

Surviving and Thriving: An Introduction to Childhood and Youth Post-Disaster Recovery in the Context of the Canterbury Earthquakes of 2010-2012

Maureen F. Mooney, Sarb Johal, Douglas Paton,
Ruth Tarrant & David Johnston

M.F.Mooney@massey.ac.nz, S.S.Johal@massey.ac.nz, Douglas.Paton@utas.edu.au,
R.A.Tarrant@massey.ac.nz, David.Johnston@gn.cri.nz

School of Psychology, Massey University, Wellington, New Zealand
School of Psychology, University of Tasmania, Australia

Abstract

Potentially traumatic experiences, such as disasters, represent particularly complex experiences. While generally agreed that adversity has definite effects at a population level, the nature of these effects is open to debate. Past research has tended to focus on vulnerability and trauma. However, recent research suggests that experiencing adversity can sometimes be resolved in terms of enhanced well-being, and capacities to adapt. The specific focus of this paper is on children and youth, as there has been minimal research on how models of adaptation and accommodation in adults may apply to young people. The study seeks to further understanding of factors and processes that promote positive coping, adaptation, and well-being. It will examine adaptation using a study of experience over the course of a recovery process. A repeated measures approach will examine recovery processes, including resilience and post-traumatic growth. It is hoped that results will inform future preparation for adversity, and increase support to children and youth recovering from challenging life experiences, including disasters.

Keywords: Disaster, Childhood recovery, Positive coping, Resilience, Post-traumatic growth

Introduction

Adversity and challenge are parts of everyday life. During the normal course of a human life, most people can expect to face challenges from one or more potentially traumatic events (PTEs) (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). When people experience adverse events and situations, (e.g., road accidents; loss of loved ones; criminal assaults; man-made, or natural disasters), they live through consequences which may erode their quality of life and cause stress and distress.

Natural disasters, as PTEs, represent particularly complex experiences because they threaten one's survival and can result in losses of homes, income and family networks. Understanding these consequences requires articulating; a) the elements of the traumatic experience, b) how they unfold over time, and c) how this process creates positive and negative consequences.

Specific elements of a potentially traumatic experience can influence the impact on the people affected. For example, some research has demonstrated that prior exposure to PTE is a risk factor (King, King, Foy, Keane, & Fairbank, 1999), as it sensitises individuals to the new stressor thus increasing the impact. However, Masten and Narayan (2012) develop a more complex analysis and describe prior exposure as either sensitisation (vulnerability) or inoculation (protection). Other research has underlined elements such as suddenness of the event, length of exposure, and type of loss as influencing impact of events (Hobfoll et al., 2007).

Yet, it is not just the negative event or events themselves that produce stress. It is also the way the event is interpreted by the people affected. The person's interpretation of an event, and their capacity to handle it, is important in measuring whether that event will be experienced as traumatic. Joseph and Williams (2005) have stated that there are large differences in severity and chronicity of reactions. It has been hypothesized by numerous researchers that some characteristics of individuals, and their social environments, may act as a buffer in influencing how they appraise PTEs (Masten & Narayan, 2012).

There are challenges in research on disasters. Researchers note, that one of the limitations of research in the context of disaster, is that

data are often self-reported or observed, and the subsequently noted differences may not be directly attributable to the disaster (Ford, Tennen, & Albert, 2007). Most disaster research is retrospective and research has demonstrated that people have real difficulty in accurately recalling past states or attributes (Frazier & Berman, 2006). Further, despite their adverse, challenging nature, it cannot be assumed that the effects of disasters on people are universally negative.

Overall, research findings acknowledge that most people cope and recover from disasters if given basic support (Eisenbruch, de Jong, & van de Put, 2004). Therefore, although disasters, as adverse events, can be traumatic, only a minority develop psychopathology as a result of living through these events. Ozer, Best, Lipsey, and Weiss (2003) noted that “roughly 50-60% of the U.S. population is exposed to PTEs but only 5-10% develop Post Traumatic Stress Disorder (PTSD) (p. 54). Bonanno, Brewen, Kaniasty, and La Greca (2010) state that disasters cause serious psychological harm in only a minority of exposed individuals. Much of the literature is consistent in concluding that more than half of a population exposed to disaster experience only transient distress and maintain a stable trajectory of healthy functioning (Bonanno et al., 2010). The following section describes processes in recovery trajectories.

Coping and Recovery

When people attempt to deal with, or manage a disaster situation they can be said to be trying to cope. Coping and recovering from disasters and their consequences are complex phenomena. Coping can be said to refer to the thoughts, actions, and strategies we use in order to deal with stress and distress (Beutler & Moos, 2003).

In the literature, recovery from disasters has been defined in a multitude of ways. The term recovery is often embedded in a model of repair and restoration to a pre-disaster state. However, as Paton and Johnston (2006) have concluded, changes in the physical, social and psychological reality resulting from the disaster, exclude a return to the pre-event state. Consequently, in this paper, recovery will be understood to encompass the trajectory a person takes post-disaster, to adapt to, assimilate or actively manage their altered present, so that they are able to function adequately in their new circumstances. These recovery trajectories develop, evolve and take form over time.

Thus, the disaster recovery outcome depends on a combination of risk and resilience factors, as well as coping strategies (Mooney et al., 2011). In fact, research shows that there are multiple patterns in outcome (Bonanno, Galea, Bucchiarelli, & Vlahov, 2006). These patterns or trajectory outcomes range from people functioning below their pre-disaster level to those functioning up to or above the pre-disaster level.

It is not only the definition of concepts that influence findings, it is also the lens through which phenomena such as adversity and post-disaster recovery is examined. The next section briefly discusses research on the effects of adversity such as disasters on adults and children.

Background

Trauma and Disasters

Historically, research examining coping and recovery has concentrated on traumatisation resulting from adverse events. Research on post-disaster recovery, within psychology, then, has tended to investigate trauma and vulnerability. Most of the knowledge about how people cope with trauma and the associated losses and stress came from those who showed extreme stress reactions or sought treatment: those whose lives were chronically disrupted by their reactions to the negative event. Furthermore, much research on the effects of severe psychological stress has focused on stress-related adult psychopathology (Adams & Boscarino, 2006; Brewin, Andrews & Valentine, 2000; Ozer et al., 2003).

Although there is a growing body of research on effects of disasters on a population, minimal research has attempted to examine how patterns of response to disasters in adults may be applicable to children or youth. Nevertheless, a few studies have also focused on trauma, vulnerability and adversity in children (e.g., Copeland, Keeler, Angold & Costello, 2007; Ronan & Johnston, 1999). However, there are still gaps in theory to understand childhood trauma and childhood psychopathology, such as Acute Stress Disorder ASD or Posttraumatic Stress Disorder PTSD (La Greca, Silverman, Lai, & Jaccard, 2010; Salmon & Bryant, 2000).

From Trauma to Thriving

In recent decades, with the advent of positive psychology, research has begun to look at how people cope and adapt in constructive ways, and

experience enhanced well-being (Seligman & Csikszentmihalyi, 2000). This paradigm shift in psychology nurtured research that endeavoured to understand what is well-being and adaptive functioning. Evidence from numerous studies indicates that well-being is a multi-dimensional phenomenon that includes aspects of both the hedonic (happiness and life satisfaction) and eudemonic concepts of well-being (meaning and self-realisation) (Ryan & Deci, 2001).

Positive psychology examines constructive adaption and as such, it focuses on well-being and the conditions, strengths and capacities that allow people to thrive. Frederickson (2001), in her Broaden-and-Build theory, looked at how positive emotions can enhance well-being. In this prospective longitudinal study, higher levels of positive emotion prior to the September 11 New York terrorist attacks, predicted greater levels of resilience and growth in the months following (Frederickson, 2001; Tugade & Frederickson, 2004). Optimism too has been shown to have a positive impact on coping strategies and consequent recovery outcomes. Individuals demonstrating dispositional optimism tend to see positive outcomes to adverse situations, employ more problem-focused coping in controllable situations and make more use of reframing and acceptance coping in uncontrollable situations (Scheier, Carver, & Bridge, 2001). In the context of understanding disasters and their impact, the focus from positive psychology examines how a certain proportion of people can recover from disasters in such a way as to live to a fully functioning capacity. Some survivors even thrive.

What then are the elements and processes that promote this positive coping and adaptive recovery? Two of the processes, studied in recovery trajectories that reflect positive coping, are resilience processes and post-traumatic growth (PTG) or post-adversity growth. These processes are now briefly discussed.

Resilience

Resilience, as a metaphor has long been used to describe a person's capacity to resist or bounce back from adversity; to recover rapidly and well after the occurrence of an adverse event. It has however been defined in a multitude of ways. A broad definition would describe it as a propensity toward positive developmental outcomes under high-risk conditions (Lepore & Revenson, 2006). In a disaster context, resiliency then is a capacity

for successful adaptation despite challenging and threatening circumstances that create the experience of significant social, psychological and physical disequilibrium. The resilience research framework has been influenced by developmental systems theory (Gottlieb, 2007) and Bronfenbrenner's ecological model (Bronfenbrenner, 1979). Both of these models perceive the individual, not in isolation but interacting in space and time, with their social environments.

Models of resilience have evolved over the last decades. Earlier models studied resilience from the perspective of risk or vulnerability factors compared to strength and capacity factors, and described individuals as resilient. However, later research has conceptualised resilience as: a process rather than an outcome (Norris, Steven, Pfefferbaum, Wyche, & Pfefferbaum, 2008); as a dynamic process, not a fixed state (Cyrułnik, 1999 ; Luthar, 2005); and involving multiple interacting systems (Mancini & Bonanno, 2006; Masten, 2011). Thus, an individual may practise resilient strategies to cope with adversity but cannot be definitively categorised as resilient. The capacity to use resilient strategies to successfully adapt to threatening circumstances is not fixed, and may change in different contexts.

When research has focused on disaster situations, resilience is seen as a, "capacity of a dynamic system to withstand or recover from significant challenges that threaten its stability, viability, or development" (Masten & Narayan, 2012, p. 231). Resistance to impact, or fast adaptation after disasters, are interpreted as signs of resilience. Individuals, including children and youth showing high levels of resilience are seen to return to normal levels of functioning in the short term (Luthar, 2005).

Studies indicate that there is a marked variation in observed effects in individuals who have been exposed to the 'same' disaster. This may reflect the capacities of individuals to respond in a resilient way to the disaster. Bonanno (2004) discusses resilience as: a complex phenomenon resulting from a mix of factors including personality; interpersonal variables, such as supportive relationships; and the type severity, and duration of the stressor.

Studies of resilience in children, youth and adults, have focused on capacities and factors that promote an ability to adapt quickly after adversity and to function at an appropriate developmental

level. Processes and elements that have been linked to children and adults, showing a capacity for resilience, can be intrapersonal, interpersonal or societal in aspect.

Intrapersonal factors have been researched for decades. Some of them include: self-efficacy (Bandura, 1977; 1997), sense of coherence and problem-solving appraisal (Antonovsky, 1979), hardiness (Kobasa, 1979), and self-enhancement and flexible adaptation (Bonanno, 2004).

Interpersonal factors comprise a supportive and protective family and social network and what they can deliver (Luthar, 2006; Qouta, Punamaki, & El Sarraj, 2008). Several studies have shown that the wider community contexts can be important in promoting resiliency. Norris et al., (2008) have looked at factors that aid community resilience in the context of disaster, and the positive flow-on effect of community resilience to the local population. Additionally, organisational elements within a community can promote coping and resiliency (Paton & Burke, 2007), and child-nurturing institutions such as schools (Masten & Osofsky, 2010) are able to scaffold and promote resiliency processes.

Furthermore, understanding resilient processes or indeed any recovery process in children and youth needs to integrate the child's developmental capacities into the analysis. Characteristics supportive of resilience appear in early childhood (Osofsky, Osofsky, Kronenberg, Brennan, & Cross Hansel, 2009). The authors describe young children having an adaptable, easy temperament and good interpersonal skills, as showing resilient strategies. With age, children develop greater ability to use cognitive approaches and can re-appraise and reframe challenges in coping with events. Problem-solving skills have been linked to positive coping and resilient processes (Masten & Cicchetti, 2010). Age and developmental skills, that increase cognitive understanding of an event, can moderate exposure to adversity such as disaster, and increase capacity to cope positively over a recovery trajectory. Conversely, these skills may also increase the child or youth's vulnerability, in that an increased understanding of the disaster and consequences may also exacerbate distress. Developmental capacities in children and youth evolve over time, within the young person's individual make-up, and in relation to their interpersonal relationships. Therefore, this complex unfolding of capacities needs to be

taken into account when researching recovery trajectories in children and young people.

Additionally, Masten (2011; 2012) notes that there are few studies with 'low-exposure comparison groups' where a baseline measure of resiliency would allow clearer analysis of resiliency processes post-disaster.

Finally, some researchers have postulated that this 'positive illusion' of having certain attributes is an altering of self-perception in order to increase a sense of control over a situation (Smith & Cook, 2004). Whether self-reported resiliency is an illusion is not necessarily a negative phenomenon. Individuals who feel they are coping positively in a rapid, resilient fashion may feel more self-confident and show self-mastery, which in turn could be reinforced to increase adaptive capacity (Benight & Bandura, 2003). This is an avenue for exploration in research. Self-enhancement may allow individuals to deal more effectively with the consequences of disasters.

Post-Traumatic Growth (PTG)

Increasingly, research examining how traumatic experiences are resolved, has highlighted the fact that some individuals actually appear to thrive in adversity and eventually function above their pre-disaster level.

This positive qualitative shift in functioning has been defined in several ways by researchers: McMillen, Smith and Fisher (1997) talk of perceived benefits; Park (1998) writes of stress-related growth; Abraido-Lanza, Guier, and Colon (1998) of thriving; and Joseph and Linley (2006; 2008), of Post-Adversity Growth (PAG).

Tedeschi and Calhoun (1996) coined Post-Traumatic Growth (PTG), which is defined as a positive psychological change experienced as a result of an individual's struggle to cope with a highly challenging event (Tedeschi & Calhoun, 1996; 2004).

Joseph and Linley (2008) developed a clear, theoretical model that elucidates aspects of growth following disasters. Growth in this model is described as accommodating positively to the new reality. Additionally they contrast Post-adversity growth with resiliency coping, which assimilates the new reality into an on-going, existing worldview. Moreover, the model uses word adversity within growth and avoids use of trauma, which is a potential rather than foregone result of living through adversity.

Tedeschi and Calhoun (2004) too, have further developed their initial concept and underline that it is not the potentially traumatic event in itself, that results in PTG, but rather the struggle with situations such as disasters that is distressful, and yet a catalyst for growth. This means that the growth process evolves during a recovery trajectory, and is often accompanied by stress and distress. Assumptions about the world as a safe and predictable place may be shattered (Janoff-Bulman, 1992). Disasters can seriously challenge the person's ways of understanding the world and their place in it. Individuals may struggle to build a new representation of the world, and it is the struggle with, and the transformation of, the view of the world that may lead to PTG.

Recent reviews of PTG research have demonstrated that continuing personal distress and growth often co-exist in this recovery process. Zoellner and Maercker (2006) hypothesise that the change and evolution of a person's view of the world often results in initial distress following the disaster, before increasingly positive coping strategies lead to a higher functioning, in a PTG recovery outcome.

In persons demonstrating PTG, their later functioning is higher than pre-disaster functioning. Lepore and Revenson (2006) have stated that growth following adversity is not the absence of post-traumatic stress reactions, but the presence of positive states. The paradox of distress and growth can co-exist. Consequently, the recovery trajectories for these individuals may be expected to appear initially negative, with lower than pre-disaster functioning, and to evolve positively over time.

Again, the majority of research on PTG has focused on the adult population. PTG and the positive psychological changes in this process are found in five domains: new possibilities, relating to others, personal strength, appreciation of life and spiritual change (Tedeschi & Calhoun, 1996; 2004).

Although there continues to be a gap in research of PTG and children, several recent studies give overviews of findings that examine PTG in children and youth (Clay, Knibbs, & Joseph, 2009; Meyerson, Grant, Carter, & Kilmer, 2011). In an attempt to look at both Post-Traumatic Stress PTS and PTG in children, Alisic, van der Schoot, van Ginkel and Kleber (2008) concluded that although

children typically respond well to difficult life circumstances, traumatic exposure does show consequences for the well-being of children. This study also determined that PTS and PTG are found in children as co-existent constructs.

Taku, Tedeschi, Calhoun, Gil-Rivas, Kilmer, and Cann (2007) confirmed the construct analysis of PTG in Japanese youth, and yet suggested there may be cultural differences. However, people from different cultures may define PTG differently. Taku (2010) has also demonstrated that PTG may be of different levels in the five domains described above, in that growth is not consistent over all areas.

Overall, research on PTG in children and youth specifically within disaster contexts has been limited. Cryder, Kilmer, Tedeschi, and Calhoun (2006) undertook an exploratory study, and first systematic study, of PTG in children and youth recovering from a hurricane/flooding disaster. Although far from conclusive, the findings suggested that children's competency beliefs were related to PTG indicators and that a supportive social environment appeared related to the children's competency beliefs. Hafstad, Gil-Rivas, Kilmer, and Raeder (2010) highlighted parental post-trauma well-being and functioning in their study into PTG in Norwegian children and adolescents, following the 2004 Tsunami. They found that parents self-reported PTG was a predictor of PTG in their children. Parental and social relationships may therefore play a role in children's PTG development. Kilmer (2006), and Kilmer and Gil-Rivas (2010) further examined PTG in children, and the use of the PTG Growth inventory revised for children and adolescents (PTGI-R-C), in a population of children following hurricane Katrina. They raise the important issue of children's responses and reactions being closely tied to their developmental level, which is reflected in their cognitive, emotional and behavioural capacity to understand and respond to a disaster event. Some researchers have postulated the idea that children's reported PTG could be solely the result of maturation in their developmental levels. However, this is not confirmed by both Taku et al. (2007) and Alisic et al. (2008), who found that children who had reported experiencing a traumatic event also reported more PTG than children not experiencing this type of event, who had similar developmental levels.

The construct of PTG in children has only recently been researched in any depth. Not all researchers are satisfied that PTG is as yet well-understood, or that it is a proven theoretical concept. There is a further need to develop a common definition of growth following adversity as well as further exploration concerning the dynamic nature of PTG over time. Additional research on PTG in children is necessary to confirm whether children are demonstrating PTG separately or in conjunction with advances in their developmental skills. It is important to integrate developmental functioning as a parameter in understanding childhood recovery trajectories. Both resiliency processes and PTG are domains to be taken into consideration when researching recovery trajectories in children and youth.

Within the present context of research into recovery from disasters, the present study examines what influences this capacity to cope, recover and perhaps even operate at a higher level of functioning. It will look at both resilient processes and post-traumatic growth within the context of children and youth's post-disaster recovery from the Canterbury earthquakes.

Present Study

Rationale

The study is set in the context of the Canterbury Earthquakes. This disaster was a series of repeated, extensive-impact adverse earthquakes from September 2010 to May 2012, and their consequences (Bannister & Gledhill, 2012). It will focus on children and youth by exploring the inter-related recovery processes of children and youth, within their family and community contexts.

As noted previously, compared to understanding adult factors of coping and recovery from adversity, much less is known about children's and young persons' evaluation of environmental experience and how this interacts with developmental stages, family, and community structures, to influence positive coping, recovery and well-being.

In order to have a more comprehensive understanding of positive coping, and recovery after disaster, and to enhance our understanding of functioning children, youth, and their communities, the research will examine the overall recovery and the multiple trajectories that this affected population may demonstrate. It will attempt to clarify positive factors and elements

that enhance well-being and personal growth, as well as acknowledging the distress and potential vulnerability, which is a common experience of living through adversity. Previous studies have typically focused on relatively acute experience but this study will examine adaptation, using a study of experience over the course of a recovery process.

Research Questions

The study will investigate how children, and youth cope with disasters and their consequences. It will attempt to clarify which elements support or inhibit coping and to examine whether children and youth cope differently compared to adults. It will explore outcomes that indicate coping and resilient processes and endeavour to shed light on factors promoting this coping. Finally, it will examine processes in those children and youth that demonstrate growth from experiencing adversity.

Conclusion

This research is still in the early stages. The first data collection is now completed. It will endeavour to contribute to the paucity of research presently available on children and youth's recovery trajectories, and to understand how children and youth cope positively with adversity, specifically the complex adversity of disasters.

It is hoped that the results emerging will inform future preparation for adversity and increase support to children and youth recovering from challenging life experiences, including disasters.

Acknowledgements

I wish to thank and acknowledge the Joint Centre for Disaster Research, GNS Science and the Ministry of Education for their enabling support for this study.

Maureen Mooney is in year two as a Doctorate student in the Joint Centre for Disaster Research, within the School of Psychology, Massey University, Wellington and GNS Science, and is currently analysing her data from children and youth, who experienced the Canterbury earthquakes. Her focus in the present paper is a review of how children and caregivers cope positively both with adversity, and within their recovery process. Her research interests include coping, resilience, and post-adversity growth in the context of disasters and adverse events.

References

- Abraído-Lanza, A. F., Guier, C., & Colón, R. M. (1998). Psychological thriving among Latinas with chronic illness. *Journal of Social Issues, 54*(2), 405–424.
- Adams, R. E., & Boscarino, J. A. (2006). Predictors of PTSD and delayed PTSD after disaster: The impact of exposure and psychosocial resources. *Journal of Nervous & Mental Disorders, 194*(7), 485–493.
- Alisic, E., van der Schoot, T. A. W., van Ginkel, J. R., & Kleber, R. J. (2008). Looking beyond posttraumatic stress disorder in children: Posttraumatic stress reactions, posttraumatic growth, and quality of life in a general population sample. *The Journal of Clinical Psychiatry, 69*, 1455–1461.
- Antonovsky, A. (1979). *Health, stress and coping*. San Francisco, CA: Jossey-Bass Publishers.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review, 84*(2), 191–215.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: Freeman.
- Bannister, S., & Gledhill, K. (2012). Evolution of the 2010–2012 Canterbury earthquake sequence. *New Zealand Journal of Geology and Geophysics, 55*(3), 295–304.
- Benight, C. C., & Bandura, A. (2003). Social cognitive theory of posttraumatic recovery: The role of perceived self-efficacy. *Behaviour Research and Therapy, 42*, 1129–1148.
- Beutler, L. E., & Moos, R. H. (2003). Coping and coping styles in personality and treatment planning: Introduction to the special series. *Journal of Clinical Psychology, 59*(10), 1045–1047.
- Bonanno, G. A. (2004). Loss, trauma and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59*(1), 20–28.
- Bonanno, G. A., Brewin, C. R., Kaniasty, K., & La Greca, A. M. (2010). Weighing the costs of disaster: Consequences, risks, and resilience in individuals, families and communities. *Psychological Science Public Interest, 11*(1), 1–49.
- Bonanno, G. A., Galea, S., Bucciarrelli, A., & Vlahov, D. (2006). Psychological resilience after disasters. *Psychological Science, 17*(3), 181–186.
- Brewin, C. R., Andrews, B., & Valentine, J. D. (2000). Meta-analysis of risk factors for post-traumatic stress disorder in trauma exposed adults. *Journal of Consulting and Clinical Psychology, 68*, 748–766.
- Bronfenbrenner, U. (1979). Contexts of child rearing: Problems and prospects. *American Psychologist, 34*(10), 844–850.
- Clay, R., Knibbs, J., & Joseph, S. (2009). Measurement of posttraumatic growth in young people: A review. *Clinical Child Psychology and Psychiatry, 14*, 411–422.
- Copeland, W. E., Keeler, G., Angold, A., & Costello, E. J. (2007). Traumatic events & post-traumatic stress in childhood. *Archives of General Psychiatry, 64*, 577–584.
- Cryder, C. H., Kilmer, R. P., Tedeschi, R. G., & Calhoun, L. G. (2006). An exploratory study of posttraumatic growth in children following a natural disaster. *The American Journal of Orthopsychiatry, 76*, 65–69.
- Cyrulnik, B. (1999). *Un merveilleux malheur*. Paris, France: Odile Jacob.
- Eisenbruch, M., de Jong, J. T. V. M., & van de Put, W. (2004). Bringing order out of chaos: A culturally competent approach to managing the problems of refugees and victims of organized violence. *Journal of Traumatic Stress, 17*(2), 123–131.
- Ford, J. D., Tennen, H., & Albert, D. (2007). A contrarian view of growth following adversity. In S. Joseph & P. A. Linley. (Eds.), *Trauma, recovery and growth: Positive psychological perspectives on posttraumatic stress* (pp. 297–325). Hoboken, NJ: John Wiley & Sons.
- Frazier, P. A., & Berman, M. I. (2006). Posttraumatic growth following sexual assault. In S. Joseph & P. A. Linley (Eds.), *Trauma, recovery and growth: Positive psychological perspectives on posttraumatic stress* (pp. 161–185). Hoboken, NJ: John Wiley & Sons.
- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist, 56*, 218–226.
- Gottlieb, G. (2007). Probabilistic epigenesis. *Developmental Science, 10*(1), 1–11.
- Hafstad, G. S., Gil-Rivas, V., Kilmer, R. P., & Raeder, S. (2010). Parental adjustment, family functioning, and posttraumatic growth among Norwegian children and adolescents following a natural disaster. *The American Journal of Orthopsychiatry, 80*, 248–257.
- Hobfoll, S. E., Watson P, Bell, C. C., Bryant, R. A., Brymer, M. J., Friedman, M. J., ... Ursano, R. J. (2007). Five essential elements of immediate and mid-term mass trauma intervention: Empirical evidence. *Psychiatry, 70*(4), 283–315.
- Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of trauma*. New York: The Free Press.
- Joseph, S., & Linley, P. A. (2006). Growth following adversity: Theoretical perspectives and implications for clinical practice. *Clinical Psychology Review, 26*(8), 1041–1053.

SURVIVING AND THRIVING

- Joseph, S., & Linley, P. A. (Eds.). (2008). *Trauma, recovery and growth: Positive psychological perspectives on posttraumatic stress*. Hoboken, NJ: Wiley.
- Joseph, S., & Williams, R. (2005). Understanding posttraumatic stress: Theory, reflections, context and future. *Behavioural and Cognitive Psychotherapy*, 33(4), 423-441.
- Kessler, R. C., Sonnega, A., Bromet, E., Hughes M., & Nelson C. B. (1995). Posttraumatic stress disorder in the national comorbidity survey. *Archive of General Psychiatry*, 52(12), 1048-1060.
- Kilmer, R. P. (2006). Resilience and posttraumatic growth in children. In L. G. Calhoun, & R. G. Tedeschi (Eds.), *Handbook of posttraumatic growth: Research and practice* (pp. 264–288). Mahwah, NJ: Lawrence Erlbaum Associates.
- Kilmer, R. P., & Gil-Rivas, V. (2010). Exploring posttraumatic growth in children impacted by hurricane Katrina: Correlates of the phenomenon and developmental considerations. *Child Development*, 81, 1211–1227.
- King, D. W., King, L. A., Foy, D. W., Keane, T. M., & Fairbank, J. A. (1999). Posttraumatic stress disorder in a national sample of female and male Vietnam veterans: Risk factors, war-zone stressors, and resilience-recovery variables. *Journal of Abnormal Psychology*, 108(1), 164-170.
- Kobasa, S. C. (1979). Stressful life events, personality, and health: An inquiry into hardiness. *Journal of Personality and Social Psychology*, 37(1), 1-11.
- La Greca, A. M., Silverman, W. K., Lai, B., & Jaccard, J. (2010). Hurricane-related exposure experiences and stressors, other life events, and social support: Concurrent and prospective impact on children's persistent posttraumatic stress symptoms. *Journal of Consulting and Clinical Psychology*, 78(6), 794–805.
- Lepore, S., & Revenson, T. (2006). Relationships between posttraumatic growth and resilience: Recovery, resistance, and reconfiguration. In L. G. Calhoun & R. G. Tedeschi (Eds.), *Handbook of posttraumatic growth: Research & practice* (pp. 24-47). Mahwah, NJ: Lawrence Erlbaum Associates.
- Luthar, S. S. (2005). *Resilience at an early age and its impact on child psychosocial development*. Retrieved from <http://www.enfant-encyclopedie.com/pages/PDF/LutharANGxp.pdf>
- Luthar, S. S. (2006). Resilience in development: A synthesis of research across five decades. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology, vol 3: Risk, disorder, and adaptation* (2nd ed.) (pp. 739–95). Hoboken, NJ: Wiley.
- Mancini, A. D., & Bonanno, G. A. (2006). Resilience in the face of potential trauma: Clinical practices and illustrations. *Journal of Clinical Psychology* 2(8), 971–985.
- Masten, A. (2011). Resilience in children threatened by extreme adversity: Frameworks for research, practice, and translational synergy. *Development and Psychopathology*, 23(2), 493-506.
- Masten, A. S., & Cicchetti, D. (2010). Developmental cascades: Part 1. *Developmental Psychopathology*, 22(3), 491–95.
- Masten, A. S., & Narayan, A. J. (2012). Child development in the context of disaster, war, and terrorism: Pathways of risk and resilience. *Annual Review of Psychology*, 63, 227–257.
- Masten, A., & Osofsky, J. D. (2010). Disasters and their impact on child development: Introduction to the special section. *Child Development*, 81(4), 1029–39.
- McMillen, J. C., Smith, E. M., & Fisher, R. H. (1997). Perceived benefit and mental health after three types of disaster. *Journal of Consulting and Clinical Psychology*, 65, 733-739.
- Meyerson, D. A., Grant, K. E., Smith Carter, J., & Kilmer R. P. (2011). Posttraumatic growth among children and adolescents: A systematic review. *Clinical Psychology Review*, 31, 949–964.
- Mooney, M. F., Paton, D., de Terte, I., Johal, S., Nuray Karanci, A., Gardner D., ... Johnston, D. M. (2011). Psychosocial recovery from disasters: A framework informed by evidence. *The New Zealand Journal of Psychology*, 40(4), 26-38.
- Norris, F. H., Steven, S. P., Pfefferbaum, B., Wyche, K. F., & Pfefferbaum, R. L. (2008). Community resilience as a metaphor, theory, set of capacities, and strategy for disaster readiness. *American Journal of Community Psychology*, 41, 127–150.
- Osofsky, H. J., Osofsky, J. D., Kronenberg, M., Brennan, A., Cross Hansel, T. (2009). Posttraumatic stress symptoms in children after hurricane Katrina: Predicting the need for mental health services. *American Journal of Orthopsychiatry*, 79(2), 212–220.
- Ozer, E. J., Best, S. R., Lipsey, T. L., & Weiss, D. S. (2003). Predictors of post-traumatic stress disorder and symptoms in adults: A meta-analysis. *Psychological Bulletin*, 129(1) 52–73.
- Park, C. L., (1998) Stress-related growth and thriving through coping: The roles of personality and cognitive processes. *Journal of Social Issues*, 54(2), 267-277.
- Paton, D., & Burke, K. J. (2007). Personal and organizational predictors of posttraumatic adaptation and growth in police officers. *The Australasian*

- Journal of Disaster and Trauma Studies*, (Electronic Version). Retrieved from <http://trauma.massey.ac.nz/issues/2007-1/paton-burke.htm>
- Paton, D., & Johnston, D. M. (2006). *Disaster resilience: An integrated approach*. Springfield, IL: Charles C. Thomas.
- Qouta, S., Punamaki, R-L., & El Sarraj, E. (2008). Child development and family mental health in war and military violence: The Palestinian experience. *International Journal of Behavioural Development*, 32(4), 310–321.
- Ronan, K. R., & Johnston, D. M. (1999). Behaviourally based interventions for children following volcanic eruptions: An evaluation of effectiveness. *Disaster Prevention and Management*, 8(3), 169-176.
- Ryan, R. M., & Deci, E. L. (2001). On happiness and human potentials: A review of research on hedonic and eudaimonic well-being. *Annual Review of Psychology*, 52, 141–166.
- Salmon, K., & Bryant, R. A. (2002). Posttraumatic stress disorder in children: The influence of developmental factors. *Clinical Psychology Review*, 22, 163–188.
- Scheier, M. F., Carver, C. S., & Bridge, M. W. (2001). Optimism, pessimism, and psychological well-being. In E. C. Chang (Ed.), *Optimism and pessimism: Implications for theory, research, and practice* (pp. 89–216). Washington, DC: American Psychological Association.
- Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive Psychology: An introduction. *American Psychologist*, 55(1), 5-14.
- Smith, S. G., & Cook, S. L. (2004). Are reports of posttraumatic growth positively biased? *Journal of Traumatic Stress*, 17(4), 353-358.
- Taku, K. (2010). Commonly-defined and individually defined posttraumatic growth in the US and Japan. *Personality and Individual Differences*, 51, 188-193.
- Taku, K., Calhoun, L. G., Tedeschi, R. G., Gil-Rivas, V., Kilmer, R. P., & Cann, A. (2007). Examining posttraumatic growth among Japanese university students. *Anxiety, Stress, and Coping*, 20, 353–367.
- Tedeschi, R. G., & Calhoun, L. G. (1996). The post traumatic growth inventory: Measuring the positive legacy of trauma. *Journal of Traumatic Stress*, 9, 455–471.
- Tedeschi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations and empirical evidence. *Psychological Inquiry*, 15, 1–18.
- Tugade, M. M., & Fredrickson, B. L. (2004). Resilient individuals use positive emotions to bounce back from negative emotional arousal. *Journal of Personality and Social Psychology*, 86(2), 320–333.
- Zoellner, T., & Maercker, A. (2004). The Janus face of self-perceived growth: Toward a two-component model of posttraumatic growth. *Psychological Inquiry*, 15, 41–48.

This page intentionally left blank.