified high intelligence as a vulnerability for adolescents with high stress. She suggested that adolescents with high intelligence might be more sensitive to the issues within their environment and consequently more at risk. This research was one of the first to recognise that factors commonly believed to be protective have instances where there are exceptions. Prior to this research, high intelligence was considered a stable protective factor.

In 2003, Luthar et al. compared 227 mothers who had substance abuse problems and mothers with psychopathology. They found children's externalising symptoms (e.g. disruptive behaviour) and internalising disorders (e.g. affective/anxiety disorders) were predicted by parent psychopathology (e.g. depression). Conversely, maternal drug use only predicted externalising disorders. Luthar et al. suggested that children of mothers experiencing depression may have had worse outcomes because they could not see a cause of the risk, whereas with the addiction they could see (and blame) the drug. These findings may also reveal children's reflections of the controllability of the risk, as more

controllable risks have less adverse effects on children's mental health (Luthar et al., 2003). Potentially, children may perceive something they can see (drugs) as something more controllable.

Luthar has also been studying affluent groups of children and adolescents since the late 1990s. Over this time, she and her colleagues have studied three cohorts of young people from high-income communities (Luthar and Latendresse, 2005). In one study in 2012, the wellbeing of affluent 11th and 12th grade students was assessed (Luthar and Barkin, 2012). The researchers measured substance use, rule breaking and anxiety/depression in over 900 adolescents. They also measured perceived parent containment, closeness to parents, parent criticism, parent expectations, parent knowledge, extracurricular involvement and parent 'bailing out'. Compared to national norms, the 'privileged' youth had elevated substance use and higher rates of clinically significant internalising and externalising disorders.

Factors that modified risk in this sample included: parents' containment of substance use, parent knowledge of child's whereabouts, parent criticism, parent expectations and the quality of relationships with their mothers. Luthar suggested that pathways to maladjustment may have two antecedents: achievement pressure and isolation from adults (Luthar and Latendresse, 2005). However, she also indicated that further work is required to understand the "culture of affluence" as these seemingly low-risk adolescents are suffering higher rates of both externalising and internalising behaviours than the general population (Luthar et al., 2006).

Key elements of theory

Luthar proposed that there are three types of protective factors (Luthar et al., 2000):

1. Protective-stabilising (attribute gives stability to competence despite increasing risk)
2. Protective-enhancing (children can engage with stress and increase competence)
3. Protective but reactive (general advantages but not with high stress levels)

She has urged for a focus on the mechanisms of variables that act as a protective or risk factor (Luthar et al., 2000, Luthar et al., 2006). That is, how do protective factors like social support work? She and her colleagues have also emphasised that risk factors and protective factors are not simply polar opposites of the same variable (Luthar et al., 2006). These assertions are supported by Luthar's research whereby high intelligence and high SES appeared to be acting as a risk rather than a protective factor. Another point highlighted by Luthar is the fact that protective factors and risk factors are not intuitive. That is, just because a factor appears high risk, it does not mean it is. This finding was underscored by their study whereby children who experienced mothers with depression had worse outcomes than children who experienced mothers with a drug addiction.

Luthar suggests that researchers need to be cognisant of the multidimensional nature of resilience, and that children can show competence in some domains but not in others (Luthar et al., 2000). For example, in one study by Luthar (1991), resilient children showed higher competence under stress but were significantly more depressed and anxious than other children. She states it is unrealistic to expect children to be successful across all domains consistently. For example, they may show educational resilience but not emotional resilience, or they may show behavioural resilience but not educational resilience. Luthar suggests that if it is inevitable that young people exposed to stressors experience some negative effect, then perhaps the goal for resilience should be the "least detrimental of all symptoms".

Luthar et al. (2000) is critical regarding the lack of clarity in the use of definitions and terminology within resilience. Currently there is a great range in how terms such as risk, protective factor, competence and resilience are defined and consequently there is a great range in what is considered to be resilience. Even when competence expectations have been met, there is debate as to what level and what domain should be measured. Luthar questions whether competence should be excellent or average to be considered resilient, and whether some domains are more important than others.

In regard to future research and interventions, Luthar et al. (2006) suggested that, "There must be concerted attention to factors that are salient in that particular life context, those that affect a relatively large number of people in that group". To accomplish this there is a requirement for more qualitative and contextualised research to ensure that manipulated risk and protective factors are relevant to the intervention context. She also suggests that the focus be on malleable interventions that are enduring and generative (those that set other positive cascades in place). Research should take into account the voices of children when attempting to understand their wellbeing, rather than be based on peers, parents and teachers reporting on children's wellbeing. Finally, Luthar proposes that 'within group' studies of children at risk be conducted rather than interaction effects (which may obscure any effect) and called for an increased focus on biology and genetics.

Following on from their paper in 2006 with Sawyer (Luthar et al., 2006), Luthar and Brown (2007) published a paper looking at priorities for the future in resilience research. In this paper they dedicated a large portion to biological influences (brain, chemistry, genetics), a concept they raised in 2006. They state that biological approaches will be more effective for the large number of young people experiencing mental health disorders. For example, they suggest that corticolimbic pathways are useful points of reference for future resilience research, and that this research could inform pharmacotherapies to assist children and adolescents who experience behavioural disturbances. They did recognise the shortcomings of focusing on biological influences of behaviour, and suggest it will likely lead to a reduced focus on psychological and behavioural interventions/research.

Despite her emphasis on the significance of biological influences, at the end of her paper Luthar proposed two key postulates that warrant systematic testing: that relationships lie at the 'root' of resilience and that love strengthens innate skills (self-efficacy, confidence) (Luthar and Brown, 2007). This focus on relational aspects is somewhat at odds with Luthar's focus on biological influences.

Ann Masten

Ann Masten is a clinical psychologist and Regents Professor in the Institute of Child Development at the University of Minnesota. She is the current director of Project Competence and her research focus is in competence, risk, resilience and human development. Ann Masten was a student of Norman Garmezy and consequently holds very similar perspectives.

Definition

In 2011, Masten defined resilience as, "The capacity of a dynamic system to withstand or recover from significant changes that threaten its stability, viability, or development" (Masten, 2011). In 2014, Masten removed "withstand" and changed the definition to include "adapt successfully". The 2014 definition is "the capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development" (Masten, 2014). This newer definition reflects

the perspective that individuals do not withstand risk, but change to accommodate risk. Masten is well known for suggesting that resilience is "ordinary magic", and that normative processes and basic human adaptation systems account for the majority of resilience findings (Masten, 2001, Masten et al., 2009).

Empirical underpinnings

In an early study, Masten et al. (1999) investigated perinatal hazards, parental disadvantage, psychosocial disadvantage and loss in a longitudinal study. They collected data when the participants were in childhood (N=205 children, 8–12 years of age), and then again in late adolescence seven to 10 years later (N= 189 adolescents, 14–19 years of age). This research was focused on the influence of parent quality and intellectual functioning on resilience. Their research was based on three premises:

1. The long-term impact of adversity in childhood occurs through the disruption of processes underlying adaptation.
2. Developmental tasks serve as valuable markers of how well development has been proceeding and as warning signs of possible trouble ahead.
3. The availability of psychosocial resources may counteract or moderate the potentially disruptive influence of adversity.

Masten et al. (1999) collected data through a range of methods, including: child and parent interviews, school records, checklists/rating scales, teacher ratings, peer ratings and achievement tests. They rated competence in three domains: academic achievement, conduct (rule abiding vs. antisocial behaviour) and peer social competence (acceptance and friendship). Low competence was indicated by poor (below average) functioning on at least two of the three competence domains. High adversity was indicated by severe to catastrophic levels of chronic adversity both in childhood and adolescence (serious/chronic/traumatic events: hospitalisation or divorce of parents, financial crisis, death of parents, rape, assault, living with violent alcoholic parent, severe poverty).

When the children had reached adolescence, Masten et al. (1999) measured parenting quality (warmth, expectations and structure) and adolescent psychological wellbeing (self-worth, psychological distress, positive and negative emotionality traits, and mood states). From these measures they defined three groups: Resilient (adequate competence, high adversity); Maladaptive (low competence, high adversity); and Competent (adequate competence, low adversity). Adolescents identified as Maladaptive had competence problems in all three areas, low self-worth, high negative emotionality and higher stress reactivity.

The results indicated that the key variable that promoted resilience was psychosocial resources, with the Maladaptive childhood group having significantly worse psychosocial resources and the 12 adolescents in the Resilient group having significantly more psychosocial resources (Masten et al., 1999). Childhood IQ had a moderating effect on adversity; however, it is possible that other protective factors underlie this (e.g. verbal learning, problem-solving aptitude, effective seeking of healthy environments). SES had a positive correlation with resilient youth; however, this also may be due to the distal effects of parental education, opportunities and expectations. Masten et al. surmised that while this study provides big-picture concepts it does not elucidate the underlying processes of resilience and protective factors.

Overall, Masten et al. (1999) noted that if reasonably good resources are present, competence outcomes are generally good. She and her colleagues also noted that good resources were less common for children growing up in high adversity, and young people in the Maladaptive group experienced higher rates of adversity than any other group. If good outcomes only occur in the presence of low risk and high resources this is no longer aligned with the definition of resilience.

Key elements of theory

Masten indicates there must be two criteria present to be considered resilient, namely a measure of positive adaptation or development and the past or current presence of conditions that threaten to disrupt positive adaptation (Masten et al., 2009). She defines positive adaptation or development as meeting developmental tasks and fundamental human adaptation systems. Developmental tasks are the expectations of a given society or culture in a historical context for the behaviour of children in different age periods and situations (e.g. going to school, getting a job, romantic relationships). Fundamental human adaptation systems include attachment relationships and parenting, pleasure-in-mastery motivational systems, self-regulatory systems for emotion, arousal and behaviour, families, formal education systems, cultural belief systems, religion and spirituality (Masten et al., 2009).

The two models of resilience frequently referred to by Masten are the Variable Focused and Person Focused approaches (Masten et al., 2009, Masten, 2011, Masten, 2001). A Variable Focused approach looks at associations among variables through multivariate analysis and patterns of association. While this approach has statistical power and can show patterns between variables (individual, environment and experiences) it is unable to encapsulate the experience of the whole person. In a Person Focused approach, it is the study of whole individuals, comparing resilient and non-resilient individuals, examining life course trajectories, and attempting to understand how they are different. Groups of variables are studied as they naturally occur within each individual. Masten suggests both approaches have utility.

Similar to other resilience researchers, Masten has developed a list of protective factors that operate at the individual, family and community level (Masten et al., 2009). She states that protective processes are only basic human protective systems (Masten et al., 2009), and that children who do not show resilience do not have the "basic resources nor the opportunities and experience that nurture the development of adaptive systems" (Masten, 2001). Given that, Masten suggests a focus on strategies that prevent damage to, restore, or compensate for threats to these basic systems (Masten et al., 2009). She suggests that "resources can theoretically counterbalance high levels of risk to produce a competent outcome" (Masten et al., 2009). Despite these large lists of protective factors, Masten (2009) indicates there is still "very little understanding of processes underlying protective processes".

In Masten's research, risk factors are based on known predictors of negative outcomes (e.g. low birth weight, low SES, maltreatment) (Masten, 2001). She notes that most risks are cumulative as they tend to occur together (Masten et al., 2009). Furthermore, there can be a dose response to risk, whereby a greater exposure to risk is associated with more negative outcomes and a greater number of symptoms (Masten, 2011, Masten, 2014). In 2009 and 2011, Masten discussed the idea of risk gradients, whereby you can count up the risk factors to identify the level of risk (Masten, 2011, Masten et al., 2009). She suggests that high risk on the risk gradient tends to indicate less protective resources as these variables tend to be bipolar (Masten, 2011).

In 2011, Masten discussed a more person focused and contextualised approach to risk than in earlier research. She proposed that risk varies as it is due to the perception of risk and dependent on the diversity within groups (Masten, 2011). She stated that you cannot define "true" adversity as everyone responds differently to similar stressors and there are multiple processes that influence this response. Masten also found striking variability among those with similar risk factors (e.g. homelessness).

In 2014, Masten introduced the concepts of context and culture. She stated that "such judgments are influenced by cultures of science, as well as sociocultural and historical context" (Masten, 2014). She suggests that individual differences are sensitive to experience and context and there is a requirement to understand what wellbeing means within each context. While Masten has made some references to context and culture in prior research, it has not been evident in her approach to research. In fact in her latest article her predominant focus in on the identification of biological responses to stress (e.g. hair sampling of cortisol) and not context (Masten, 2014). She does not outline how an understanding of biological processes may be beneficial to a practitioner.

Interventions

Masten (2011) states that interventions should be "reducing or eliminating exposure to conditions that have the potential to threaten function or development (e.g. maternal depression, prevent homelessness)" and that they should "target assets or resources…to increase potential promotive compensatory factors (e.g. food, medical care, homes, income, schools, tutors, books, recreation centers, neighborhood safety, effective teachers)" (Masten, 2011). She suggests that interventions be targeted at the most powerful moderators (e.g. self-efficacy, self-regulation, problem-solving skills) to have the greatest impact (Masten, 2011).

Masten draws attention to "windows of opportunity" with developmental timing and transitions (Masten, 2011). She proposes that if developmental cascades are considered, interventions can be timed to have the greatest impact on children's outcomes (Masten, 2011). That is, some risks may have a greater impact at different stages of development so it would be effective to target risks at critical times. Masten also discusses the need to have positive objectives and promote competence, as "competence begets competence" (Masten, 2011).

Masten advocates that interventions need to be based on hypothesised factors from multiple interacting systems and iterative, whereby data from interventions inform future interventions (Masten, 2011). However, she notes that there have been very few resilience interventions implemented to actually know if current theory can be substantiated (Masten, 2011). Consequently, much of current resilience theory remains untested.

Michael Ungar

Dr Michael Ungar has worked as a social worker and family therapist for over 25 years and is currently the Professor of Social Work at Dalhousie University in Nova Scotia. He is the founder of the International Resilience Research Centre in Canada, which coordinates resilience research in over 14 countries. His research focuses on cross-cultural research, mixed methods, constructivism and resilience.

Definition

In 2005, Ungar defined resilience as, "more than an individual set of characteristics. It is the structures around the individual, the services the individual receives, the way health knowledge is generated, all of which combine with characteristics of individuals that allow them to overcome the adversity they face and chart pathways to resilience" (Ungar, 2005a). He expanded on this definition in 2008, and stated, "In the context of exposure to significant adversity, whether psychological, environmental, or both, resilience is both the capacity of individuals to navigate their way to health-sustaining resources, including opportunities to experience feelings of wellbeing, and a condition of the individual's family, community and culture to provide these health resources and experience in culturally meaningful ways" (Ungar, 2008). The point he is emphasising is that it is the features of both individuals and the environment that lead to resilience (Ungar, 2013).

Empirical underpinnings

Ungar et al. (2007) compiled data from 14 international communities that had experienced a range of risks, namely war, poverty, social dislocation, genocide, violence, marginalisation, drug and alcohol addictions, family breakdown, mental illness and early pregnancy. To be considered resilient, youth had to experience at least three of the culturally significant risk factors within their context. Youth "thought to be coping well with adversity" were selected by a member of the research team or the Local Advisory Committees (LAC) within each context. There were 89 youth included in the study aged 12–23 years, ages that were considered the transition from childhood to adulthood within the local context.

Ungar et al. (2007) utilised sensitising and indigenous concepts from each site to inform the study. From this research they identified seven tensions of resilience. These include:

1. Access to material resources – availability of financial, educational, medical and employment assistance and/or opportunities, as well as access to food, clothing, and shelter
2. Relationships – relationships with significant others, peers and adults within one's family and community
3. Identity – personal and collective sense of purpose, self-appraisal of strengths and weaknesses, aspirations, beliefs and values, including spiritual and religious identification
4. Power and control – experiences of caring for one's self and others; the ability to affect change in one's social and physical environment in order to access health resources
5. Social justice – experience related to finding a meaningful role in community and social equality
6. Cultural adherence – adherences to one's local and/or global cultural practices, values and beliefs
7. Cohesion – balancing one's personal interests with a sense of responsibility to the greater good; feeling a part of something larger than one's self, socially and spiritually .

According to Ungar et al. (2007) these tensions may exist in all cultures; however, young people will resolve them in a culturally relevant way. They suggest that each tension be treated independently but that researchers and practitioners be aware that each of the tensions interact. They noted that there is interplay between context, culture and an individual's strengths as youth navigate the tensions.

In another study, Ungar et al. (2008) focused on the unique individual coping strategies of adolescents. This study was a subsample of the larger 11-country qualitative study, with 19 indigenous and non-indigenous Canadian adolescents (aged 15–18 years) from a sample of 89 Canadian youth. Risk was identified as experiencing a mental illness (their own or parents), discrimination by gender, race, sexuality, multiple relocations, family breakdown, poverty, or cultural disintegration. The study took a constructionist approach utilising grounded theory and interviews with youth who had experienced risk. Ungar et al. discovered a non-linear, non-causal relationship between variables and as much variability between the Canadian sample as the international sample. Due to this non-linear relationship, Unger asserted that resilience is not a predictable set of developmental processes and positive outcomes. He also stated that static variables do not capture a youth's dynamic decision-making processes.

In a mixed methods study of over 1500 youth and 14 communities in five continents, Ungar sought to identify the correlates of resilience, taking into account culture and context (Ungar, 2008). Data was collected through the Child and Youth Resilience Measure (CYRM), youth interviews, life histories, observations, focus groups and interviews with significant adults. To be included in the study, each youth had to be exposed to three local risk factors. The seven tensions developed in the 2007 study (Ungar et al., 2007) were analysed and the findings indicated youth could only resolve the tensions if the resources were available. Furthermore, the youth only chose the ones that were most likely to lead to positive outcomes. Ungar did not find a valid factor structure for seven tensions of resilience.

Key elements of theory

In 2011, Ungar raised four principles that require consideration, namely decentrality, complexity, atypicality and cultural relativity (Ungar, 2011). Decentrality is an effort to take the focus from the child and place a greater emphasis on the environment. Ungar states "this subject centred approach means that responsibility for resilience is wrongly placed on the victim of toxic environments, with change hypothesized as a measure of how well the child is individually able to take advantage of environmental resources" (Ungar, 2011). He adds to this stating, "By decentering the child it becomes much clearer that, when growing up in adversity the locus of change does not reside in either the child or the environment alone, but in the processes by which environments provide resources for use by the child" (Ungar, 2011). Ungar is not proposing the child has no role in resilience, but that the emphasis should firstly be on the nature of the social and physical ecology, then on the interaction between the environment and the child, and lastly the child.

A call for complexity comes from previous efforts to identify simple relationships that lead to resilience. Ungar states that this attempt to simplify has undermined resilience research and does not take into account: a child's capacity to use opportunities, the capacity of the environment to provide for growth, interactional patterns between the environment and the child, and changes across physical and social worlds, to gain a complete picture of resilience. This complexity will allow for contextually and temporally specific models to explain resilience, which provides a useful framework for intervention.

Atypicality is the openness to processes that work for young people but are not usually identified as 'resilience'. This also includes avoiding the focus on bipolar variables, as context can change the utility of different protective processes. He states that there needs to be, "less focus on predetermined outcomes to judge the success of growth trajectories and more emphasis on understanding the functionality of behaviour" (Ungar, 2011).

Cultural relativity is the fourth principle identified by Ungar (2011). He suggests that positive growth is embedded culturally and temporally (historically). He defines culture as everyday practices through which individuals and groups manifest shared values, beliefs, language, and customs. As resilience reflects the culture, practitioners need to negotiate programs to ensure they fit with the needs of each culture. Furthermore, as culture and contextual features change over time, interventions should account for these changes and be aware of how each environment facilitates growth.

Ungar emphasises the importance of the environment and proposes a social ecological understanding of resilience (Ungar, 2013). He states that most research indicates that resilience is a function of the environment's capacity to facilitate growth, rather than a result of individual differences within children and adolescents. He proposes that if meaningful resources are available within the environment (e.g. social cohesion, equitable communities), individuals are more likely to engage with them and show resilience. For example, he asserts that the personal characteristics of "personal motivation, sense of agency, temperament, personality variables, and genetic predispositions toward particular behaviors (anxiety, impulsivity, etc.) are triggered or suppressed by the environment" (Ungar, 2013). In addition, when a child makes a positive change at a turning point, this is often only a change in the social ecology around the child, not a change in the child. Consequently, the resources or lack of resources within the social ecology can liberate or constrain the choices a young person can make. He suggests that an emphasis be placed on those that control the resources, rather than blaming the vulnerable child for lack of resilience.

Given the importance of the social ecology in liberating or constraining growth, Ungar asserts that it is important to understand the contextual, individual and cultural processes of each setting (Ungar, 2013). In this way, the processes that create risk or promote growth will be relevant to the youth in that setting rather than be based on arbitrary, theory-driven surveys (Ungar, 2013). To achieve contextually and culturally relevant processes, Ungar suggests conducting indigenous research where the community is consulted about risk and protective processes (Ungar, 2005a). In this way, local knowledge is privileged and the most influential risks and resources can be addressed. At present, processes tend to be focused on white middle-class western contexts. Applying these ideas to all cultures may be of no benefit or even harmful to children in other contexts (Ungar et al., 2007, Ungar, 2005a).

Ungar also highlights the importance of "navigation" for youth to show resilience (Ungar, 2005b, Ungar, 2008, Ungar, 2004). Simply put, it is how young people find their way to the health resources they require. Ungar suggests that communities need to create pathways that make resources easy to access (e.g. health services within schools/community centres, less barriers to access resources) (Ungar, 2005a). As young people have personal agency and make choices to engage with services, it is critical to ask them what they need and how they go about engaging with health services (Ungar, 2005b). Ungar states that the better documentation of local youth's construction of resilience, the better the intervention will be. By excluding youth from research, he proposes that we are, "Violating them through methodologically flawed and contextually irrelevant interpretations of their worlds" (Ungar and Teram, 2005).

Table 1: Comparison of key concepts for each theorist

	Definitions	Theory	Empirical support	Implications for therapy/population health
Rutter	An interactive concept that is concerned with the combination of serious risk experiences and a relatively positive psychological outcome despite those experiences (Rutter, 2006)	• Brief exposure to risks can act as "steeling events" • Mental features (e.g. sense of agency) influence resilience • Turning point effects can influence resilience when older • Attend to biology of resilience and gene-environment interactions • Social relationships are protective	Isle of Wight and London study (Rutter, 1979) • Comparison of children in two different settings • Strong focus on competence	• Consider genetic and environmental pathways to psychopathology • Identify aspects of risk that contribute to causation • Teach mental features • Maintain challenge to developing coping skills • Introduce turning points into adulthood • Pay attention to biological pathways
Garmezy	Resilience is not impervious to stress. Rather, it is designed to reflect the capacity for recovery and maintained adaptive behaviour that may follow initial retreat or incapacity upon initiating a stressful event (Garmezy, 1991a)	• Focus on development • Focus on positive • Addressed community, family, individual level factors (e.g. temperament, the presence of some caring adult, sources of external support)	Project Competence (Garmezy et al., 1961) • Minnesota • Positive focus • Children born to parents with schizophrenia and children with referrals for behaviour problems	• Look at all levels in interventions (community, family, individual factors)

	Definitions	Theory	Empirical support	Implications for therapy/population health
Werner	The capacity to cope effectively with the internal stresses of their vulnerabilities (labile patterns of autonomic reactivity, developmental imbalances, unusual sensitivities) and external stresses (illness, major losses, and dissolution of the family) (Werner, 1982)	• Identified differences between factors that affected resilient at individual, family, and community level • Noted differences between boys and girls • Resilience changes over time (resilience is not fixed) • Resilience is dependent on balance between protective factors and risk factors	Kauai longitudinal study (698 infants born on island of Kauai) (Werner, 1982) • Noted individual, family and community differences between risk and resilience Follow-up of Kauai study in 1985–86. Found protective factors: • Dispositional attributes of the individual • Affectional ties within the family • External support systems (church, work)	• Many children "self-righted" in all but the most persistently adverse situations" • Increase understanding of generalised resources and their effect • Investigate the effect of social policy • Review role of siblings and grandparents • Implement support from outside family • Develop a child's sense of coherence • Change is possible with the right resources
Luthar	A dynamic process encompassing positive adaptation within the context of significant adversity (Luthar et al., 2000)	• Resilience is multidimensional (competence in some domains not others) • Factors are not polar opposites • Too much diversity in measurement of domains	• 144 adolescents inner city public school (mean age 15.3) (Luthar, 1991) • 227 mothers who had substance abuse and their children (Luthar et al., 2003) • Affluent youth (Luthar and Latendresse, 2005).	• Attend to "factors that are salient in that particular life context, those that affect a relatively large number of people in that group" (Luthar et al., 2006) • Focus on biological influences

	Definitions	Theory	Empirical support	Implications for therapy/population health
Masten	Children who have good outcomes in spite of serious threats to adaptation of development (Masten, 2001) The capacity of a dynamic system to adapt successfully to disturbances that threaten system function, viability, or development (Masten, 2014)	• Variable focused – statistical relationship and patterns between variables • Person focused – identify resilient people and find how they are different from those who are not resilient • Factors exist at child, family and community level • Phenomena is ordinary process of development through basic human adaptation systems • Developmental cascades • Late bloomers • Discussed context and culture in 2014	• Project Competence (see Garmezy) • Tested influence of parent quality and intellectual functioning from childhood to late adolescence (205 children aged 8–12 years, then 189 adolescents 14–19 years old seven to 10 years later)	• Some children lack "basic resources nor the opportunities and experience that nurture the development of adaptive systems" (Masten, 2001) • Identify hotspots of change (see Masten, 2007) • Have positive objectives • Promote competence (competence begets competence) • Track progress in terms of developmental competence

Ungar	The outcome from negotiations between individuals and their environments for the resources to define themselves as healthy amidst conditions collectively viewed as adverse (Ungar, 2004)	Seven tensions of resilience:
		1. Access to material resources
		2. Relationships
		3. Identity
		4. Power and control
		5. Social justice
		6. Cultural adherence
		7. Cohesion
		• Emphasis on environment's capacity to facilitate growth
		• Individual qualities are triggered or suppressed by environment
			• 89 youth (12–23) in transition from childhood to adulthood (Ungar et al., 2007)
			• 11 country qualitative study – 19 Aboriginal and non-Aboriginal Canadian adolescents interviewed (from sample of 89 Canadian youth, aged 15–18) (Ungar et al., 2008)
			• 14 site mixed methods study over 1500 youth, 14 communities, five continents (Ungar, 2008)
				• Privilege local knowledge
				• Interventions need to be sensitive to most influential resources
				• Intervene at multiple levels
				  ○ Culture
				  ○ Community
				  ○ Relationships
				  ○ Individual
				• Intervene to help children navigate the tensions
				• Better documentation of local youth's construction of resilience, the better the intervention will be

Points of convergence/divergence

Definitions and conceptualisations of resilience

All of the theorists' definitions of resilience contain two core ideas – that a person has experienced serious risk and has demonstrated positive functioning in some way. Ungar's definition differs from the others as it includes context and culture. However, while the other theorists do not include context/culture within their definitions, they frequently refer to this influence within their theory. For example, Rutter's ideas are highly contextualised despite the absence of context within his definition.

Special qualities/traits

The key theorists all agree that resilience is not a special quality that only some children are born with. For example, Garmezy states that the resilience is not a case of a heroic child, Luthar proposes that resilience is not a trait, and Masten recommends that the idea of resilience being a trait "should be put to bed once and for all". Given that resilience is not an inherent trait or personal quality, one would assume that resilience is a result of the interaction between the child and their environment. This is supported by Masten who states, "There are personality (or temperament) dimensions consistently associated with resilience, such as conscientiousness; however, there is evidence that experiences shape personality traits"(Masten, 2013). It is also encapsulated by Ungar's view that, "resilience is simultaneously a quality of the individual and the individual's environment" (Ungar, 2005a). Crucially, Ungar calls for decentrality, an effort to take the focus from the child and place a greater emphasis on the environment.

Conceptualisation of risk and protective factors

Most of the theorists make a clear statement that risk and protective factors are not bipolar. Ungar found that high SES can be a risk in some contexts, and states that the focus on bipolar variables has erroneously simplified a complex field. Luthar also supports the move away from bipolar variables, as her research indicated that high intelligence could be a risk as well as a protective factor. She also found, similar to Ungar, that high SES can also be a risk as well as a protective factor. Rutter extends this idea and indicates that factors can be a risk or protective depending on context, prior risks and current circumstances. As an example he suggests that adoption is normally seen as a risk, yet if the child is in an abusive home environment and has the opportunity to go to a loving, stable home, adoption could be a protective factor. He states there is a "requirement to assess individual needs in relation with particular circumstances, rather than assume that all risk and protective factors have similar effects in all conditions in all people" (Rutter, 2013).

Masten is the only theorist that views risks and protective variables as bipolar (Masten, 2011). She makes the point that if a child is high on a risk gradient, it is likely they will be low on the protective factors gradient. For example, if a child has the risk factor of a chaotic home, it is likely they are missing the protective factor of a cohesive home environment. While this is a valid point, it may not applicable to all risk and protective factors, as evidenced by Ungar and Luthar's research.

The range of responses to similar risk and protective factors within communities is also evident in each of the theorists' research. For example, Ungar found as much variability within the Canadian sample of youth as there was between the Canadian sample and the international sample. Similarly, there were large within group differences in risk and protective factors for participants who were homeless in the study by Masten. These results indicate that there may be predominant risk and protective factors in settings, however these will vary for individuals within these settings. This variance is due to the interaction between the resources and risks in the environment and the characteristics the young person brings to the setting.

Risks factors

There is agreement between the theorists that cumulative risks are worse than individual risks. Rutter found that there was a greater chance of experiencing a psychiatric disorder with an increased number of risks (1% for one risk to 21% for multiple risks). Garmezy corroborated this finding and stated that risk factors appear to have a cumulative effect, reducing qualities of engagement and enhancing disruptiveness. Masten also refers to a "dose response" to risk, with the greater the dose, the worse the outcomes.

Recent research from Luthar, Rutter and Ungar indicates that not all risk is bad, and in fact avoidance of all risk is not always the best solution. Their research showed that when youth avoided all risk they can have poor outcomes as well. Rutter compares low-level risk to inoculation from disease or a "steeling event". However, both Rutter and Luthar indicate that the risk experience must be controllable rather than uncontrollable stress experiences for good outcomes to occur (see Lazarus and Folkman, 1984) for extensive reviews on coping).

Protective factors

All theorists conceptualise protective factors at three levels: the child, the family and the community (see Appendix A and B). Ungar also discusses culture as an additional level of protective processes. Some of the protective factors referred to include: mental features, the parent–child relationship, social relationships (Rutter); high SES, family cohesion and stability, and intelligence (Garmezy); maternal warmth, less separation from parents (Werner); secure attachment, normal cognitive development, effective schools (Masten); locus of control, expressiveness (Luthar); and self-efficacy, having a positive mentor and role models, culture/spiritual identification (Ungar). All theorists emphasise the importance of high-quality social relationships.

Interventions

The theorists discuss interventions in very broad terms. For example, most indicate that interventions should be implemented at multiple levels, that there should be a focus on strength-based programs as "competence promotes competence" (Masten), and that interventions should help children navigate the tensions (Ungar). These suggestions provide some general guidelines for possible interventions; however, they remain quite general. They do indicate that some of the current interventions (e.g. bullying programs) may be inadequate as they are focused on the problem and only target one level.

Despite the shared understanding that the resilience is not a trait of the child and agreement that the environment around the child is influential, most of the theorists focus their suggested interventions on identifying and changing individual-level characteristics of children (e.g. problem-solving skills, coping skills, social competence). This focus would suggest that there is still a belief that the most effective way to promote resilience is through the child, rather than the environment. Ungar holds a divergent position from the other theorists here, and consistently advocates that the environment and the resources within the environment need to be the focus of interventions.

Turning points

The importance of resources within the environment is reinforced by the finding of "turning points" in individual's lives. Rutter (2013) noted that a turning point occurred when there was "a discontinuity with the past that removes disadvantageous past options and provides new options for constructive change". These changes were also noted by Werner in her follow-up study of the Kauai birth cohort, whereby some teenage delinquents or teen mothers showed unexpected positive outcomes in adulthood. Masten also identified "late bloomers" who showed positive outcomes later in life. Ungar suggests that this positive change is only a change in the social ecology around the child. This premise is confirmed by the other theorists, as they suggest that turning points be created by introducing psychosocial resources. This finding reinforces the importance of ensuring that youth have adequate and appropriate resources within their environment so that they can make positive change.

Biological influences

A current trend for some theorists is the focus on biological influences of resilience. Rutter, Masten and Luthar all recommend that this focus could provide keys to resilience in young people who have experienced trauma. While these advances in genetics, hair sampling and biological measures of stress may be of some value to clinicians, it remains questionable as to what benefit this knowledge would be to the community practitioner. For example, if increased social connections lead to decreased stress hormones, this would still result in a psychosocial intervention. Furthermore, while this biological focus is on trend as the new frontier of resilience research, there are still many unanswered questions and ambiguities in current and past psychosocial resilience research. It would be beneficial to test and consolidate this field to provide a stronger framework for understanding biological processes.

Limitations, uncertainties, continuing debates

There are several limitations to current research in resilience, namely the ambiguity in terminology and measurement, methodology, the absence of young people's voices, predominance of western views with the absence of culture and context, and a lack of resilience interventions.

Ambiguity in terminology and measurement

Ungar and Teram (2005) identify a key limitation with resilience research as the "definitional ambiguity of terms such as risk factors, protective mechanisms, vulnerability, and resilience". While the stated definitions are becoming more similar with the acknowledgment that resilience is a process that occurs within a context, the understandings of the meaning of the terms within the definition remain controversial.

Positive outcomes

One of the greatest areas of variability in resilience research is the selection of outcomes that indicate resilience. The two most frequently used indicators of positive outcomes are lack of psychopathology and signs of competence (e.g. academic, social). Psychopathology (e.g. depression, anxiety) is associated with multiple risk factors (e.g. poverty, abuse, marital discord), therefore individuals who do not experience psychopathology are considered resilient as it is not the expected pathway. Competence is also deemed a positive outcome because it indicates that the individual has following a normal developmental trajectory despite experiencing risk.

While lack of psychopathology and competence are clearly positive outcomes for young people who have experienced serious risk, independently they are not enough to indicate the young person is experiencing good outcomes. For example, a young person may not be experiencing depression but they may be unemployed, have few friends and be illiterate due to disengagement with school. Alternatively, a young person may be socially skilled and doing well academically but experiencing severe depression. Consequently, resilience research that utilises only one measure of positive outcomes (competence or lack of psychopathology) may be identifying individuals who are not actually experiencing positive outcomes overall. Researchers refer to this as the internal/ external debate (Masten et al., 2009, Masten and Tellegen, 2012). That is, can a child have resilience if they are doing well academically and socially but are experiencing depression? These questions have yet to be resolved in resilience research.

Measures of competence have additional issues that need to be considered. Competence can be measured from one or several domains (e.g. academic achievement, social competence); at different levels (e.g. average vs. above-average achievement); and signs of competence within each domain are measured through different methods (e.g. academic achievement: IQ tests, national testing, school grades, achievement tests; social competence: adult ratings, self-report social skills scales, peer ratings). Luthar also questions whose social expectations of competence are acceptable, and whether some domains of competence have more importance than other domains. Luthar et al. (2000) also suggest that it is unrealistic to expect children to be successful across all domains consistently. For example, a child may have educational resilience but not emotional resilience, or behavioural resilience but not educational resilience.

There is also variability in when the constructs are measured, with some studies looking at resilience immediately after or many years after the risk experience. Coping research indicates that the coping response is a process whereby emotion-focused coping precedes problem-focused coping. If young people are at early stages of processing their risk experience (or in the midst of the risk) it is likely they will report differently than those young people who are reporting on a past experience and who have possibly had the time and resources to work through the experience.

The issue with this range of measures is that there is no consistency in measurement approaches, and it is possible that the same group of young people could be considered resilient in one study and non-resilient in another. This lack of consistency also precludes any comparison between studies, as each study is measuring different outcomes. These variations do not invalidate the concept of resilience, rather they indicate that variable selection, timing and measurement are significant and need to be considered when conducting and interpreting research.

Risk factors

The concept of risk is also highly debateable. Ungar states that risk must be chronic (e.g. homelessness, discrimination, abuse) and grounded in the research community. In this way risks are culturally and contextually relevant. Other theorists select statistical risks (e.g. poverty) to study resilience. Luthar et al. (2000) question if resilience should be concerned with these statistical risks (known risk factors in research) or actual risk (risk factors within the community of research). It could be reasoned that if risk factors are not highly relevant to the community within the research, any findings will not be relevant to that group. For example, if a community do not perceive poverty to be a risk there may be no utility in utilising this risk factor to understand protective factors within that community.

Protective factors

The understanding of protective factors has similar issues to risk factors. Some theorists select protective factors that historically have had a strong positive relationship with good outcomes (e.g. attachment to parents), while other theorists look at the context, the resources within that context, and the interaction between the child and environment to understand protective factors for that context. Luthar's research demonstrated that two well-known protective factors (high SES and high intelligence) can create risk rather than protect, so this would suggest that protective processes cannot be identified as a list of stable variables, but must be understood within specific contexts. Lists may provide potential starting points that are suitable for a large proportion of the population, but cannot be applied universally to all members of the population or to different contexts.

There is also little understanding of how risk and protective factors function. Luthar urged for a focus on the mechanisms of different variables that act as protective and risk factors (Luthar et al., 2000). For example, how do protective factors like social support work, and why do young people engage with services? The need to understand the mechanism of variables was suggested by Rutter and Garmezy in the 1980s, yet has not been accomplished in any systematic way to date.

Methodology

One of the main issues in resilience models is the emphasis on quantitative measures of risk factors, protective factors and positive outcomes. Quantitative measures are useful for testing theory but they do not provide any new understanding about the nature of variables, how they operate, or their

importance to the resilient person. Furthermore, quantitative research only tests relationships between known variables (e.g. divorce and depression), but these methods do not reveal any new factors that may be pertinent in the process of resilience. By persisting with only quantitative measures there is an assumption that all significant variables have already been identified.

Voices of young people

The voices of young people remain somewhat absent in resilience research. Ungar consistently includes young people in his research but other theorists tend to rely on parent and teacher reports, or surveys of young people. While these forms of data collection provide some insight into the young person's functioning, it cannot be assumed that others have more insight into the young person's life than the young person themselves. Furthermore, if they are used in isolation there is the prospect that the most important risk and protective factors will remain undiscovered. It is also possible that interventions based on research that excludes youth may be ineffective if important factors are omitted.

An absence of culture and context in research

Despite evidence to the contrary, there remains some belief that there are universal risk and protective factors. Some of this belief may be based in the predominance of middle-class white research. That is, with most research being conducted in western suburban contexts, many of the results may be similar. When researchers attempt to apply these results to other contexts it is apparent that factors are not universally protective or a risk. To develop a coherent body of resilience research, it is critical that context and culture are taken into account, and that interventions are developed cognisant of the context/culture.

Lack of interventions to test theory

A commonality between the theorists is their call for interventions to test theories of resilience. For example, Masten suggests that there is a focus on interventions that include factors malleable to interventions that are enduring and generative. Despite the agreement over the need for interventions, there is little evidence of resilience interventions by any of the theorists. This is problematic, as it indicates that much of the resilience theory remains untested and is simply correlational data. Correlations show that two factors exist together (e.g. social competence and parenting warmth); however, until factors are manipulated in experimental design (e.g. increase warmth and test social competence) it cannot be known which factor is influencing the positive outcomes.

Advice, recommendations, conceptual frameworks for applied action

Despite the issues in resilience research, the construct remains a worthwhile pursuit. Unlike other health promotion research, resilience looks at the utility of protective factors *within* the context of risky situations. Resilience also refocuses the researcher to identify what is working in the midst of adversity, rather than a deficit model of only ascertaining the pathways to poor outcomes. However, to move forward the field of resilience requires greater clarity in terminology and definitions and a greater acknowledgement of context. Key suggestions are presented in the following section.

Measurement of positive outcomes

A key change that needs to be made in resilience research is the clarification of how positive outcomes are measured. The current approach to positive outcomes appears to be somewhat arbitrary with different theorists choosing a single indicator of positive functioning, a combination of positive indicators, lack of psychopathology, or a combination of positive indicators and lack of psychopathology. This diversity is highly problematic, as comparisons across theory cannot be conducted when different outcomes are utilised. Some of the solutions that may address these issues are discussed below.

Another critical change that needs to be made is ensuring that positive outcomes are contextually and culturally based, which will then provide research in resilience that is culturally and contextually relevant. The current practice of applying a usually western positive outcome (e.g. high academic achievement) across all contexts/cultures is not only unethical it also obstructs gaining understanding of different contexts/cultures. For example, in some communities work ethic is valued more than education. If this construct is not included as a positive outcome there may be an assumption that no young people are resilient in that context and the strengths of that community would never be realised.

The issues with current measures of positive outcomes could also be addressed by both measuring positive change and measuring positive outcomes across domains rather than excellence in one domain. By measuring positive change there is a greater likelihood that instances of resilience will be identified. For example, a child who has progressed from a fail grade to an average grade at school would be identified through this approach. Measuring multiple domains would also provide an opportunity to identify positive change in domains that may be excluded if only one domain of competence is utilised. For instance, an adolescent may show resilience in academic work but not in social competence. However, if social competence was the only domain measured, the adolescent's positive change in academia would be left undiscovered.

Some changes also need to be made to the inclusion of lack of psychopathology as a sign of positive outcomes. To begin with, signs of wellbeing need to be collected in conjunction with lack of psychopathology, as absence of disorder does not guarantee positive functioning. Measures of psychopathology also need to be interpreted with an understanding of the timing of the risk. In some resilience research, measures of psychopathology are identifying grief as a psychological disturbance when it is possible it is just a normative reaction following a traumatic event. Furthermore, levels of psychopathology need to be measured with an understanding of each individual's baseline. A baseline will show how the risk has altered their experience of psychopathology. For example, a

young person may have had high levels of depression throughout their life but shown a significant decrease in depression following a risk event. Without knowing the baseline it may be assumed the young person has taken steps backward, when in fact they are showing resilience following the adversity.

A final suggestion to improve the measure of positive outcomes is to include the voice of young people. Ask them if they believe they have experienced positive change. Ask them what has changed in their life. Some researchers believe that adolescents are untruthful, and a questionnaire is a more accurate way to measure positive outcomes. However, it would be difficult to produce a questionnaire that reported on all domains of the young person's life (e.g. social, emotional, academic), the changes that have occurred and an explanation of these changes. Importantly, it is also critical that external measures are not identifying a young person as resilient when they do not believe they are resilient themselves.

The issues around measurement and the suggestions to address these issues provide some insight into the complexity of measuring positive outcomes. It is clear that while there needs some flexibility to accommodate different contexts and cultures, there is also a need to be more methodical in the way measures are collected. In this way, all domains will be represented, positive change can be recognised, and measures of wellbeing will be evident alongside measures of psychopathology.

Research

It is recommended that current resilience theory is tested through the implementation of applied research to test some of the proposed models. Currently there is great debate with resilience research about many issues, including the labelling of factors and processes, approaches to risk and understandings of competence. These arguments cannot be resolved by creating further theory, but need to be tested and clarified through further clinical and applied research. This will provide data that will either negate or support the theories in question and ascertain if the theory has any influence in a practical application. In addition to that point, if theorists are not implementing interventions there are some questions over the purpose of the theory development.

There is also a requirement to manipulate specific variables in research to identify the mechanisms of variables. There are factors that are referred to frequently (e.g. social support, divorce, family cohesion) yet little is known about how those variables function. For example, in regard to social support, it would be useful to identify critical features of social support, why at-risk adolescents engage in social support, and what is the key resource that social support supplies to the at-risk adolescent (e.g. care, motivation, encouragement). When the critical mechanisms of variables are understood, it is likely that these protective factors can be implemented more effectively with greater consistency across settings. It is likely that research from other fields (e.g. family therapy) could inform this understanding.

As the key theorists discussed in this paper are North American or European researchers, it is recommended that an understanding of resilience be developed at the local level within Australian communities. This understanding would include an agreed understanding of resilience terms (positive outcomes, protective factors, risk factors) so that conceptualisations of resilience are grounded in the local community. Developing an understanding of resilience within diverse communities (e.g. rural, city, Aboriginal, CALD, affluent) will ensure that interventions are culturally

appropriate and ethically responsible. While there may be universal general principles that apply in Australia (e.g. good relationships), it is flawed to assume risk and protective factors are exactly the same across all communities. For example, relationships in remote areas may be promoted by discussions during camp fires while relationships in the metropolitan area may be promoted by eating at the dinner table. Furthermore, risk and protective processes differ from one context to another so it is likely that the both the understanding of resilience and response will be flawed.

Resilience research would also benefit by ensuring all key stakeholders are represented. Currently there remains an adult-focused understanding of resilience and the associated risk and protective factors. Adults can only give an observer's perception of what is meaningful to the child or adolescent. When children and adolescents are included in the research process, they can provide a first-hand account of what is meaningful in creating change within their culture and context. It is likely that these accounts will hold unique information that cannot be accessed through adult accounts, and possibly have the capacity to create real change.

Interventions (individual and population level/universal and targeted)

As noted in the previous section, resilience theories have not been tested through interventions or experimental design; therefore, any recommendations in the following section are tentative and subject to further investigation.

As noted previously, despite the shared understanding that the environment plays a key role in resilience, most theorists focus their recommendations for interventions on the child. While it is more straightforward to implement resilience interventions at the individual level, it is suggested that interventions be implemented simultaneously at the individual and community level so that individual change is supported by the community changes. For example, if social skills are chosen as a focus then the teaching of social skills would be supported by increasing the opportunities for positive social connections within the community. If academic achievement is the focus then focused tuition/school-level interventions could be complemented with strategies that raise the importance of academic achievement in the home. In this way, the adolescent can receive the skills that may help them to be resilient but the environment is also more conducive to those skills being promoted.

If interventions are implemented at the individual level, there still needs to be an acknowledgement of the multiple systems interacting within that context so that the intervention is effective. Some of these systems include the history of the community and the family, and the culture of the community. Unless all of these systems are considered, interventions will be either ineffective or even harmful. For example, if a community has experienced extensive job losses, workshops on self-efficacy (when there is little control or opportunity for mastery) may be inappropriate. Interventions focused on individuals can be effective if the whole system is considered in the intervention design.

While the environment around the child exerts an influence on their resilience through the provision of human and material resources, resilience is an interactive concept and also dependent on the skills of the adolescent to navigate towards resilience. Therefore it would be beneficial to provide adolescents with some skills on how to access resources related to resilience (e.g. positive relationships) and skills that are linked to resilience (e.g. problem solving, self-efficacy). Currently, there is no research to suggest upskilling adolescents has any effect on resilience, there is only evidence of a positive correlation between certain skills and resilience. Therefore, it is not yet

possible to know if one causes the other. However, due to the lack of evidence it would be worthwhile to introduce some of these 'resilience' skills and investigate their effect on young people's resilience and ability to access health resources.

Interventions at the individual level may also benefit from what Rutter refers to as "turning points". Turning points are a time in one's life where there is a break with the past and the opportunity for new options and constructive change. These turning points have been noted by all theorists and could be implemented to change negative trajectories. Ungar suggests changing the psychosocial resources around people to create a turning point, and Werner and Rutter propose developing new positive relationships to create new options. Specifically, Rutter considers mentoring as a possible pathway to turning points. It is possible that a whole community could also experience a turning point if they had the right resources and a break from the past. For example, a community with high unemployment may have new work opportunities through mining developments. This change in resources may be the opportune time to create a social change in the community and develop a new culture. However, similar to other areas of resilience, turning points require further research to identify how they work and under what conditions.

A recommendation that was derived from Masten's work is to use developmental transitions as opportunities to intervene. This approach is already evident in current efforts to support students transitioning from primary to high school. To ensure population interventions are effective it is suggested that critical transition points are identified through consultation with communities so that interventions are timed effectively. It is important that the efficacy of these interventions are measured as there is no evidence that intervening at transition points is more effective than leaving the child or adolescent to traverse the transition without help. As Werner states, many children "self-right in all but the most persistently adverse situations" without intervention.

There will never be one way of developing resilience in young people. The complexity of working within multiple systems require a different approach for each individual and community group. At the clinical level, the intervention should be tailored precisely to the young person's needs. This will require consulting with the young person and their family, and understanding the influence of their family, school, community and culture on their resilience. It will also require an analysis of the young person's skills, barriers to wellbeing (e.g. ineffective coping), and strengths. Conversely, at the public health level it would be unfeasible and costly to tailor interventions in this fashion. However, there still needs to be some tailoring of interventions to meet each community's needs. Through consultation with communities it would be possible to identify risk and protective factors so that interventions can be implemented with greater precision. While consultation can appear more challenging and time consuming, it shows greater respect to communities, provides them with ownership of the intervention, and is likely to result in more positive outcomes.

Conclusion

Based on the prior discussion, resilience can be operationally defined as:

> The belief of the adolescent and the community that the adolescent has experienced risk and is showing positive outcomes (both signs of competence and absence of psychopathology) according to the cultural and contextual expectations of the community.

While it would be simpler to have a definition that identified what constitutes risk and positive outcomes, adhering to such a universal definition would ensure that resilience is irrelevant to some communities and meaningful to others.

Crucially, unless some of the theories of resilience are tested, the concept of resilience lacks any real substance or utility. Consequently, there is a requirement for studies to be conducted to test if identified protective factors are simply correlational or if they have a causative effect. While this is easy to suggest, it is somewhat more difficult to conduct. This is due to the fact that protective factors tend to exist in a cluster and separating the influence of one factor over another when multiple factors are present may be creating an artificial condition that would not translate outside of the laboratory.

Despite these issues, resilience remains a worthwhile concept at both the population level and the clinical level. Some adolescents are successful despite risk. They beat the odds. If only a small portion of understanding can be garnered from these young people, it potentially could be harnessed to make a difference for those who have experienced adversity and not had positive outcomes. That advantage is a significant reason to persevere with the field, identify solutions and implement these solutions in public and clinical interventions.

References

GARMEZY, N. 1987. Stress, competence, and development: Continuities in the study of schizophrenic adults, children vulnerable to psychopathology, and the search for stress-resistant children. *American Journal of Orthopsychiatry,* 57**,** 159-174.

GARMEZY, N. 1991a. Resilience in children's adaptation to negative life events and stressed environments. *Pediatric Annals,* 20**,** 459-460, 463-466.

GARMEZY, N. 1991b. Resiliency and vulnerability to adverse developmental outcomes associated with poverty. *The American Behavioral Scientist,* 34**,** 416.

GARMEZY, N., CLARKE, A. R. & STOCKNER, C. 1961. Child rearing attitudes of mothers and fathers as reported by schizophrenic and normal patients. *The Journal of Abnormal and Social Psychology,* 63**,** 176-182.

GARMEZY, N., MASTEN, A. S. & TELLEGEN, A. 1984. The study of stress and competence in children: A building block for developmental psychopathology. *Child Development,* 55**,** 97-111.

LAZARUS, R. S. & FOLKMAN, S. 1984. *Stress, appraisal, and coping,* New York, NY, Springer Publishing Company.

LUTHAR, S. S. 1991. Vulnerability and resilience: A study of high-risk adolescents. *Child Development,* 62**,** 600-616.

LUTHAR, S. S. & BARKIN, S. H. 2012. Are affluent youth truly "at risk"? Vulnerability and resilience across three diverse samples. *Development and Psychopathology,* 24**,** 429-49.

LUTHAR, S. S. & BROWN, P. J. 2007. Maximizing resilience through diverse levels of inquiry: Prevailing paradigms, possibilities, and priorities for the future. *Development and Psychopathology,* 19**,** 931-955.

LUTHAR, S. S., CICCHETTI, D. & BECKER, B. 2000. The construct of resilience: A critical evaluation and guidelines for future work. *Child Development,* 71**,** 543-562.

LUTHAR, S. S., D'AVANZO, K. & HITES, S. 2003. Maternal drug abuse versus other psychological disturbances. *In:* LUTHAR, S. S. (ed.) *Resilience and vulnerability: Adaptation in the context of childhood adversities.* New York, NY: Cambridge University Press.

LUTHAR, S. S. & LATENDRESSE, S. J. 2005. Children of the affluent: Challenges to well-being. *Current Directions in Psychological Science,* 14**,** 49-53.

LUTHAR, S. S., SAWYER, J. A. & BROWN, P. J. 2006. Conceptual issues in studies of resilience: Past, present, and future research. *Annals of the New York Academy of Sciences,* 1094**,** 10-115.

MASTEN, A. S. 2001. Ordinary magic: Resilience processes in development. *American Psychologist,* 56**,** 227-238.

MASTEN, A. S. 2007. Resilience in developing systems: Progress and promise as the fourth wave rises. *Development and Psychopathology,* 19**,** 921-930.

MASTEN, A. S. 2011. Resilience in children threatened by extreme adversity: Frameworks for research, practice, and translational synergy. *Development and Psychopathology,* 23**,** 493-506.

MASTEN, A. S. 2013. Afterword: What we can learn from military children and families. *The Future of Children,* 23.

MASTEN, A. S. 2014. Global perspectives on resilience in children and youth. *Child Development,* 85**,** 6-20.

MASTEN, A. S., CUTULI, J. J., HERBERS, J. E. & REED, M.-G. J. 2009. Resilience in development. *In:* SNYDER, C. R. & LOPEZ, S. J. (eds.) *Oxford Handbook of Positive Psychology.* 2nd ed. New York, NY: Oxford University Press.

MASTEN, A. S., HUBBARD, J. J., GEST, S. D., TELLEGEN, A., GARMEZY, N. & RAMIREZ, M. 1999. Competence in the context of adversity: Pathways to resilience and maladaptation from childhood to late adolescence. *Development and Psychopathology,* 11**,** 143-169.

MASTEN, A. S. & TELLEGEN, A. 2012. Resilience in developmental psychopathology: Contributions of the Project Competence Longitudinal Study. *Development and Psychopathology,* 24**,** 345-61.

RUTTER, M. 1979. Protective factors in children's responses to stress and disadvantage. *Annals of the Academy of Medicine, Singapore,* 8**,** 324-338.

RUTTER, M. 1998. Developmental catch-up, and deficit, following adoption after severe global early privation. *Journal of Child Psychology and Psychiatry,* 39**,** 465-476.

RUTTER, M. 2006. Implications of resilience concepts for scientific understanding. *Annals of the New York Academy of Sciences,* 1094**,** 1-12.

RUTTER, M. 2007. Resilience, competence, and coping. *Child Abuse and Neglect,* 31**,** 205-209.

RUTTER, M. 2008. Institutional effects on children: Design issues and substantive findings. *Monographs of the Society for Research in Child Development,* 73**,** 271-278.

RUTTER, M. 2012. Resilience as a dynamic concept. *Development and Psychopathology,* 24**,** 335-44.

RUTTER, M. 2013. Annual research review: Resilience - clinical implications. *The Journal of Child Psychology and Psychiatry,* 54**,** 474-487.

RUTTER, M., COLVERT, E., KREPPNER, J., BECKETT, C., CASTLE, J., GROOTHUES, C., HAWKINS, A., O'CONNOR, T. G., STEVENS, S. E. & SONUGA-BARKE, E. J. S. 2007. Early adolescent outcomes for institutionally deprived and non-deprived adoptees. I: Disinhibited attachment. *Journal of Child Psychology and Psychiatry,* 48**,** 17-30.

UNGAR, M. 2004. A constructionist discourse on resilience: Multiple contexts, multiple realities among at-risk children and youth. *Youth and Society,* 35**,** 341-365.

UNGAR, M. 2005a. Introduction: Resilience across cultures and contexts. *In:* UNGAR, M. (ed.) *Handbook for working with children and youth: Pathways to resilience across cultures and contexts.* Thousand Oaks, CA: Sage.

UNGAR, M. 2005b. Pathways to resilience among children in child welfare, corrections, mental health and education settings: Navigation and negotiation. *Child and Youth Care Forum,* 34**,** 423-444.

UNGAR, M. 2008. Resilience across cultures. *British Journal of Social Work,* 38**,** 218-235.

UNGAR, M. 2011. The social ecology of resilience: Addressing contextual and cultural ambiguity of a nascent construct. *American Journal of Orthopsychiatry,* 81**,** 1-17.

UNGAR, M. 2013. Resilience, trauma, context, and culture. *Trauma, Violence, and Abuse,* 14**,** 255-266.

UNGAR, M., BROWN, M., LIEBENBERG, L., CHEUNG, M. & LEVINE, K. 2008. Distinguishing differences in pathways to resilience among Canadian youth. *Canadian Journal of Community Mental Health (Revue canadienne de santé mentale communautaire),* 27**,** 1 - 13.

UNGAR, M., BROWN, M., LIEBENBERG, L., OTHMAN, R., KWONG, W. M., ARMSTRONG, M. I. & GILGUN, J. F. 2007. Unique pathways to resilience across cultures. *Adolescence,* 42**,** 287-310.

UNGAR, M. & TERAM, E. 2005. Qualitative resilience research: Contributions and risks. *In:* UNGAR, M. (ed.) *Handbook for working with children and youth: Pathways to resilience across cultures and contexts.* Thousand Oaks, CA: Sage.

WERNER, E. E. 1982. Vulnerable, but invincible: A longitudinal study of resilient children and youth. *American Journal of Orthopsychiatric Association,* 59.

WERNER, E. E. 1989. High-risk children in young adulthood: A longitudinal study from birth to 32 years. *American Journal of Orthopsychiatry,* 59**,** 72-81.

Appendix A

Table 2: Protective processes – Rutter, Werner, Garmezy and Masten

	Individual	Family	Community
Rutter	• Mental features (planning, self-control, self-reflection, sense of agency, self-confidence, determination)	• Social relationships • Maternal warmth, sibling warmth, a positive atmosphere in parent-child relationships (parental affection and a good relationship with either parent)	• Schools
Werner	• Infants – active, fewer eating/sleeping habits that distressed parents • Toddlers – alertness and autonomy, tendency to seek out novel experiences, positive social orientation, more advanced communication skills, locomotion, and self-help skills • Elementary – got on better with classmates, better reasoning and reading skills many interests • High school – positive self-concept, internal locus of control, more nurturant, responsible, achievement oriented • Had at least one and usually several close friends	• Less siblings • Less separations from parents • Few had prolonged separations from parents during first year • Close bond with one caregiver • Structure, rules and assigned chores were a part of daily routine	• Some had favourite teacher • Had informal networks of support • More stress, more protective processes needed
Garmezy	• Individual factors included dispositional attributes of the child such as temperament (activity level), how one met new situations (positive responsiveness to others), and cognitive skills. Garmezy indicated that temperament modified stressors.	• Familial factors included family cohesion and warmth (despite poverty or marital discord), the presence of a caring adult in the absence of responsive parents (such as a grandparent), or a concern by parents for the wellbeing of their children.	• Support factors were external to family, and included the availability and use of external support systems by parents and children, a strong maternal substitute, a supportive and concerned teacher, or institutional structure that fosters ties to the larger community (church, social worker).

	Individual	Family	Community
Masten	• Effective health and stress systems (Allostasis, normal immune and HPA function) • Problem-solving skills • Normal cognitive development, IQ • Self-regulation skills for self-control of attention, arousal and impulses • Easy temperament in infancy; adaptable personality later in development • Positive self-perceptions or self-efficacy • Faith and a sense of meaning in life • A positive outlook on life • Talents valued by self and society • General appealingness or attractiveness to others • Adaptability to stress • Executive functioning • Self-worth • Positive relationships	• Positive attachment relationships • Close relationships to competent, prosocial and supportive adults • Authoritative parenting (high on warmth, structure/monitoring and expectations) • Secure attachment, connections to competent and caring adults, mentors, social support • Positive family climate with low discord between parents • Organised home environment • Postsecondary education of parents • Parents with qualities listed as protective factors within the child • Parents involved in child's education • Socioeconomic advantages • Connections to prosocial and rule-abiding peers • Romantic relationships with prosocial and well-adjusted partners	• Effective schools • Ties to prosocial organisations such as schools, clubs, or scouting • Collective efficacy, cultural rituals and routines, bonding to organisations with prosocial values • Good emergency social services (such as 000) • Good public health and health care availability • Opportunities for mastery and relationships with positive adults and peers, neighbourhood

Appendix B

Table 3: Protective processes – Ungar

	Individual	Relationships	Community	Culture
Ungar	• Assertiveness • Problem-solving ability • Self-efficacy (a sense of control over one's world • Being able to live with uncertainty • Self-awareness, insight • Perceived social support • A positive outlook, optimism • Empathy for others and the capacity to understand others • Having goals and aspirations • Showing a balance between independence and dependence on others • Appropriate use of or abstinence from substances like alcohol and dugs • A sense of humour • A sense of duty (to others) or self, depending on culture	• Quality of parenting that meets the child's needs: The family is emotionally expressive and parents monitor the child appropriately • Social competence (person knows how to act socially) • Having a positive mentor and role models • Meaningful relationships with others at school, home, perceived social support, peer group acceptance	• Opportunities for age-appropriate work • Exposure to violence is avoided in one's family, community and with peers • Government plays a role in providing for the child's safety, recreation, housing, jobs when older • Meaningful rites of passage with an appropriate amount of risk • Community is tolerant of high-risk and problem behaviour • Safety and security needs are met • Perceived social equity • Access to school and education, information, learning resources	• Affiliation with a religious organisation • Youth and their family are tolerant of each other's different ideologies and beliefs (such as gender roles) • Cultural dislocation and a change (shift) in values are handled well • Self-betterment (not economic betterment, but betterment of the person and the community) • Having a life philosophy • Culture/spiritual identification • Being culturally grounded: knowing where you came from and being a part of a cultural tradition which is expressed through daily activities

Appendix C

Table 4: Masten's Hot Spots for promoting resilience in children and youth (Masten et al., 2009)

Risk-focused strategies: Preventing/reducing risk and stressors	Asset-focused strategies: Improving number or quality of resources or social capital	Process-focused strategies: Mobilising the power of human adaptation systems
• Prevent or reduce the likelihood of low birth weight or prematurity through prenatal care • Screen for and treat depression in mothers of newborns • Prevent homeless episodes through housing policy or emergency assistance • Reduce neighbourhood crime or violence though community policing • Clean up asbestos, lead, land mines where children live or play • Avoid multiple foster care placements	• Provide food, water, shelter, medical, or dental care • Provide a tutor, nurse, or guardian *ad litem* • Organise activity clubs for children or build a recreation centre • Educate parents about child development and effective parenting • Restore community services after a disaster • Train care providers, corrections staff, or police in child development • Educate teachers about child development and effective teaching	• Foster secure attachment relationships between infants and parents through parental-sensitivity training or home-visiting programs for new parents and their infants • Nurture healthy brain development through high-quality nutrition and early childhood programs • Nurture mentoring relationships for children through a program to match children with potential mentors • Support healthy family formation and function though education and policies • Build self-efficacy through graduated success models of teaching • Encourage friendships of children with prosocial peers in healthy activities, such as extracurricular activities • Support cultural traditions that provide children with adaptive rituals and opportunities for bonds with prosocial adults, such as religious education or classes for children where elders teach cultural traditions of dance, meditation, etc.

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