Resilience in Children

Over the past four decades, research on resilience has gone through different stages. The first study, published in 1973, examined the adaptation of children at risk, related to pathology and schizophrenia. Tools and frameworks about resilience have started to develop and by 1990, the number of scientific articles for the term 'resilience' approached 2,000 items. As the research continued, through the different stages and different scientific perspectives, this number grew to over 40,000 items published in 2010 (Ager, 2013).

The first three stages of research on resilience were largely focused on behavioral and developmental psychology. As more and more scientific studies were investigating individuals' adjustments following traumatic events, such as war, loss, diseases, mental disorders, injuries, homelessness (Sleijpen et al., 2015), new conceptualizations of the construct of resilience required a different approach, that was non-linear in nature (Overton, 2013). The construct grew more dynamic and ideas from developmental systems theory, neurobiology, ecological systems theory, family systems, and psychopathology, were integrated across multiple levels of analysis (Masten & Obradović 2006).

This integrated approach of the current wave of resilience research has since refuted long-held assumptions of the resilience construct. Resilience was not due to individual enduring attributes only, but depended on the function of complex systems, such as time and space, which are continually adapting and transforming.

Definition of resilience

These different waves of scientific studies on resilience are in part explaining why researchers have yet to agree to a single definition of the construct. Fundamentally, resilience refers to a person's ability to successfully adapt to intense stress, trauma or adversity (Masten, 2014). One can view it as positive growth under acute stress or positive development of people facing considerable amounts of adversity (Ungar, 2011).

Others have noted that resilience, more complex in nature, refers to a transforming process, allowing an individual to adapt and reduce toxic stress to tolerable stress, eventually significantly reducing the harmful psychological and physiological effects of the original stressors (Shonkoff et al 2015)

The complexity of resilience and controversies

Although some researchers considered resilience as a dichotomous variable (i.e. vulnerable vs resilient), further development suggested resilience to be measured on a continuum (Sleijpen et al., 2015). Hart (2008) described three levels as: "resilient", "near-resilient" and "non-resilient", and argued that these levels are not only theoretical but empirically verifiable. These levels also appear to be useful for prevention and clinical intervention (Hart, 2008).

There are quite a few controversies about the concept of resilience, which makes it harder to operationalize. Despite the number of scientific articles that have investigated resilience factors

and outcomes, several questions are still in debate in regards to the construct's conceptualization, and ultimately its measurement. At the root, these controversies start with a lack of consensus over its definition (Guilera et al., 2015). Resilience definitions are set in historical, cultural, developmental and time contexts. Therefore, it is quite possible for the resilience outcomes to look different depending on the shorter or longer time frame (Masten & Obradović, 2006).

Informed by the early research on resilience and despite a lack of consensus, researchers agree that resilience is a complex family of concepts. Resilience cannot be viewed and studied as a single global construct anymore, but as a multidimensional one. Therefore, resilience is not to be conceptualized as a single developmental trait or process, but is the result of a combination of many attributes and processes.

Another debate concerns whether resilience should be considered "recovery or resistance" (Barber, 2013). Some authors have separated the two and have noted that resilience describe a full recovery after a disturbance, whereas resistance was referred as maintaining functioning under stressful events. Other researchers suggest the construct to be a response in the face of challenge that is characterized both as resisting and being less vulnerable by having the ability to handle stress successfully. (Wexler, 2009).

These historical debates and lack of consensus over the definition of resilience makes the assessment of resilience more difficult, because ideally, all the variables should be included in a single instrument to provide a comprehensive measure (Guilera et al 2015).

From Trait to Process

Resilience was first thought as a trait. It was assumed that people were resilient primarily because of their personal characteristics or factors that predispose individuals for resilience. But personality traits, such as conscientiousness, or humour, autonomy and enthusiasm (Sleijpen et al, 2015), rarely explains more than a small portion of the variation in behavior. For example, the personal ability to self-regulate and maintain an internal locus of control have all been associated with moderating the negative effects of childhood adversity (Zolkoski, 2012). McCrea et al. (2000) made an argument that in the vast majority of first waves research on personality and resilience, the personality variables were thought to influence resilience outcomes; but it is also possible that the stressor itself could have influenced the personality variables, especially if the personality traits were measured many months after the stressor event (Bonanno & Mancini, 2008). In other words, there is no single predictor (i.e., the resilience trait) that is likely to have a dominant influence on resilient outcomes (Bonanno & Diminich, 2013). The individual protective factors, such as personality traits (e.g. optimism, flexibility, empathy, extroversion, assertiveness), and dispositional traits (e.g. an easy temperament) were slowly replaced with a growing understanding of resilience as a complex and evolving process that depends on protective factors within the individual, along with those found in social entities, such as families and communities (Theron & Theron, 2010).

The Social Ecological Model

Further theories suggested resilience to rather be a dynamic multilevel process, characterized by a complex social and ecological system that act like catalysts of protective factors. Resilience seems to be initiated after the homeostatic processes of the individual are disturbed, and a new homeostatic structure appears, through a process of adaptation across multiple systems of the childrens' social ecology. (Merrill weine et al., 2014). This perspective integrates ideas from developmental psychopathology, biology, general systems theory, resilience theory, ecological theory, developmental and family systems theory (Cicchetti 2013, Masten 2014, Zimmerman 2013)

Ungar (2011) proposed a social ecological model of resilience that highlights the role of context. This model was concerned with the relation of living organisms to one another and to their physical surroundings. Ungar said "If, however, the science of resilience is to advance credibly, the focus of our attention needs to be more often on ecological conditions that contribute to good growth under adversity".

Ungar, Ghazinour, & Richter (2013) have proposed three principles of a socio-ecological model of resilience whereby many implications for the design of interventions as well as social policy can be recognized. These three principle are equifinality, differential impact and cultural moderation. The term equifinality was applied in general systems theory and refers to the multiple pathways one can take to arrive at the same outcome. Differential impact refers to the difference of people's perceptions of the resources available to them and the opportunities they get to fully utilize these resources. Finally, cultural moderation refers to people's beliefs, values, cognitions and behaviors, within the context of culture, that seem to moderate the negative effects of adversities.

By the time the model of social-ecology surfaces, authors have already started studying the effects of context, such as family and communities, schools, organizations and religion (Theron & Theron, 2010). An increasing international literature displays results of studies of the effect of context and contextual protective factors. Ungar et al. (2007) conducted a study of adolescents in 11 countries. They identified five aspects of the environment that create resilient processes across cultures: (1) relationships, (2) a strong identity, (3) a sense of control and social justice, (4) access to resources, (5) a sense of belonging. Such research shows that individual characteristics account for less of the positive resilience outcomes, whereas environmental and contextual factors are more significant. Studies of adverse childhood experiences (e.g., child abuse, domestic violence) demonstrate that having access to a trusted adult moderate resilience outcomes and contributes to a child's sense of safety, which in turn has the effect of decreasing risks of poor mental health and emotional well-being in adulthood (Bellis, 2014a; bellis, 2014b, Feder, 2009 Afifi, 2011). Studies of children exposed to high levels of stress and trauma, such as maltreated children, marginalized children or child soldiers, show that individual trait, such as personality characteristics, account for less of the positive developmental outcomes, whereas environmental factors, when measured, are more influential (DuMont, Ehrhard-Dietzel, & Kirkland, 2012; Klasen et al., 2010).

Using Ungar's (2011) social-ecological framework, some researchers have identified factors and processes that according to young refugees promote their resilience: (1) acting autonomously, (2) performing well at school, (3) perceiving support from peers and parents, and (4) participating in

the new society. They have also introduced contextual diversity into their research, such as living arrangement, residence status and cultural practices. They emphasized the need to listen to diverse populations with different social and cultural backgrounds (Sleijpen et al, 2015).

Existing data were reanalyzed through the social-ecological lens for adolescents and contextual factors at school. Hall & Theron (2016) have determined underlying themes of how schools enabled resilience in youth: (1) They provided space for kids to be engaged in sporting activities, (2) teachers provided life-learning and academic support, (3) they provided space for attachment with peers. Theron & Theron (2010) also noted that being active in a religious community was a way of supporting children going through adversity.

The Time Factor

In addition to contextual factors, time seems to be an essential part of research on resilience because children's patterns of adaptation to adversity unfolds in time. Masten (2015) comments on the essential role of time in resilience theory, as well as methods and interventions. In fact, resilience interventions are more and more focused on strategic timing. Bonanno (2012) even argues that resilience needs to be studied as a stable trajectory of healthy functioning, instead of measuring a single or several attributes before and after a given adverse event. When taking time into account, (Sleijpen et al., 2015) found that the factor that negatively influenced resilience was the duration of the period of uncertainty following an adverse event. It also appears that past experiences would moderate the effects of the disturbance, in terms of resilience. More negative past experiences would affect a child more negatively and therefore it would become more difficult for them to recover from a given disturbance. Ungar, Ghazinour & Richter (2013) further noted that the more children are exposed to adversity, such as violence, poverty, or illness, the more their resilience depends on the quality of the environment and the resources available, rather than individual characteristics. In a resilience study where immigrants had to wait long to receive a residence permit, it was suggested that resilience refers to a complex process that is context (socio-ecological context), as well as time specific (Masten, 2014; Sleijpen, 2015).

Some longitudinal studies have been conducted to investigate and report youth's adaptive and prosocial behaviors at different point in time (18 months to 3 years). Results indicate significant positive growth of prosocial behaviors over time when in school and with high levels of community acceptance (Betancourt et al., 2010; Oshri et al., 2017). More research studying trajectories of healthy functioning and involving time as a critical factor, is necessary to understand the complex construct of resilience and how it relates to the time factor.

Interventions and Public Policy

The Penn Resiliency Program, a 12-session after school intervention based on resilience theory, investigated 718 families. The participants were asked to complete surveys before the intervention, for a baseline, at the end of the 12-week intervention, and every 6 months, for 3 years. Researchers found that it successfully prevented elevations in depression symptoms compared to a control group (Cutuli et al, 2006).

Other resiliency-based models and advising curricula are being developed and tested. Feedback from schools that are using resilience models suggest an increasing interest in such programs, which are explicitly developing a culture of resiliency within schools. Some staff have noted an increasing relationship between students and school teachers (Bernier et al., 2014). Some Australian schools are also adopting resilience-based education programs. Knight, (2007) found that such programs had positive influence on school culture, connecting individuals to communities, and reducing isolation.

Public policy also started to adopt ideas from resilience theory. A research review (Ager, 2013) identified 108 papers addressing public policy implications regarding child resilience. This literature suggests that many sectors are engaged in this resilience movement, such as education, social work, and health fields. Public policy recommended a new focus on family dynamics (e.g., parental skills workshops, marital harmony seminars, support systems education), counseling and mental health services (e.g., school counseling, programs for special educational needs or social workers, clinical intervention with individuals), school environments (e.g, create mentorship programs, integrated curriculum, school-level reforms, emotional support from teacher and school leaders), community programs (e.g., self-help support programs, the integration of church, community and health centers, or tutoring, mentoring, and after-school programs), and socioeconomic improvement (e.g., the increase of social welfare programs, provide opportunity to supplement income, develop violence prevention programs).

Resilience Diagnostic and Decision Tree

Ungar (2015) suggested a diagnostic criteria for resilience, comprised of 3 domains. Diagnosing resilience starts with a thorough assessment of the exposure to the disturbance. The assessment of this first domain requires the examination of 4 dimensions: (1) Severity (e.g., does the exposure to the disturbance poses a significant threat to the child's wellbeing?); (2) Chronicity (e.g., is the duration of the disturbance significant?); (3) Ecology (e.g.; is the adversity experienced at one or more systemic levels?); (4) Cause of adversity (e.g.; is the adversity caused by the individual, or is the adversity caused by something beyond their control?) (5) Cultural and contextual relevance (e.g., is the threat perceived individually or collectively?).

The second domain of the diagnosis of resilience is concerned with resilience in relation to the level of exposure to adversity. The assessment of this domain requires the examination of 2 dimensions: (1) Individual dimension (e.g., individual temperament, personality, cognitions, locus of control, self-regulation); (2) Contextual dimension (e.g., availability, accessibility, and strategic use of individual, family, and community resources).

The third domain relates to multidimensional considerations such as (1) time (e.g., are coping strategies developmentally appropriate and sustainable for the age of the child?); and (2) culture (e.g., do the coping strategies fit within the community's culture of successful coping).

Using these three dimensions, Ungar (2015) proposes a five-stage assessment tool that can be utilized by individuals, school leaders, mental health professionals, or social worker to predict resilience. The assessment provides a decision support tool for analyzing what the potential resilience outcomes would be, and ultimately, how to proceed. The first phase of this method

consists of analyzing the exposure to adversity, by asking the question "Is there evidence of acute exposure to adversity that may threaten a child's wellbeing? The answer to this question must be yes to proceed with the phase 2. If the answer is no, the assessor investigates the child's strengths, but not resilience. The second phase consists of analyzing the impact of protective processes, by asking the question "Is the child's acute exposure to adversity excessively severe or chronic?" If yes, the assessor proceeds directly with Phase 3 (environmental resources), then assess individual capacities. Sufficient individual characteristics might be sufficient to make them resilient if the exposure to adversity is less severe or less chronic. In phase 3, the assessor reviews the availability and accessibility of resources and analyzes coping strategies. An environment with enough resources can predict resilience when these resources are strategically used. When few environmental resources are available or accessible, resilience is only predicted if the levels of risk is low or medium, and if the child has individual characteristics to cope. If the risk level is high, the assessor analyses whether the child's coping strategies are experienced as adaptive or maladaptive. If the coping strategies are either experienced or perceived as adaptive, then resilience is predicted. If not, the assessor proceeds to phase 5 to investigate contextual and cultural dimensions regarding protective processes. Resilience is predicted at that stage if (1) maladaptive behaviors are reasonable accommodations given the availability and accessibility of resources, or (2) coping strategies reflect relevant forms of adaptation that are culturally and socially desirable and accepted.

Future Research

Bonanno (2012) identified several guides for future research. He proposes that sound studies of resilience after severe disturbance should meet the following criteria: (1) the temporal bounds of the negative event needs to be clearly defined, and (2) resilience needs to be measured, more than the absence of diagnosable pathology, but based on measurements obtained at multiple points in time, with the initial measurement obtained a few weeks after the negative event.

Recent research has also begun to identify the genetic and neural pathways that underlie resilience. Such research has shown that resilience is moderated by adaptive changes in several neural mechanisms. There is growing interest as well in resilience research in relation to biological programming effects and plasticity of the human brain over time (Masten, 2015).

More research needs to be done on resilience and studies are continuing to be published. As more and more models arise, such as Ungar's (2011) socio-ecological model, creative new waves of resilience research appear, new methods, assessment tools and interventions are developed, and childrens' depression symptoms, negative self-worth, or poor mental health and emotional well-being in adulthood can be successfully prevented.

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